2022 Annual Groundwater Monitoring Report

Range Road Coal Combustion Residual Landfill
3600 Range Road
China Township, Michigan

January 2023

Prepared For:

DTE Electric Company

Prepared By:

TRC
1540 Eisenhower Place
Ann Arbor, Michigan 48108

Vincent E. Buening, C.P.G.
Senior Project Manager

Dave B. McKenzie, P.E.
Senior Project Engineer

Sarah B. Holmstrom, P.G.
Senior Hydrogeologist

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Executive Summary

On April 17, 2015, the United States Environmental Protection Agency (USEPA) published the final rule for the regulation and management of Coal Combustion Residuals (CCR) under the Resource Conservation and Recovery Act (RCRA) (the CCR Rule), as amended. The CCR Rule, which became effective on October 19, 2015 (with amendments in 2018 and 2020), applies to the DTE Electric Company (DTE Electric) Range Road Coal Combustion Residual Landfill (RRLF) CCR unit. Pursuant to the CCR Rule, no later than January 31, 2018, and annually thereafter, the owner or operator of a CCR unit must prepare an annual groundwater monitoring and corrective action report for the CCR unit documenting the status of groundwater monitoring and corrective action for the preceding year in accordance with §257.90(e). On behalf of DTE Electric, TRC Engineers Michigan, Inc., the engineering entity of TRC, has prepared this 2022 Annual Groundwater Monitoring Report for calendar year 2022 activities at the RRLF CCR unit.

The RRLF was operating under the detection monitoring program at the start of the 2022 annual reporting period and remained in the detection monitoring program through the end of the 2022 annual reporting period. The semiannual detection monitoring events for 2022 were completed in April and October 2022 and included sampling and analyzing groundwater within the groundwater monitoring system for the indicator parameters listed in Appendix III to the CCR Rule. As part of the statistical evaluation, the data collected during detection monitoring events are evaluated to identify statistically significant increases (SSIs) in Appendix III parameters to determine if concentrations in groundwater exceed background levels. All the monitoring data that have been collected and evaluated under §257.90 through §257.98 in 2022 are presented in this report.

Potential SSIs over background limits were noted for several Appendix III constituents in one or more monitoring wells during the April and October 2022 monitoring events. Most of these potential SSIs were either not statistically significant (i.e. verification resampling did not confirm the exceedance) or were evaluated and determined to be a result of natural variability as documented in previous still applicable alternative source demonstrations (ASDs). No initial SSIs over background limits were recorded for Appendix III constituents during the April 2022 monitoring event. DTE Electric is in the process of performing an ASD to further evaluate calcium SSIs at monitoring wells MW-16-01 and MW-16-04 for the October 2022 monitoring event. Therefore, detection monitoring will be continued at the RRLF CCR unit in accordance with §257.94 of the CCR Rule pending completion of a successful ASD. With the presence of the vertically and horizontally extensive clay-rich confining till beneath the RRLF CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from operations.

1.0 Introduction

1.1 Program Summary

On April 17, 2015, the United States Environmental Protection Agency (USEPA) published the final rule for the regulation and management of Coal Combustion Residuals (CCR) under the Resource Conservation and Recovery Act (RCRA) (the CCR Rule), as amended. The CCR Rule, which became effective on October 19, 2015 (with amendments in 2018 and 2020), applies to the DTE Electric Company (DTE Electric) Range Road Coal Combustion Residual Landfill (RRLF) CCR unit. Pursuant to the CCR Rule, no later than January 31, 2018, and annually thereafter, the owner or operator of a CCR unit must prepare an annual groundwater monitoring and corrective action report for the CCR unit documenting the status of groundwater monitoring and corrective action for the preceding year in accordance with §257.90(e). On behalf of DTE Electric, TRC Engineers Michigan, Inc., the engineering entity of TRC, has prepared this Annual Groundwater Monitoring Report for calendar year 2022 activities at the RRLF CCR unit (2022 Annual Report).

This 2022 Annual Report presents the monitoring results and the statistical evaluation of the detection monitoring parameters (Appendix III to Part 257 of the CCR Rule) for the April and October 2022 semiannual groundwater monitoring events for the RRLF CCR unit in addition to the alternative source demonstration for the second 2021 semiannual detection monitoring event (Appendix A). Detection monitoring for these events continued to be performed in accordance with the *CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company Range Road Landfill* (QAPP) (TRC, July 2016; revised August 2017) and statistically evaluated per the *Groundwater Statistical Evaluation Plan – DTE Electric Company Range Road Coal Combustion Residual Landfill* (Stats Plan) (TRC, October 2017). As part of the statistical evaluation, the data collected during detection monitoring events are evaluated to identify SSIs of detection monitoring parameters compared to background levels.

1.2 Site Overview

The RRLF is located in Section 12, Township 4 North, Range 16 East, 3600 Range Road, China Township in St. Clair County, Michigan. The site occupies approximately 514 acres and is one-half mile west of the St. Clair River and one mile north of the Belle River Power Plant. Prior to Detroit Edison's operations commencing in the 1950s, the RRLF property was used as farmland. The property has been used continuously as a coal ash landfill since Detroit Edison Company (now DTE Electric) began coal ash landfilling operations at the RRLF in the 1950s and is constructed over a natural confining, low permeability clay-rich soil base that serves as an underlying soil barrier. The RRLF property consists of approximately 514 acres of which approximately 402 acres are designated for landfill development. CCR currently occupies approximately 200 acres of the RRLF.

The RRLF is a licensed Coal Ash Landfill in accordance with Michigan's regulations, and is owned and operated by DTE Electric. The disposal facility currently accepts coal ash from DTE Electric's Belle River power plant, from the now inactive former DTE Electric St. Clair power plant and has historically accepted coal ash from the former DTE Electric Marysville and Harbor Beach power plants. The RRLF is operated under the current operating license number 9395 in

accordance with Michigan Part 115 of the Natural Resources and Environmental Protection Act (NREPA), PA 451 of 1994, as amended.

1.3 Geology/Hydrogeology

The RRLF CCR unit is located approximately one-half mile west of the St. Clair River. In general, the RRLF is underlain by 86 to as much as 188 feet of laterally extensive low hydraulic conductivity silty clay-rich deposits. On the eastern portion and northwest corner of RRLF some thin partially saturated silty sand near-surface deposits are present. These deposits are not laterally contiguous, are not in communication with the deeper uppermost aquifer, do not yield a useable quantity of groundwater, and thus are not considered an aquifer per the CCR Rule. On a significant portion of the RRLF, there is a bedrock valley that trends from the northeast corner to the south-central area of the site. The valley is incised in the Bedford and/or Antrim Shale bedrock and filled with unconsolidated glacial deposits consisting of clay, silt, sand and/or gravel. Based on historical oil well logs from the RRLF area, the bedrock valley extends to depths of up to 303 feet below ground surface (ft bgs). Along the western portion of the RRLF, clay-rich till is present continuously to the top of the underlying Bedford or Antrim Shale bedrock in the area of SB-16-01 and SB-16-02 (Figure 1), creating a no flow boundary.

Groundwater within the uppermost aquifer sand/gravel is confined and protected from the CCR unit by the overlying clay-rich aquitard. The top of the sand/gravel uppermost aquifer encountered at each of the CCR monitoring wells and soil borings is at significantly different elevations across the RRLF that, where present, is first encountered at depths ranging from 86 to 196 ft bgs, immediately beneath the overlying clay-rich aquitard. The variability in boring/well depths is a consequence of the heterogeneity of the glacial deposits and is driven by the limited continuity of the coarse-grained sand and gravel outwash within the overlying/encapsulating fine-grained, silty clay till that confines the uppermost aquifer. In addition, there is an apparent lack of interconnection and/or significant vertical variation between the various uppermost aquifer sand and/or gravel units encountered across the RRLF CCR unit.

Given the horizontally expansive clay with substantial vertical thickness, the heterogeneity of the glacial deposits (with the top of the uppermost aquifer elevation across the RRLF CCR unit varying up to 100 feet vertically), the no-flow boundary to the west, and the lack of hydraulic interconnectedness of the uppermost aquifers encountered at the site in some areas, it is not appropriate to infer horizontal flow direction or gradients across the site. If CCR affected groundwater were able to penetrate the clay-rich underlying confining till, it would travel radially away from the RRLF. However, with the presence of the vertically and horizontally extensive clay-rich confining till beneath the RRLF CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from operations that began in the 1950s.

2.0 Groundwater Monitoring

2.1 Monitoring Well Network

A groundwater monitoring system has been established for the RRLF CCR unit as detailed in the *Groundwater Monitoring System Summary Report – DTE Electric Company Range Road Coal Combustion Residual Landfill* (GWMS Report) (TRC, October 2017). The detection monitoring well network for the RRLF CCR unit currently consists of seven monitoring wells that are screened in the uppermost aquifer. Monitoring wells MW-16-01 through MW-16-07 are located around the north, east and south perimeter of the RRLF and provide data on both background and downgradient groundwater quality that has not been affected by the CCR unit (total of seven background/downgradient monitoring wells). The monitoring well locations are shown on Figure 2.

2.2 Semiannual Groundwater Monitoring

The semiannual monitoring parameters for the detection monitoring program were selected per the CCR Rule's Appendix III to Part 257 – Constituents for Detection Monitoring. The Appendix III indicator parameters consist of boron, calcium, chloride, fluoride, pH (field reading), sulfate, and total dissolved solids (TDS) and were analyzed in accordance with the sampling and analysis plan included within the QAPP. In addition to pH, the collected field parameters included dissolved oxygen, oxidation reduction potential, specific conductivity, temperature, and turbidity.

2.2.1 Data Summary

The first semiannual detection monitoring event for 2022 was performed April 25th and 26th, 2022 by TRC personnel and samples were analyzed by Eurofins Environment Testing America (Eurofins) in accordance with the QAPP. Static water elevation data were collected at all seven monitoring well locations. Groundwater samples were collected from the seven detection monitoring wells for the Appendix III indicator parameters and field parameters. A summary of the groundwater data collected during the April 2022 event is provided on Table 1 (static groundwater elevation data), Table 2 (field data), and Table 3 (analytical results).

The second semiannual groundwater detection monitoring event for 2022 was performed from October 17th to 27th, 2022 by TRC personnel and samples were analyzed by Eurofins in accordance with the QAPP. Static water elevation data were collected at all seven monitoring well locations. Groundwater samples were collected from the seven detection monitoring wells for the Appendix III indicator parameters and field parameters. A summary of the groundwater data collected during the October 2022 event is provided on Table 1 (static groundwater elevation data), Table 2 (field data), and Table 4 (analytical results). The laboratory analytical reports for each detection monitoring event are included in Appendix B.

2.2.2 Data Quality Review

Data from each round were evaluated for completeness, overall quality and usability, method-specified sample holding times, precision and accuracy, and potential sample contamination.

The data were found to be complete and usable for the purposes of the CCR monitoring program. Data quality reviews are summarized in Appendix C.

2.2.3 Groundwater Flow Rate and Direction

As presented in the GWMS Report, and mentioned above, given the horizontally expansive clay with substantial vertical thickness, the heterogeneity of the glacial deposits (with the top of the uppermost aquifer elevation across the RRLF CCR unit varying up to 100 feet vertically), the no-flow boundary to the west, and the lack of hydraulic interconnectedness of the uppermost aquifers encountered at the site in some areas, it is not appropriate to infer horizontal flow direction or gradients across the site. Groundwater elevations measured across the Site during the April 2022 sampling event are provided on Table 1 and are summarized in plan view on Figure 3. Groundwater elevations measured across the Site during the October 2022 sampling event are provided on Table 1 and are summarized in plan view on Figure 4.

Groundwater elevation data collected during the most recent sampling event show that groundwater conditions within the uppermost aquifer are consistent with previous monitoring events and continue to demonstrate that the groundwater monitoring wells are appropriately positioned to detect the presence of Appendix III parameters that could potentially migrate from the RRLF CCR unit.

3.0 Statistical Evaluation

3.1 Establishing Background Limits

As discussed in the Stats Plan, intrawell statistical methods for RRLF were selected based on the geology and hydrogeology at the Site (primarily the presence of clay/hydraulic barrier, the variability in the presence of the uppermost aquifer across the site, and the presence of a no flow boundary on the west side of the aquifer), in addition to other supporting lines of evidence that the aquifer is unaffected by the CCR unit (such as the consistency in concentrations of water quality data). An intrawell statistical approach requires that each downgradient well doubles as a background and compliance well, where data from each individual well during a detection monitoring event is compared to a statistical limit developed using the background dataset from that same well.

Per the Stats Plan, background limits were established for the Appendix III indicator parameters following the collection of at least eight background monitoring events using data collected from each of the seven established detection monitoring wells (MW-16-01 through MW-16-07). The initial statistical evaluation of the background data is presented in the 2017 Annual Report. The Appendix III background limits for each monitoring well will be used throughout the detection monitoring period to determine whether groundwater has been impacted from the RRLF CCR unit by comparing concentrations in the detection monitoring wells to their respective background limits for each Appendix III indicator parameter.

Prediction limits are periodically updated to reflect the additional data and additional temporal variability observed subsequent to the initial statistical limit calculation in 2018. The Appendix III prediction limits at the RRLF were updated in December 2021 to incorporate additional data collected since 2017 as presented in the December 15, 2021 Technical Memorandum, *Uppermost Useable Aquifer Prediction Limit Update – DTE Electric Company, Range Road Coal Combustion Residual Landfill* (included as Appendix D in the *2021 Annual Groundwater Monitoring Report – DTE Electric Company, Range Road Coal Combustion Residual Landfill,* TRC, January 2022).

3.2 Data Comparison to Background Limits – First 2022 Semiannual Event (April 2022)

For each semiannual monitoring event, the concentrations of the indicator parameters in each of the detection monitoring wells (MW-16-01 through MW-16-07) were compared to their respective statistical background limits.

The comparisons of the April 2022 monitoring event data to background limits are presented on Table 3. The statistical evaluation of the April 2022 Appendix III indicator parameters showed potential initial SSIs over background for:

- Calcium at MW-16-05; and
- Sulfate at MW-16-05.

The calcium, sulfate, and TDS concentrations at MW-16-06 are from natural variability and are not from a release at the RRLF as presented in the still applicable August 2019, August 2018, and February 2022 alternate source demonstrations (ASDs), respectively. The sulfate concentration at MW-16-01 is from natural variability and is not from a release at the RRLF as presented in the August 2020 ASD. The 2018, 2019, and 2020 ASDs were prepared for the uppermost usable aquifer under the CCR Rule and included in the 2018, 2019 and 2020 annual GWMRs, respectively. The February 2022 ASD is included in Appendix A of this report.

3.3 Verification Resampling for the First 2022 Semiannual Event

Verification resampling is performed per the Stats Plan and the *USEPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance, USEPA, 2009) to achieve performance standards as specified by §257.93(g) in the CCR Rule. Per the Stats Plan, if there is an exceedance of a prediction limit for one or more of the parameters, the well(s) of concern will be resampled within 30 days of the completion of the initial statistical analysis. Only constituents that initially exceed their statistical limit (i.e., have no previously recorded SSIs) will be analyzed for verification purposes.

Verification resampling for the April 2022 event was conducted on May 26th, 2022 by TRC personnel. A groundwater sample was collected for calcium and sulfate at MW-16-05 in accordance with the QAPP. A summary of the analytical results collected during the May 2022 resampling event is provided on Table 3. The associated data quality review is included in Appendix C.

The verification results for calcium and sulfate at MW-16-05 are below their respective prediction limits, therefore the potential SSIs for calcium and sulfate are not confirmed and no SSIs will be recorded for calcium or sulfate at MW-16-05 during the first semiannual 2022 sampling event. As such, detection monitoring was continued in accordance with §257.94 of the CCR Rule.

3.4 Data Comparison to Background Limits – Second 2022 Semiannual Event (October 2022)

The data comparisons for the October 2022 groundwater monitoring event are presented on Table 4. The statistical evaluation of the October 2022 Appendix III indicator parameters showed potential initial SSIs over background for:

- Calcium at MW-16-01, and MW-16-04; and
- Fluoride at MW-16-07.

As detailed above in Section 3.2, the calcium, sulfate, and TDS concentrations at MW-16-06 have been previously demonstrated to be from natural variability and are not from the CCR unit as presented in the ASDs, which are still applicable to the Second 2022 Semiannual Event. Similarly, the sulfate exceedance at MW-16-01 has also been previously demonstrated to be from natural variability and is not from the CCR unit as presented in the August 2020 ASD that still applies.

3.5 Verification Resampling for the Second 2022 Semiannual Event

Verification resampling is performed per the Stats Plan and the *USEPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance, USEPA, 2009) to achieve performance standards as specified by §257.93(g) in the CCR Rule. Per the Stats Plan, if there is an exceedance of a prediction limit for one or more of the parameters, the well(s) of concern will be resampled within 30 days of the completion of the initial statistical analysis. Only constituents that initially exceed their statistical limit (i.e., have no previously recorded SSIs) will be analyzed for verification purposes.

Verification resampling for the October 2022 event was conducted from November 30th, 2022 to December 1st, 2022 by TRC personnel. Groundwater samples were collected for calcium from MW-16-01 and MW-16-04, and for fluoride from MW-16-07, in accordance with the QAPP. A summary of the analytical results collected during the resampling event is provided on Table 4. The associated data quality review is included in Appendix C. The verification result for fluoride at MW-16-07 is below the prediction limit. Therefore, in accordance with the Stats Plan and the Unified Guidance, the initial exceedance is not statistically significant, and no SSI will be recorded for fluoride for the October 2022 detection monitoring event.

The verification results for calcium at MW-16-01 and MW-16-04 are above their respective prediction limits, consequently the initial potential SSIs from the October 2022 event are confirmed.

According to §257.94(e), in the event that the facility determines, pursuant to §257.93(h), that there is a SSI over background levels for one or more of the Appendix III constituents, the facility will, within 90 days of detecting a SSI, demonstrate that a source other than the CCR unit caused the SSI, or the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. If an ASD is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under §257.95. If an ASD is completed, a certification from a qualified professional engineer is required, and the CCR unit may continue with detection monitoring. The facility must also include the ASD in the annual groundwater monitoring and corrective action report required by §257.90(e), in addition to the certification by a qualified professional engineer.

DTE Electric is in the process of performing an ASD to further evaluate the calcium SSIs at MW-16-01 and MW-16-04. With the presence of the vertically and horizontally extensive clay-rich confining till beneath the RRLF CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from operations.

4.0 Conclusions and Recommendations

No initial SSIs over background limits were recorded for Appendix III constituents during the April 2022 monitoring event. SSIs over the background limits for calcium at MW-16-01 and MW-16-04 were observed during the October 2022 monitoring event and are being further evaluated through the ASD process. As discussed above, and in the GWMS Report, with the presence of the vertically and horizontally extensive clay-rich confining till beneath the RRLF CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from operations.

According to §257.94(e), in the event that the facility determines, pursuant to §257.93(h), that there is a SSI over background levels for one or more of the Appendix III constituents, the facility will, within 90 days of detecting an SSI, establish an assessment monitoring program <or> demonstrate that:

- A source other than the CCR unit caused the SSI, or
- The SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

The owner or operator must complete a written demonstration (i.e., Alternative Source Demonstration, ASD), of the above within 90 days of confirming the SSI. Based on the outcome of the ASD the following steps will be taken:

- If a successful ASD is completed, a certification from a qualified professional engineer is required, and the CCR unit may continue with detection monitoring.

If a successful ASD is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under §257.95. The facility must also include the ASD in the annual groundwater monitoring and corrective action report required by §257.90(e), in addition to the certification by a qualified professional engineer.

In response to the calcium SSIs over the background limit noted during the October 2022 event, DTE plans to prepare an ASD to evaluate whether a source other than the RRLF CCR unit caused the SSI.

No corrective actions were performed in 2022. The next semiannual monitoring event at the RRLF CCR unit is scheduled for the second calendar quarter of 2023.

5.0 Groundwater Monitoring Report Certification

The U.S. EPA's Disposal of Coal Combustion Residuals from Electric Utilities Final Rule Title 40 CFR Part 257 §257.90(e) requires that the owner or operator of an existing CCR unit prepare an annual groundwater monitoring and corrective action report.

Annual Groundwater Monitoring Report Certification
Range Road Landfill
China Township, Michigan

CERTIFICATION

I hereby certify that the annual groundwater and corrective action report presented within this document for the RRLF CCR unit has been prepared to meet the requirements of Title 40 CFR §257.90(e) of the Federal CCR Rule. This document is accurate and has been prepared in accordance with good engineering practices, including the consideration of applicable industry standards, and with the requirements of Title 40 CFR §257.90(e).

Name: David B. McKenzie, P.E.	Expiration Date: December 17, 2023
Company: TRC Engineers Michigan, Inc.	Date: January 31, 2023

Stamp

1/31/23

6.0 References

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USEPA. April 2018. Barnes Johnson (Office of Resource Conservation and Recovery) to James Roewer (c/o Edison Electric Institute) and Douglas Green, Margaret Fawal (Venable LLP). Re: Coal Combustion Residuals Rule Groundwater Monitoring Requirements. April 30, 2018. United States Environmental Protection Agency, Washington, D.C. 20460. Office of Solid Waste and Emergency Response, now the Office of Land and Emergency Management.

Tables

Table 1
Summary of Groundwater Elevation Data – April and October 2022
Range Road Landfill – RCRA CCR Monitoring Program
China Township, Michigan

Well ID	MW-16-01		MW-16-02		MW-16-03		MW-16-04		MW-16-05		MW-16-06		MW-16-07	
Date Installed	1/13/2016		1/27/2016		2/1/2016		5/24/2016		5/13/2016		5/10/2016		5/13/2016	
TOC Elevation	595.35		598.44		597.69		596.87		601.97		600.68		589.34	
Geologic Unit of Screened interval	Sand with Silt		Silty Sand with Gravel		Silty Gravel with Sand		Silty Sand		Gravel with Sand		Sand		Sand	
Screened Interval Elevation	390.7 to 385.7		393.8 to 388.8		432.1 to 427.1		414.1 to 409.1		476.6 to 471.6		508.0 to 503.0		494.4 to 489.4	
Unit	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft
Measurement Date	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation
04/25/2022	18.07	577.28	20.42	578.02	19.65	578.04	18.97	577.90	27.20	574.77	23.33	577.35	16.32	573.02
10/17/2022	18.33	577.02	20.37	578.07	19.60	578.09	19.00	577.87	27.06	574.91	23.39	577.29	15.96	573.38

Notes:

Elevations are reported in feet relative to the North American Vertical Datum of 1988.

ft BTOC - feet below top of casing.

Table 2
Summary of Field Data – April to December 2022
Range Road Landfill – RCRA CCR Monitoring Program
China Township, Michigan

Sample Location	Sample Date	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	pH (SU)	Specific Conductivity (umhos/cm)	Temperature (deg C)	Turbidity (NTU)
MW-16-01	4/25/2022	1.31	-185.7	7.6	1,724	10.6	3.12
	10/17/2022	1.16	-8.4	7.4	1,626	10.5	1.28
	12/1/2022(1)	0.54	-149.3	7.5	1,697	9.9	3.78
MW-16-02	4/25/2022	1.30	-259.2	8.3	1,652	10.2	3.76
	10/17/2022	1.12	-135.2	8.3	1,566	10.2	2.21
MW-16-03	4/25/2022	1.28	-192.9	8.1	1,450	10.6	2.42
	10/17/2022	1.09	-115.9	8.0	1,378	10.9	0.76
MW-16-04	4/26/2022	1.70	-242.2	8.3	6,980	10.5	49.1
	10/27/2022	1.00	-153.6	8.0	6,753	10.9	10.3
	11/30/2022(2)	0.13	-200.5	8.3	6,690	9.0	68.3
MW-16-05	4/25/2022	1.29	-223.6	8.2	1,546	10.8	2.16
	5/26/2022(3)	1.37	22.6	8.0	1,531	11.3	1.31
	10/17/2022	1.15	-63.9	8.2	1,416	10.8	1.26
MW-16-06	4/25/2022	1.50	-113.4	7.6	1,743	10.9	1.68
	10/17/2022	1.14	-72.9	7.7	1,562	10.8	1.32
MW-16-07	4/26/2022	1.54	-170.1	7.8	952	10.2	130
	10/27/2022	0.70	-134.8	7.6	926	9.9	54.5
	11/30/2022(2)	0.09	-123.5	7.8	887	8.0	87.9

Notes:
mg/L -Milligrams per Liter.
mV - Millivolts.
SU - Standard Units.
umhos/cm - Micromhos per centimeter.
°C - Degrees Celsius.
NTU - Nephelometric Turbidity Unit
(1) Results shown for verification sampling performed on 12/1/2022.
(2) Results shown for verification sampling performed on 11/30/2022.
(3) Results shown for verification sampling performed on 5/26/2022.

Table 3
Comparison of Appendix III Parameter Results to Background Limits – April and May 2022
CCR-Range Road Landfill – RCRA CCR Monitoring Program
China Township, Michigan

Sample Location:		MW-16-01		MW-16-02		MW-16-03		MW-16-04		MW-16-05			MW-16-06		MW-16-07	
Sample Date:		4/25/2022	PL	4/25/2022	PL	4/25/2022	PL	4/26/2022	PL	4/25/2022	5/26/2022[1]	PL	4/25/2022	PL	4/26/2022	PL
Constituent	Unit	Data		Data		Data		Data		Data			Data		Data	
Appendix III																
Boron	ug/L	560	620	1,000	1,200	1,100	1,300	1,000	1,200	1,100	--	1,400	1,100	1,200	810	980
Calcium	ug/L	87,000	87,000	22,000	24,000	19,000	28,000	64,000	68,000	**23,000**	18,000	**19,000**	**78,000[2]**	**34,000**	48,000	59,000
Chloride	mg/L	650	770	630	720	510	580	3,200	3,600	530	--	630	420	580	340	380
Fluoride	mg/L	0.81	0.90	2.0	2.1	2.2	2.2	1.6	1.7	1.9	--	2.0	1.3	1.5	1.3	1.3
pH, Field	su	7.6	7.1 - 8.2	8.3	8.0 - 9.0	8.1	8.0 - 8.8	8.3	7.6 - 8.6	8.2	--	8.0 - 8.9	7.6	7.6 - 8.3	7.8	7.3 - 8.4
Sulfate	mg/L	**76[3]**	**45**	< 1.0	10	< 1.0	10	< 5.0	50	**45**	7.0	**10**	**410[4]**	**54**	1.9	74
Total Dissolved Solids	mg/L	1,100	1,300	1,100	1,300	1,000	1,100	4,800	5,300	1,100	--	1,200	**1,400[5]**	**1,100**	620	760

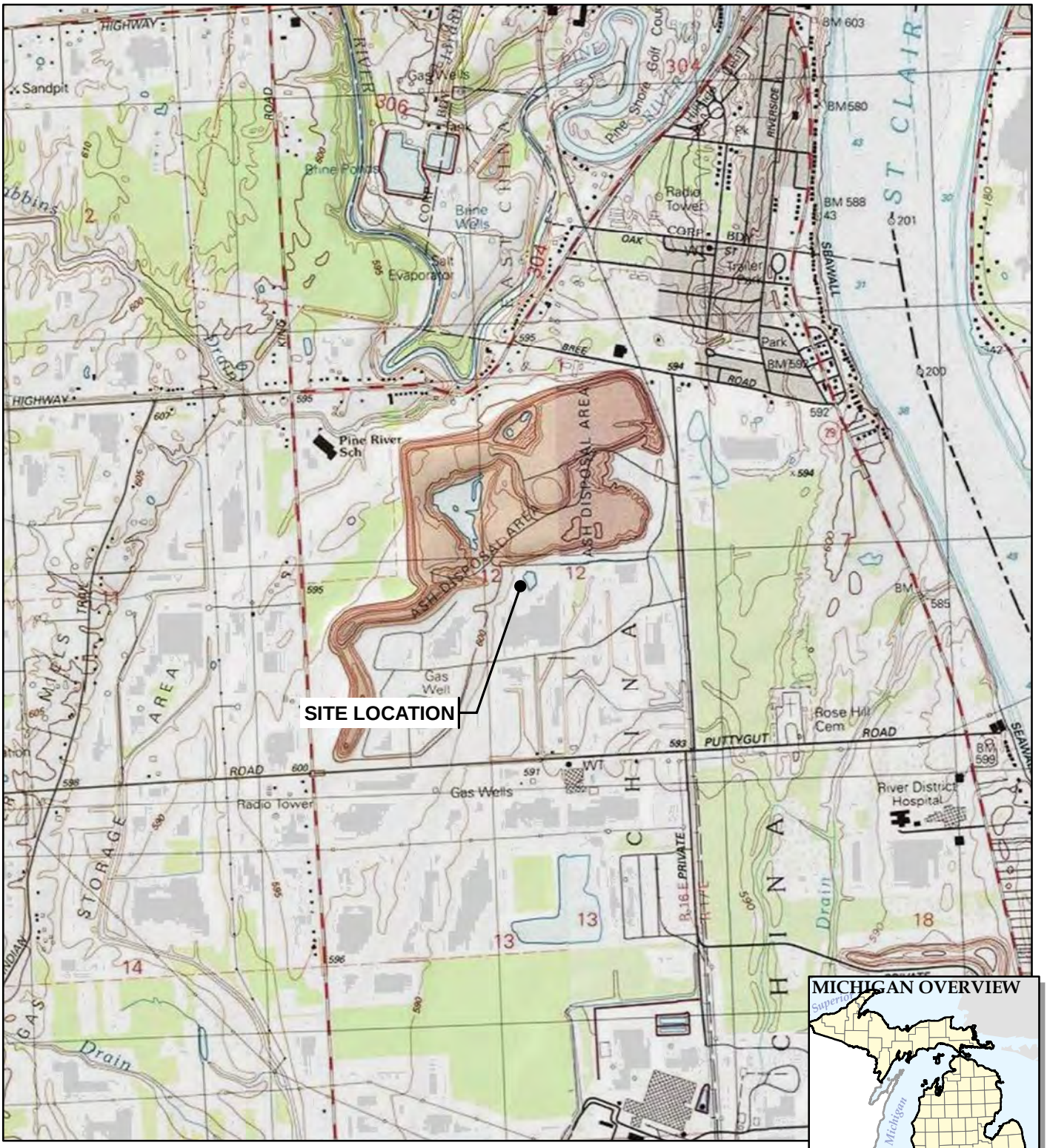
Notes:
ug/L - micrograms per liter.
mg/L - milligrams per liter.
SU - standard units; pH is a field parameter.
-- = not analyzed
All metals were analyzed as total unless otherwise specified.
Bold font indicates an exceedance of the Prediction Limit (PL).
RESULT Shading and bold font indicates a confirmed exceedance of the Prediction Limit (PL).
(1) - Results shown for verification sampling performed on 5/26/2022.
(2) - Exceedance was determined to be from an alternate source in the First 2019 Semiannual alternative source demonstration dated 8/8/2019.
(3) - Exceedance was determined to be from an alternate source in the First 2020 Semiannual alternative source demonstration dated 8/12/2020.
(4) - Exceedance was determined to be from an alternate source in the First 2018 Semiannual alternative source demonstration dated 8/1/2018.
(5) - Exceedance was determined to be from an alternate source in the Second 2021 Semiannual alternative source demonstration dated 2/24/2022.

Table 4
Comparison of Appendix III Parameter Results to Background Limits – October to December 2022
CCR-Range Road Landfill – RCRA CCR Monitoring Program
China Township, Michigan

Sample Location:		MW-16-01			MW-16-02		MW-16-03		MW-16-04			MW-16-05		MW-16-06		MW-16-07		
Sample Date:		10/17/2022	12/1/2022[1]	PL	10/17/2022	PL	10/17/2022	PL	10/27/2022	11/30/2022[2]	PL	10/17/2022	PL	10/17/2022	PL	10/27/2022	11/30/2022[2]	PL
Constituent	Unit	Data			Data		Data		Data			Data		Data		Data		
Appendix III																		
Boron	ug/L	580	--	620	1,100	1,200	1,200	1,300	1,100	--	1,200	1,300	1,400	1,100	1,200	910	--	980
Calcium	ug/L	**90,000**	**96,000**	87,000	24,000	24,000	21,000	28,000	**69,000**	**75,000**	68,000	19,000	19,000	**76,000[3]**	34,000	49,000	--	59,000
Chloride	mg/L	670	--	770	660	720	540	580	3,500	--	3,600	560	630	460	580	380	--	380
Fluoride	mg/L	0.77	--	0.9	1.9	2.1	2.1	2.2	1.6	--	1.7	1.8	2.0	1.2	1.5	**1.4**	1.2	1.3
pH, Field	su	7.4	--	7.1 - 8.2	8.3	8.0 - 9.0	8.0	8.0 - 8.8	8.0	--	7.6 - 8.6	8.2	8.0 - 8.9	7.7	7.6 - 8.3	7.6	--	7.3 - 8.4
Sulfate	mg/L	**67[4]**	**--**	45	< 1	10	< 1	10	< 5	--	50	2.4	10	**330[5]**	54	< 5	--	74
Total Dissolved Solids	mg/L	1,200	--	1,300	1,100	1,300	970	1,100	4,700	--	5,300	920	1,200	**1,200[6]**	1,100	670	--	760

Notes:
ug/L - micrograms per liter.
mg/L - milligrams per liter.
SU - standard units; pH is a field parameter.
All metals were analyzed as total unless otherwise specified.
Bold font indicates an exceedance of the Prediction Limit (PL).
RESULT Shading and bold font indicates a confirmed exceedance of the Prediction Limit (PL).
(1) - Results shown for verification sampling performed on 12/1/2022.
(2) - Results shown for verification sampling performed on 11/30/2022.
(3) - Exceedance was determined to be from an alternate source in the First 2019 Semiannual alternative source demonstration dated 8/8/2019.
(4) - Exceedance was determined to be from an alternate source in the First 2020 Semiannual alternative source demonstration dated 8/12/2020.
(5) - Exceedance was determined to be from an alternate source in the First 2018 Semiannual alternative source demonstration dated 8/1/2018.
(6) - Exceedance was determined to be from an alternate source in the Second 2021 Semiannual alternative source demonstration dated 2/24/2022.

Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

1 " = 2,000 '
1:24,000

0 2,000 4,000
FEET

TRC

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PROJECT:

DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:

SITE LOCATION MAP

DRAWN BY:	A. FOJTIK
CHECKED BY:	J. KRENZ
APPROVED BY:	V. BUENING
DATE:	JANUARY 2023
PROJ. NO.:	413591.0000
FILE:	413591-0000-001SLM.mxd

FIGURE 1

S:\1-PROJECTS\DTE_Energy\320511_RiverRouge\370029-0000-001SLM.mxd -- Saved By: SMAJOR on 1/27/2021, 10:23:11 AM

LEGEND

- MONITORING WELL
- SOIL BORING
- APPROXIMATE ANTICIPATED MAXIMUM LIMIT OF ASH FILL
- OIL/GAS WELL LOCATION

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO,2019.
2. WELL LOCATIONS SURVEYED IN MARCH AND MAY 2016 BY BMJ ENGINEERS & SURVEYORS, INC.
3. OIL AND GAS WELL LOCATIONS FROM MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, GEOWEBFACE.

N

0 600 1,200 Feet

1 " = 600 '

1:7,200

PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
MONITORING NETWORK AND SITE PLAN

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0000
CHECKED BY:	J. KRENZ		
APPROVED BY:	V. BUENING		**FIGURE 2**
DATE:	JANUARY 2023		

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FILE NO.: 413591-0000-002.mxd

Plot Date: 1/27/2021, 10:34:49 AM by SMAJOR -- LAYOUT: ANSI B (11"x17")
Path: E:\DTE\CCR_Sites\2017_265996\370029-0000-002.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS

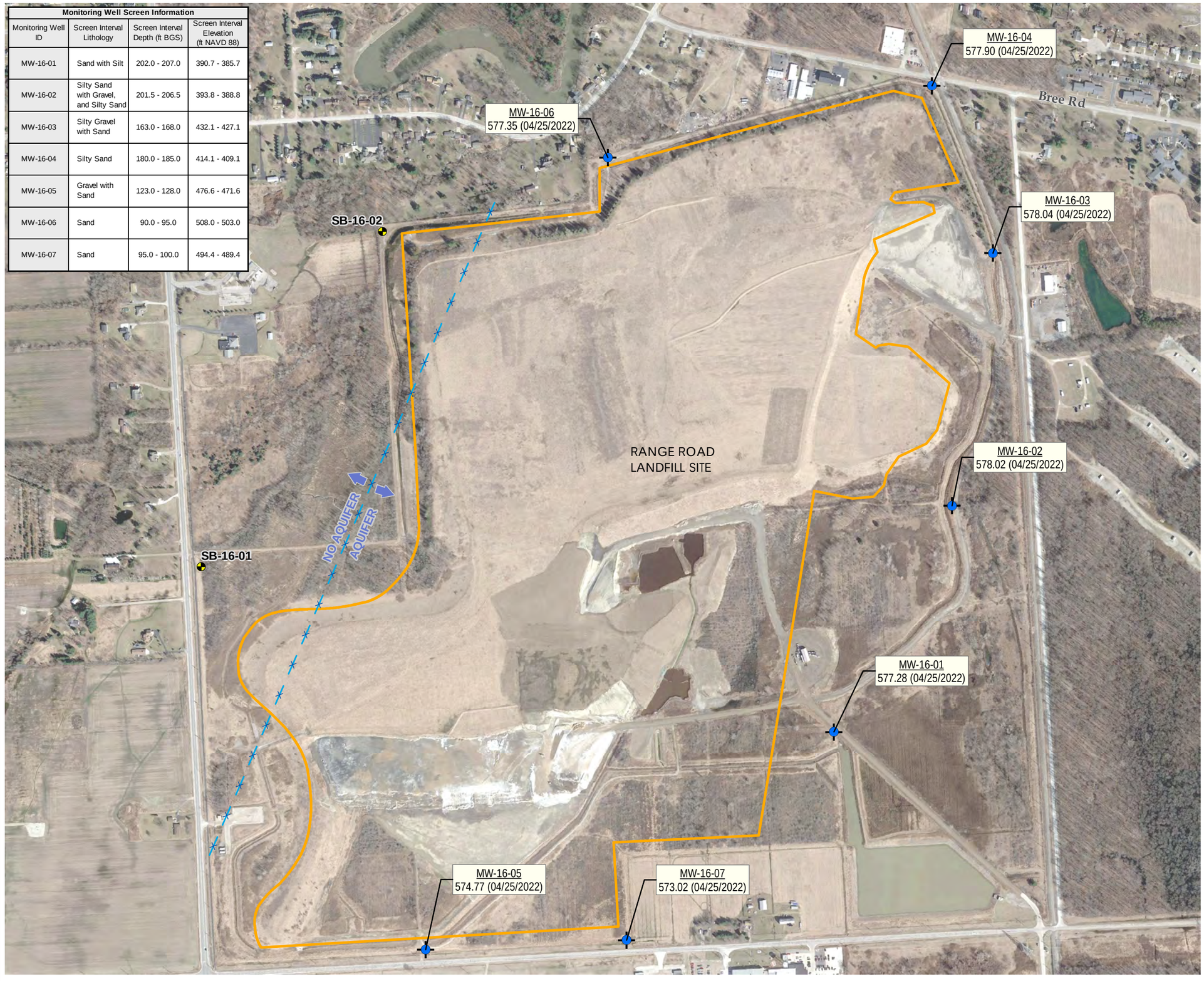
TRC - GIS

Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

Plot Date: 6/17/2022, 16:22:56 PM by AFOJTIK -- LAYOUT: ANSI B(11"x17")
Path: E:\Projects\DTE\CCR_Sites\2017_265996\461816-0000-004.mxd

Monitoring Well Screen Information

Monitoring Well ID	Screen Interval Lithology	Screen Interval Depth (ft BGS)	Screen Interval Elevation (ft NAVD 88)
MW-16-01	Sand with Silt	202.0 - 207.0	390.7 - 385.7
MW-16-02	Silty Sand with Gravel, and Silty Sand	201.5 - 206.5	393.8 - 388.8
MW-16-03	Silty Gravel with Sand	163.0 - 168.0	432.1 - 427.1
MW-16-04	Silty Sand	180.0 - 185.0	414.1 - 409.1
MW-16-05	Gravel with Sand	123.0 - 128.0	476.6 - 471.6
MW-16-06	Sand	90.0 - 95.0	508.0 - 503.0
MW-16-07	Sand	95.0 - 100.0	494.4 - 489.4



LEGEND

- MONITORING WELL
- SOIL BORING
- APPROXIMATE ANTICIPATED MAXIMUM LIMIT OF ASH FILL
- APPROXIMATE AQUIFER BOUNDARY

MW ID
GROUNDWATER ELEVATION (DATE)

FT BGS
FEET BELOW GROUND SURFACE
FT NAVD 88
FEET RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2019.
2. WELL LOCATIONS SURVEYED IN MARCH AND MAY 2016 BY BMJ ENGINEERS & SURVEYORS, INC .

0 600 1,200 Feet

1 " = 600 '
1:7,200

PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
GROUNDWATER POTENTIOMETRIC ELEVATION SUMMARY APRIL 2022

DRAWN BY:	A. FOJTIK	PROJ NO.:	461816.0000
CHECKED BY:	J. KRENZ		
APPROVED BY:	V. BUENING		**FIGURE 3**
DATE:	JANUARY 2023		

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FILE NO.: 461816-0000-004.mxd

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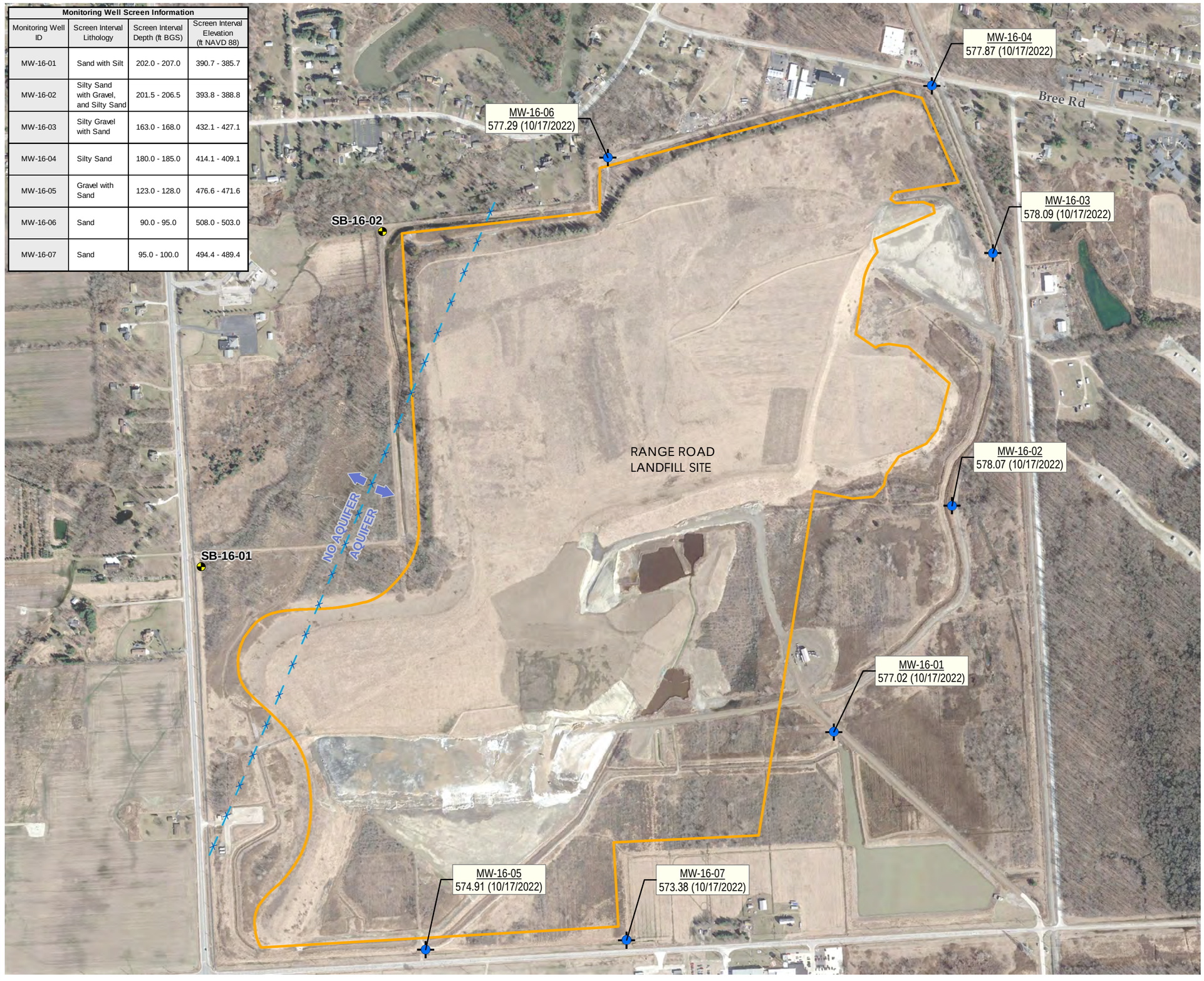
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

Plot Date: 6/17/2022, 16:22:56 PM by AFOJTIK -- LAYOUT: ANSI B(11"x17")
Path: E:\Projects\DTE\CCR_Sites\2017_265996\461816-0000-004.mxd

Monitoring Well Screen Information

Monitoring Well ID	Screen Interval Lithology	Screen Interval Depth (ft BGS)	Screen Interval Elevation (ft NAVD 88)
MW-16-01	Sand with Silt	202.0 - 207.0	390.7 - 385.7
MW-16-02	Silty Sand with Gravel, and Silty Sand	201.5 - 206.5	393.8 - 388.8
MW-16-03	Silty Gravel with Sand	163.0 - 168.0	432.1 - 427.1
MW-16-04	Silty Sand	180.0 - 185.0	414.1 - 409.1
MW-16-05	Gravel with Sand	123.0 - 128.0	476.6 - 471.6
MW-16-06	Sand	90.0 - 95.0	508.0 - 503.0
MW-16-07	Sand	95.0 - 100.0	494.4 - 489.4



LEGEND

- MONITORING WELL
- SOIL BORING
- APPROXIMATE ANTICIPATED MAXIMUM LIMIT OF ASH FILL
- APPROXIMATE AQUIFER BOUNDARY

MW ID
GROUNDWATER ELEVATION (DATE)

FT BGS
FEET BELOW GROUND SURFACE
FT NAVD 88
FEET RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2019.
2. WELL LOCATIONS SURVEYED IN MARCH AND MAY 2016 BY BMJ ENGINEERS & SURVEYORS, INC .

0 600 1,200 Feet

1 " = 600 '
1:7,200

PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
GROUNDWATER POTENTIOMETRIC ELEVATION SUMMARY OCTOBER 2022

DRAWN BY:	A. FOJTIK	PROJ NO.:	461816.0000
CHECKED BY:	J. KRENZ		
APPROVED BY:	V. BUENING		**FIGURE 4**
DATE:	JANUARY 2023		

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FILE NO.: 461816-0000-004.mxd

Appendix A
Alternate Source Demonstration, Fourth Quarter 2021 Groundwater Sampling Event

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Ann Arbor, MI 48108

T 734.971.7080
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February 24, 2022

Mary R. Carnagie
Solid Waste Geologist
Materials Management Division
Michigan Department of Environment, Great Lakes, and Energy (EGLE)
27700 Donald Court
Warren, MI 48092-2793

Subject: Alternate Source Demonstration: Fourth Quarter 2021 Semiannual Detection Monitoring Sampling Event
Range Road Landfill Coal Combustion Residual Unit
3600 Range Road, China Township, Michigan

Dear Ms. Carnagie:

TRC was retained by DTE Electric Company (DTE Electric) to conduct routine groundwater monitoring activities for the uppermost usable aquifer at the Range Road Landfill (RRLF) coal combustion residual (CCR) unit, located in St Clair County, Michigan. Routine groundwater monitoring at the RRLF CCR unit is conducted in accordance with the Michigan Department of Environment, Great Lakes, and Energy (EGLE) approved *Hydrogeologic Monitoring Plan for the DTE Electric Company Range Road Ash Disposal Facility, China Township, St. Clair County, Michigan* (2020 HMP) (TRC, November 2019; Revised May 2020) and the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) (the CCR Rule), as amended (USEPA, April 2015).

As discussed in the *Fourth Quarter 2021 Hydrogeological Monitoring and Performance Monitoring Report* (Fourth Quarter 2021 Report) (TRC, January 2022), the statistical evaluation of the October 2021 detection monitoring indicator parameters showed potential statistically significant increases (SSIs) over the prediction limit (PL) for total dissolved solids (TDS) at MW-16-06 (1,200 mg/L with a PL of 1,100 mg/L). Verification resampling for the October 2021 event was conducted on December 6, 2021 by TRC personnel. The December 2021 verification result for TDS at MW-16-06 (1,300 mg/L) remained above the prediction limit (1,100 mg/L), confirming the initial potential SSI from the October 2021 sampling (Table 1).

In accordance with §257.94(e)(2) and the 2020 HMP, DTE Electric may demonstrate that a source other than the CCR unit caused the SSI or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. This Alternate Source Demonstration (ASD) has been prepared to address the SSI identified in the October 2021 detection monitoring event and demonstrates that the TDS SSI is not due to a release of CCR leachate into the uppermost aquifer groundwater.

Background

The RRLF is located in Section 12, Township 4 North, Range 16 East, 3600 Range Road, China Township in St. Clair County, Michigan. The site location is shown in Figure 1. The property has been used continuously as a coal ash landfill since Detroit Edison Company (now DTE Electric) began coal

ash landfilling operations in the 1950s. The property consists of approximately 514 acres of which approximately 402 acres are designated for CCR landfill development, half of which is currently occupied with CCR.

The RRLF CCR unit is immediately underlain by 86 to 188 feet of laterally extensive, low hydraulic conductivity silty clay-rich deposits. A no flow boundary is formed across the western portion of the RRLF by clay-rich till which is present continuously to the top of bedrock in this area. Beneath the clay rich aquitard, a sand/gravel unit is encountered, which contains the uppermost aquifer present beneath the RRLF. This uppermost usable aquifer is encountered at different elevations beneath the RRLF between 86 and 196 feet below ground surface (ft bgs). As a result of site specific geologic and hydrogeologic conditions, downward migration of CCR leachate is not expected, and it is not appropriate to infer horizontal flow directions across the site. Please refer to the *Uppermost Usable Aquifer Groundwater Monitoring System Summary Report – DTE Electric Company Range Road Coal Combustion Residual Landfill, 3600 Range Road, China Township, Michigan* (October 2017, Revised April 2020a) (Uppermost Usable Aquifer Groundwater Monitoring System Summary Report) (Appendix A of the 2020 HMP) for further details regarding site-specific hydrogeology.

The uppermost usable aquifer monitoring well network for the RRLF currently consists of seven monitoring wells that are screened in the uppermost usable aquifer and are all considered to be downgradient monitoring wells. The monitoring well locations are shown in Figure 2. The Uppermost Usable Aquifer Groundwater Monitoring System Summary Report (October 2017, Revised April 2020a) (Appendix A of the 2020 HMP) details the groundwater monitoring system.

Alternate Source Demonstration

As discussed above, verification resampling was performed as recommended per the Stats Plan and the Unified Guidance to achieve performance standards as specified by §257.93(g) in the CCR Rule and the 2020 HMP. Per the Stats Plan, if there is an exceedance of a prediction limit for one or more of the parameters, the well(s) of concern will be resampled within 30 days of the completion of the initial statistical analysis. Only constituents that initially exceeded their statistical limit (i.e., have no previously recorded SSIs) were analyzed for verification purposes. As such, verification resampling was conducted on December 6, 2021 by TRC personnel for TDS at monitoring well MW-16-06. Groundwater samples were collected in accordance with the *CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company Range Road Coal Combustion Residual Landfill, 3600 Range Road, China Township, Michigan* (July 2016, Revised March and August 2017) and the 2020 HMP. A summary of the groundwater data collected during the verification resampling event is provided on Table 1.

The verification resampling confirmed the slight TDS exceedance at MW-16-06 (1,300 mg/L with a PL of 1,100 mg/L). The following discussion presents the ASD for the confirmed prediction limit exceedance for TDS at MW-16-06.

TDS at MW-16-06: The SSI of TDS at MW-16-06, shown graphically as data points greater than the prediction limit in Figure 3, is the result of natural variability in groundwater quality at the site and not the result of a release from the RRLF CCR unit. Multiple lines of evidence are provided in support of this conclusion and are as follows:

- **Time of travel analysis** – The clay formation immediately beneath the RRLF CCR unit provides a natural geologic barrier to migration of CCR constituents to the underlying aquifer. The vertical extent of the clay layer beneath the CCR unit is shown in Figures 5 through 7 as cross-sections. Figure 4 shows the cross-section locations in plan view. Conservatively calculating a time of travel for liquid from the base of the RRLF through a minimum of 86 feet of clay to the underlying upper aquifer yields over 1,300 years of travel time (TRC, October 2017; Revised April 2020a). The RRLF began accepting coal ash in approximately 1950, therefore, based on this analysis, there is no potential for indicator parameters to have migrated to the uppermost usable aquifer.
- **Laboratory precision and accuracy in TDS analysis** – The laboratory-reported TDS concentrations for the MW-16-06 groundwater samples collected during the second semiannual 2021 sampling event (October 2021 original sample and the December 2021 confirmation sample) are slightly higher than the PL. However, the precision and accuracy range for TDS is +/- 20%. The October (1,200 mg/L) and December (1,300 mg/L) 2021 groundwater samples had TDS detected at concentrations that were only slightly above the MW-16-06 PL of 1,100 mg/L. As such, the PL for each of these samples is within the margin of error of the laboratory results.
- **Insufficient background sampling timeline to account for long-term trends** – Temporal variability in TDS concentrations observed in the groundwater at RRLF during the background sampling events provides evidence of the heterogeneity of this constituent in groundwater (Figure 3). The relatively short duration of the background sampling events limits the ability of the statistical analysis to capture the natural long-term temporal trends in the uppermost aquifer groundwater quality at the RRLF. TDS concentrations within the uppermost aquifer groundwater during the second semiannual 2021 sampling event ranged from 670 mg/L (MW-16-07) to 5,100 mg/L (MW-16-04), indicating a wide range of TDS concentrations across the CCR unit. The concentration of TDS at MW-16-06 is well within the range of TDS values observed in the uppermost aquifer across the CCR unit, further demonstrating that the concentrations at MW-16-06 are reasonable for naturally occurring concentrations in the uppermost aquifer.
- **Natural Concentrations of TDS in Residential Drinking Water Supply Wells in China and East China Townships** –TDS concentrations were estimated using data collected by the public health department (three wells) and DTE Electric Company (one well) from four residential wells in China and East China Townships, Michigan, within approximately 0.4 to 1 mile from the CCR Unit, to represent regional background in the area. TDS is made up of inorganic salts that include calcium, chlorides, iron, magnesium, potassium, sodium, and sulfate. Since TDS data were not available in the collected residential well data, the sum of the available sodium, chloride and sulfate data collected in 2007 were used to estimate the TDS concentrations in the uppermost aquifer ranging from at least 800 to more than 1,400 mg/L (generally higher than 1,200 mg/L). Since the available data does not include all of the potential contributing substances that can make up TDS, the estimate represents the low-end range of TDS concentrations in the uppermost aquifer. Given that the MW-16-06 TDS concentration is consistent with the estimated TDS range in the residential wells, the CCR unit well network is screened in similar substrate (over 100 feet below ground surface), and the CCR unit is located near the boundary of China and East China Townships, this residential data further supports that the TDS concentration within MW-16-06 is from a natural source. The 2007 China and East China Township drinking water well data and a map of the approximate residential well locations are included in Appendix B.
- **Lack of similar increase in other indicator parameters** – The lack of SSIs for any other parameters within the same monitoring well and across the other wells within the monitoring well network during this event also supports a source other than CCR for the observed TDS SSI at MW-16-06.

Conclusions and Recommendations

The information provided in this report serves as the ASD for the DTE Electric RRLF, was prepared in accordance with 40 CFR 257.94(e)(2) of the CCR Rule and the 2020 HMP and demonstrates that the TDS SSI determined based on the October 2021 detection monitoring event is due to the natural variability of background groundwater quality within the uppermost aquifer groundwater. Therefore, based on the information provided in this ASD, DTE Electric will continue detection monitoring as per 40 CFR 257.94 at the RRLF CCR unit.

Signatures and Certifications

Engineer Certification Statement

I hereby certify that the alternative source demonstration presented within this document for the RRLF CCR unit has been prepared to meet the requirements of Title 40 CFR §257.94(e)(2) of the Federal CCR Rule and the May 2020 *Hydrogeological Monitoring Plan for the DTE Electric Company Range Road Ash Disposal Facility* (2020 HMP). This document is accurate and has been prepared in accordance with good engineering practices, including the consideration of applicable industry standards, and with the requirements of Title 40 CFR §257.94(e)(2) and the 2020 HMP.

Name: David B. McKenzie, P.E.	Expiration Date: December 17, 2023	STATE OF MICHIGAN DAVID B MCKENZIE ENGINEER No. 6201042332 LICENSED PROFESSIONAL ENGINEER Stamp
Company: TRC Engineers Michigan, Inc.	Date: February 24 2022	

In addition, the signature below certifies that this letter report was prepared under the direction of a qualified groundwater scientist in accordance with the EGLE-approved HMP and the Stats Plan. A copy of this report will be placed in the facility file.

Sincerely,

TRC

Vincent E. Buening, C.P.G
Sr. Project Manager

Sarah B. Holmstrom, P.G
Senior Hydrogeologist

Attachments

Table 1	Comparison of Appendix III and Part 115 Groundwater Parameter Results to Background Limits – Fourth Quarter 2021
Figure 1	Site Location Map
Figure 2	Uppermost Usable Aquifer Monitoring Well Network and Site Plan
Figure 3	Total Dissolved Solids at MW-16-06
Figure 4	Cross Section Locator Map
Figure 5	Generalized Geologic Cross Section A-A'
Figure 6	Generalized Geologic Cross Section B-B'
Figure 7	Generalized Geologic Cross Section C-C'
Appendix A	References
Appendix B	2007 Residential Well Data and Location Map

cc: Christopher P. Scieszka, DTE Electric Company

Table

Table 1
Comparison of Appendix III Parameter Results to Background Limits – Fourth Quarter 2021
Range Road Landfill – RCRA CCR Monitoring Program
China Township, Michigan

Sample Location:		MW-16-01		MW-16-02		MW-16-03		MW-16-04		MW-16-05		MW-16-06			MW-16-07	
Sample Date:		10/18/2021	PL	10/18/2021	PL	10/18/2021	PL	10/18/2021	PL	10/18/2021	PL	10/18/2021	12/6/2021	PL	10/18/2021	PL
Constituent	Unit	Data		Data		Data		Data		Data		Data			Data	
Appendix III																
Boron	ug/L	510	620	920	1,200	1,100	1,300	880	1,200	1,200	1,400	900	--	1,200	880	980
Calcium	ug/L	77,000	87,000	21,000	24,000	19,000	28,000	63,000	68,000	17,000	19,000	**46,000**[(1)]	--	34,000	45,000	59,000
Chloride	mg/L	550	770	660	720	520	580	3,200	3,600	560	630	490	--	580	350	380
Fluoride	mg/L	0.85	0.90	2.0	2.1	2.2	2.2	1.5	1.69	2.0	2.0	1.4	--	1.5	1.3	1.3
pH, Field	SU	7.6	7.1 - 8.2	8.2	8.2 - 9.0	8.0	8.0 - 8.8	7.8	7.6 - 8.6	8.2	8.0 - 8.9	7.6	7.8	7.6 - 8.3	7.7	7.3 - 8.4
Sulfate	mg/L	41	44.767	1.7	10	< 5.0	10	< 5.0	50	3.0	10	**150**[(2)]	--	54	3.8	74
Total Dissolved Solids	mg/L	1,200	1,300	1,100	1,300	1,000	1,100	5,100	5,300	1,100	1,200	**1,200**	**1,300**	1,100	670	760
Part 115 Parameters																
Iron	ug/L	1,400	n<8	840	n<8	550	n<8	850	n<8	210	n<8	770	--	n<8	2,300	n<8

Notes:

ug/L - micrograms per liter.

mg/L - milligrams per liter.

SU - standard units; pH is a field parameter.

-- = not analyzed

All metals were analyzed as total unless otherwise specified.

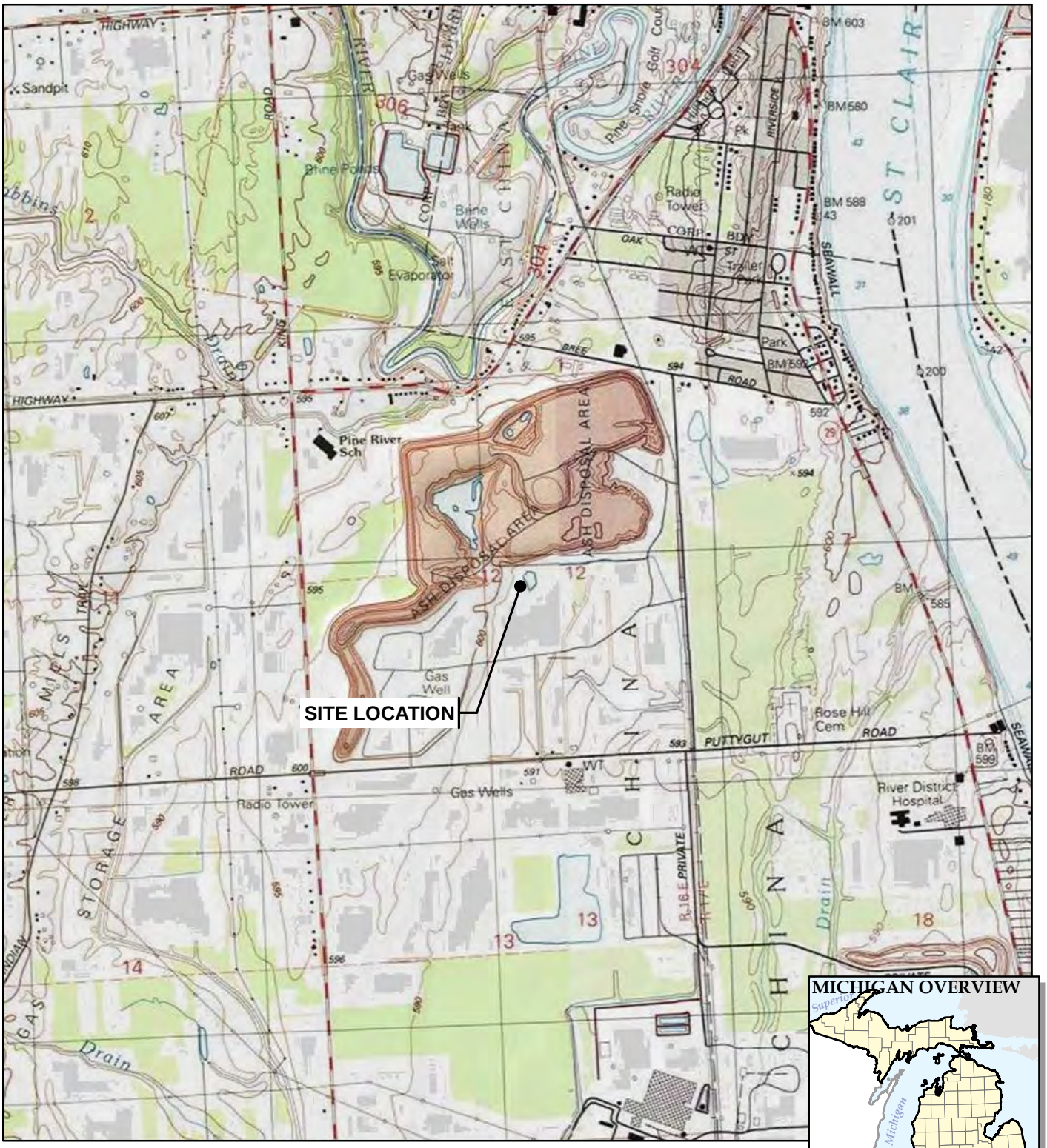
Bold font indicates an exceedance of the Prediction Limit (PL).

RESULT Shading and bold font indicates a comfirmed exceedance of the Prediction Limit (PL).

(1) - Concentration addressed through First 2019 Semiannual alternative source demonstration.

(2) - Concentration addressed through First 2018 semiannual alternative source demostration.

Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

1 " = 2,000 '
1:24,000

0 2,000 4,000
FEET

TRC

1540 Eisenhower Place
Ann Arbor, MI 48108-3284
Phone: 734.971.7080
www.trccompanies.com

TRC - GIS

PROJECT:

DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

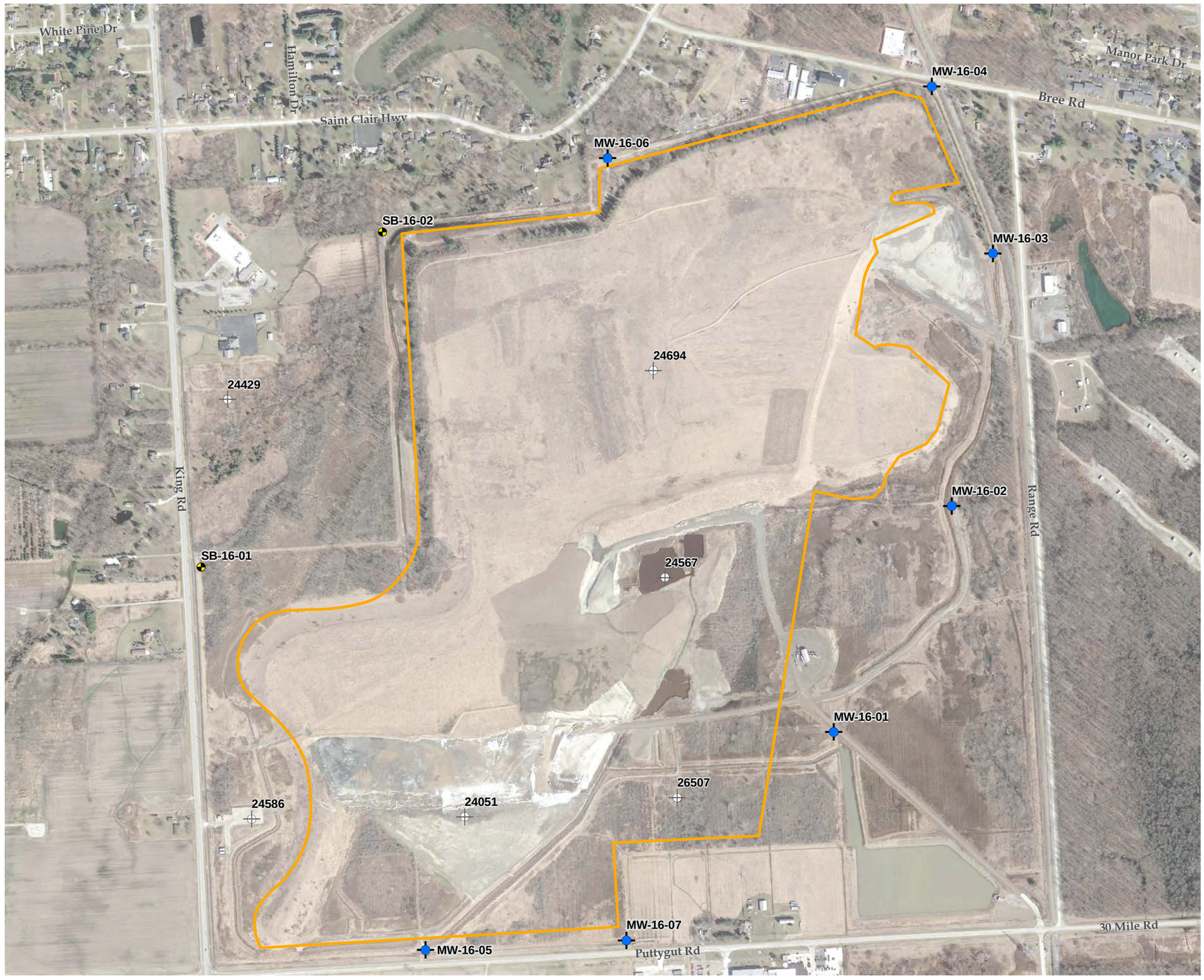
TITLE:

SITE LOCATION MAP

DRAWN BY:	S. MAJOR
CHECKED BY:	J. KRENZ
APPROVED BY:	V. BUENING
DATE:	JANUARY 2022
PROJ. NO.:	413591.0000
FILE:	413591-0000-001SLM.mxd

FIGURE 1

S:\1-PROJECTS\DTE_Energy\320511_RiverRouge\370029-0000-001SLM.mxd -- Saved By: SMAJOR on 1/27/2021, 10:23:11 AM



LEGEND

- MONITORING WELL
- SOIL BORING
- APPROXIMATE ANTICIPATED MAXIMUM LIMIT OF ASH FILL
- OIL/GAS WELL LOCATION

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO,2019.
2. WELL LOCATIONS SURVEYED IN MARCH AND MAY 2016 BY BMJ ENGINEERS & SURVEYORS, INC.
3. OIL AND GAS WELL LOCATIONS FROM MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, GEOWEBFACE.

0 600 1,200 Feet

1 " = 600 '

1:7,200

PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
MONITORING NETWORK AND SITE PLAN

DRAWN BY:	S. MAJOR	PROJ NO.:	413591.0000
CHECKED BY:	J. KRENZ		
APPROVED BY:	V. BUENING		**FIGURE 2**
DATE:	JANUARY 2022		

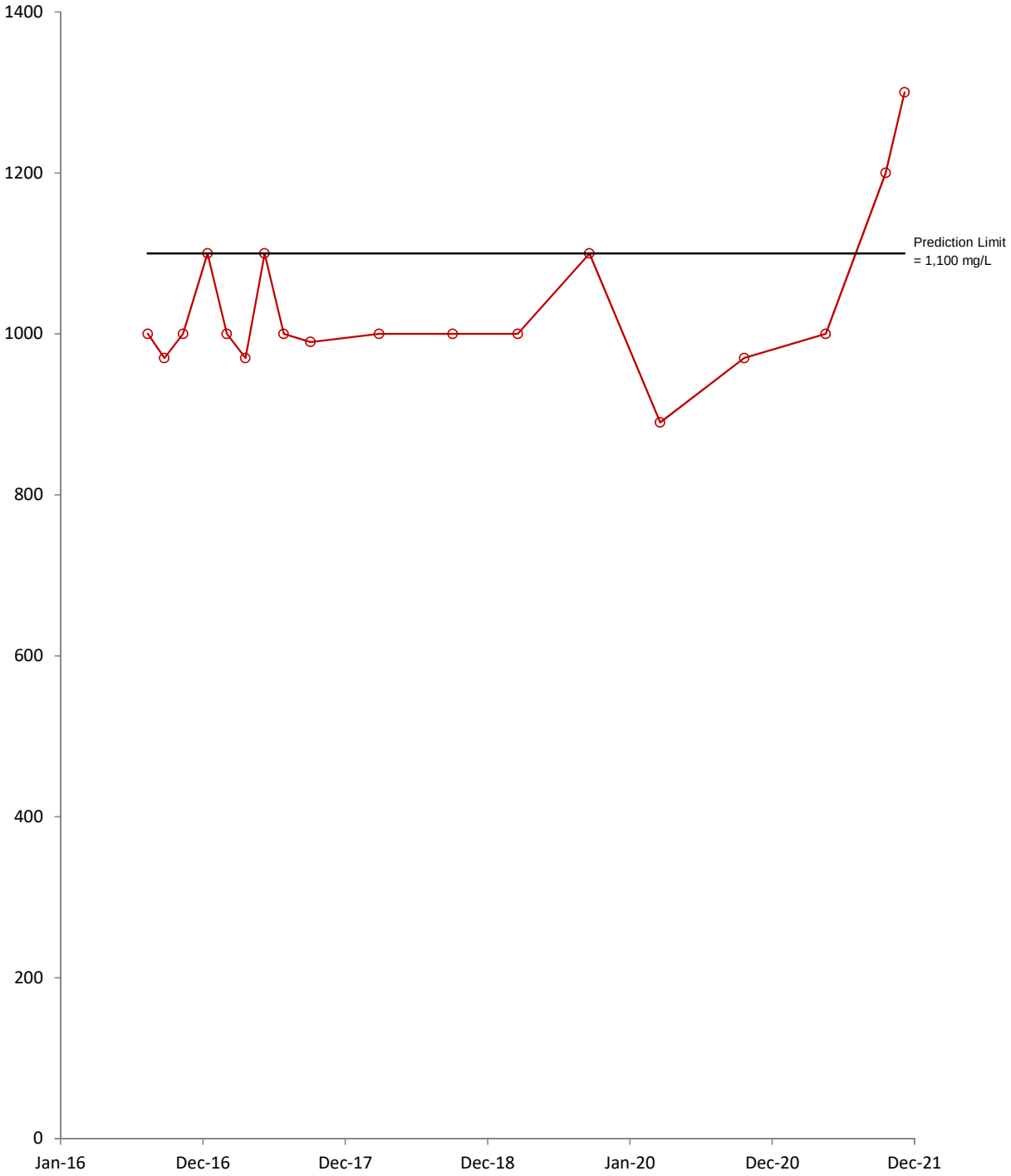
TRC
1540 Eisenhower Place
Ann Arbor, MI 48108-3284
Phone: 734.971.7080
www.trccompanies.com

FILE NO.: 413591-0000-002.mxd

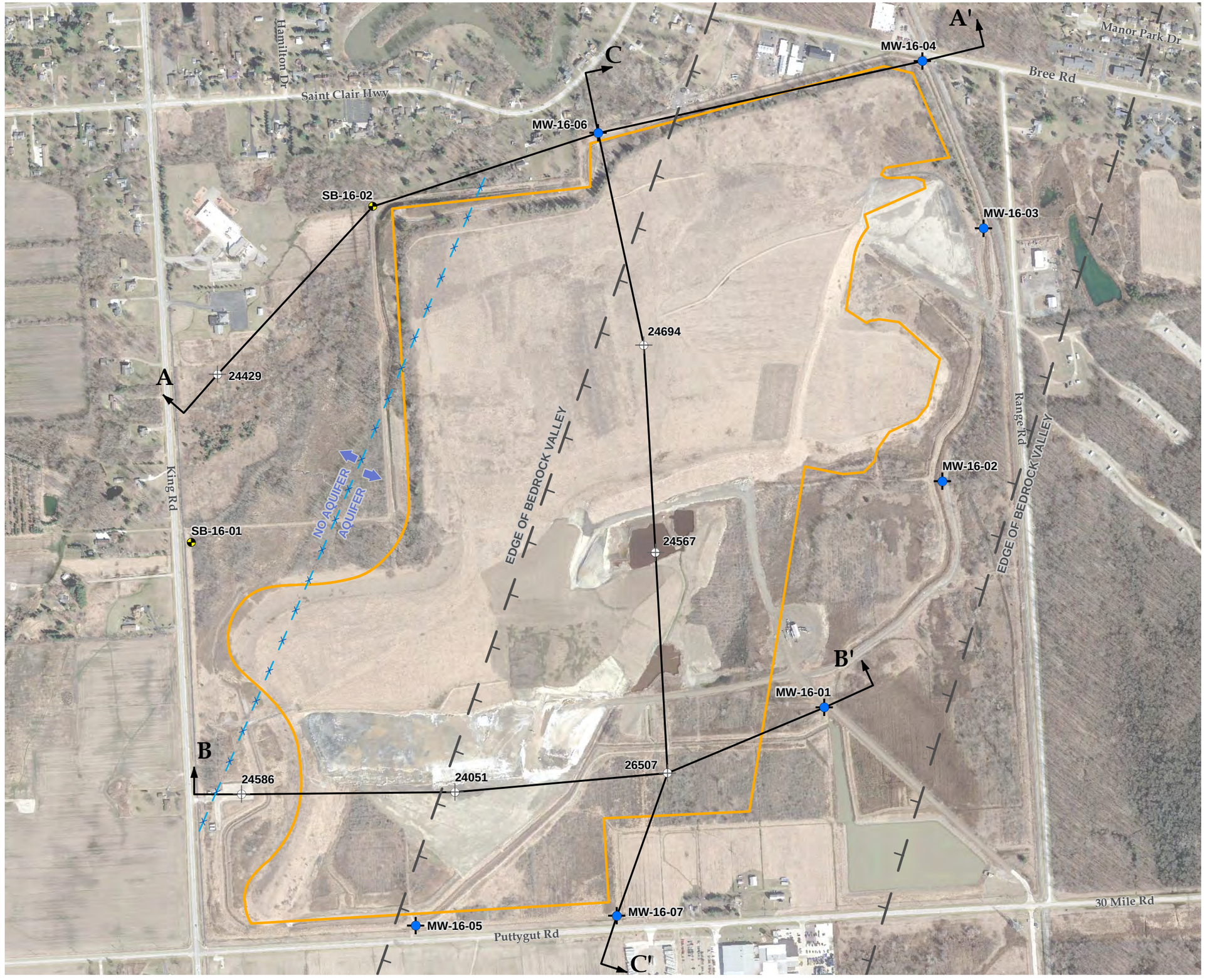
Plot Date: 1/27/2021, 10:34:49 AM by SMAJOR -- LAYOUT: ANSI B (11"x17")
Path: E:\DTE\CCR_Sites\2017_265996\370029-0000-002.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS

Figure 3
Total Dissolved Solids (mg/L), MW-16-06



Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0
Plot Date: 11/13/2019, 10:27:03 AM by SMAJOR -- LAYOUT: ANSI B(11"x17")
Path: E:\DTE\CCR_Sites\2017_265996\320511-0000-008.mxd



LEGEND

- MONITORING WELL
- SOIL BORING
- APPROXIMATE ANTICIPATED MAXIMUM LIMIT OF ASH FILL
- OIL/GAS WELL LOCATION
- CROSS SECTION LINES
- APPROXIMATE AQUIFER BOUNDARY
- APPROXIMATE EDGE OF BEDROCK VALLEY

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2019.
2. WELL LOCATIONS SURVEYED IN MARCH AND MAY 2016 BY BMJ ENGINEERS & SURVEYORS, INC.
3. OIL AND GAS WELL LOCATIONS FROM MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, GEOWEBFACE.

N

0 600 1,200 Feet

1 " = 600 '
1:7,200

PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
3600 RANGE ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
CROSS SECTION LOCATOR MAP

DRAWN BY:	S. MAJOR	PROJ NO.:	265996.0000
CHECKED BY:	S HOLMSTROM		
APPROVED BY:	V BUENING		**FIGURE 4**
DATE:	NOVEMBER 2019		

TRC
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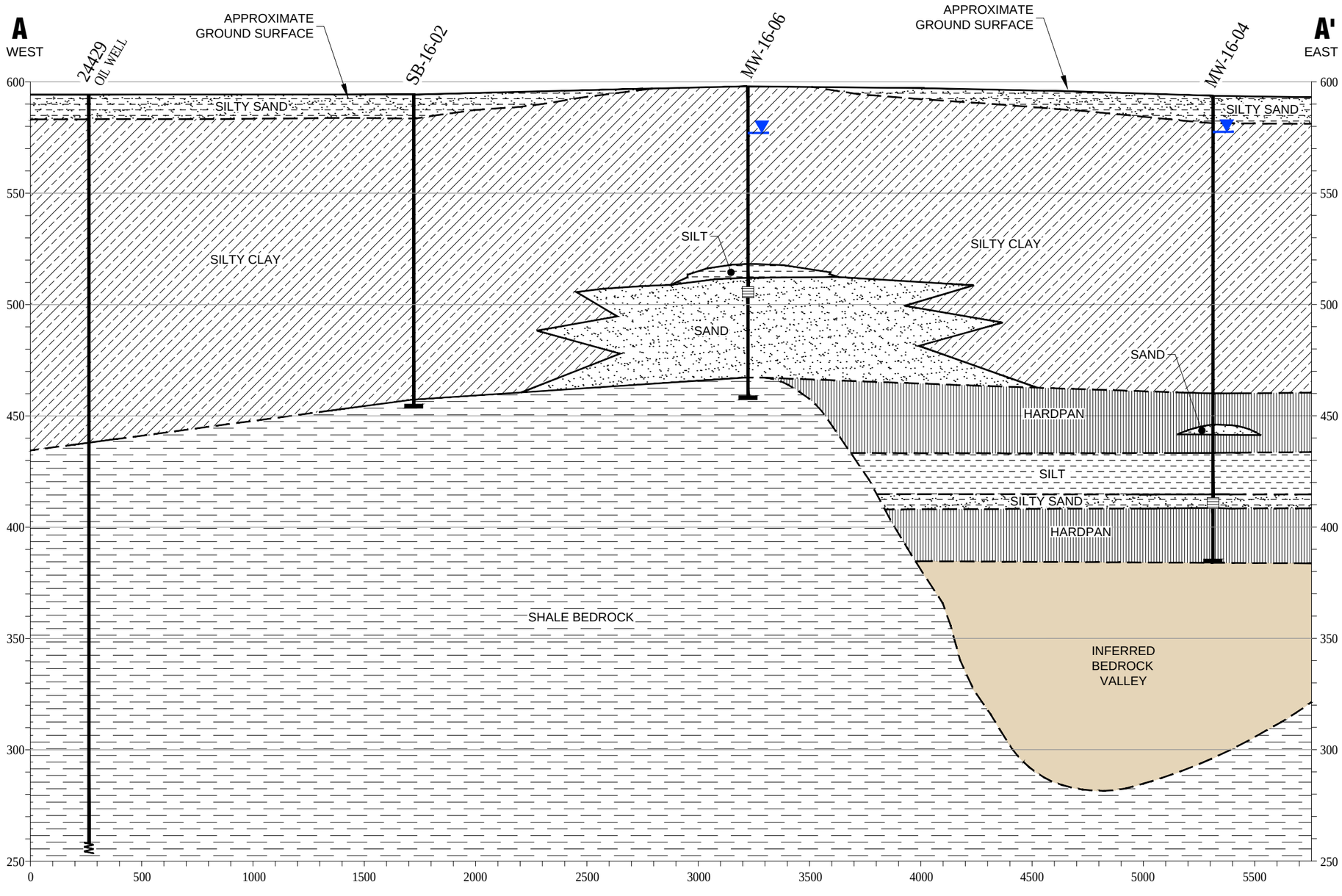
Ann Arbor, MI 48108-3284
Phone: 734.971.7080
www.trcsolutions.com

FILE NO.: 320511-0000-008.mxd

GENERALIZED GEOLOGIC CROSS-SECTION A-A'



LEGEND

- STRATEGRAPHIC BOUNDARY (DASHED WHERE INFERRED)
- GROUNDWATER ELEVATION
- SOIL BORING
- WELL SCREEN INTERVAL
- END OF BORING

Lithology Key

- SILT
- HARDPAN
- SILTY SAND
- SILTY CLAY
- SAND
- SHALE BEDROCK
- UNCONSOLIDATED BEDROCK VALLEY FILL

SCALE IN FEET
VERTICAL 50 0
HORIZONTAL 0 500

PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
CHINA TOWNSHIP, MICHIGAN

TITLE:
GENERALIZED GEOLOGIC CROSS-SECTION A-A'

DRAWN BY:	D.STEHLE	PROJ NO.:	265996.0000
CHECKED BY:	S.HOLMSTROM		
APPROVED BY:	V.BUENING		**FIGURE 5**
DATE:	SEPTEMBER 2017		

TRC
1540 Eisenhower Place
Ann Arbor, MI 48108
Phone: 734.971.7080
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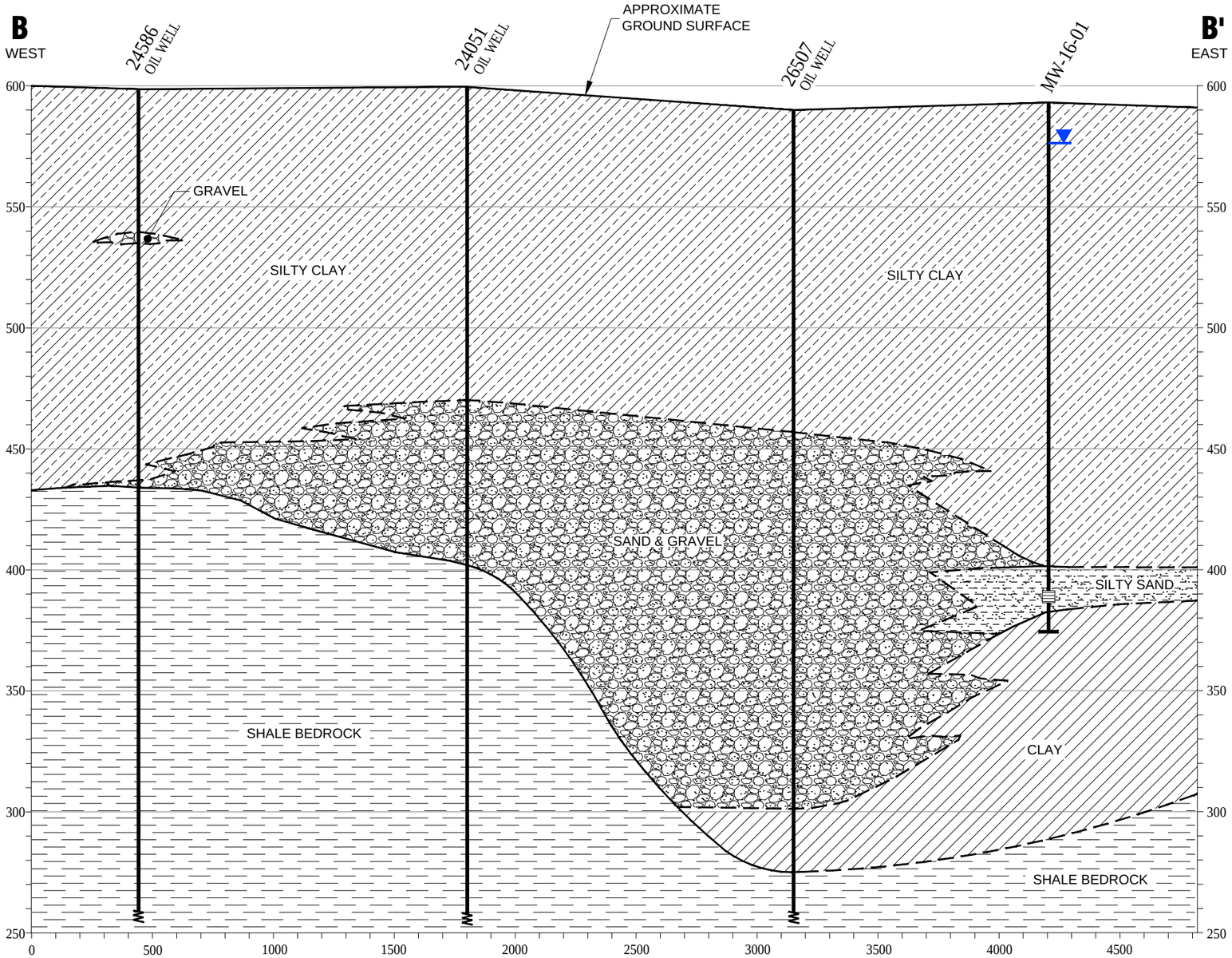
FILE NO.: 265996.0000.04-06.dwg

11x17 --- ATTACHED XREFS: --- ATTACHED IMAGES:
DRAWING NAME: J:_TRC\DTE\East China\Range Road LF\265996\0000\ 265996.0000.04-06.dwg --- PLOT DATE: November 08, 2019 - 5:55AM --- LAYOUT: FIG04 XS AA

GENERALIZED GEOLOGIC CROSS-SECTION B-B'



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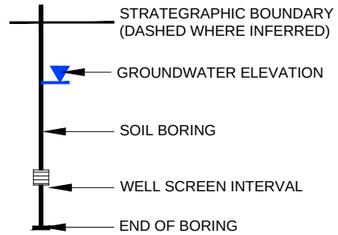
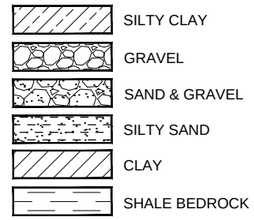
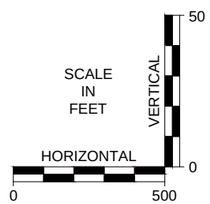


Lithology Key





PROJECT:
DTE ELECTRIC COMPANY
RANGE ROAD LANDFILL
CHINA TOWNSHIP, MICHIGAN

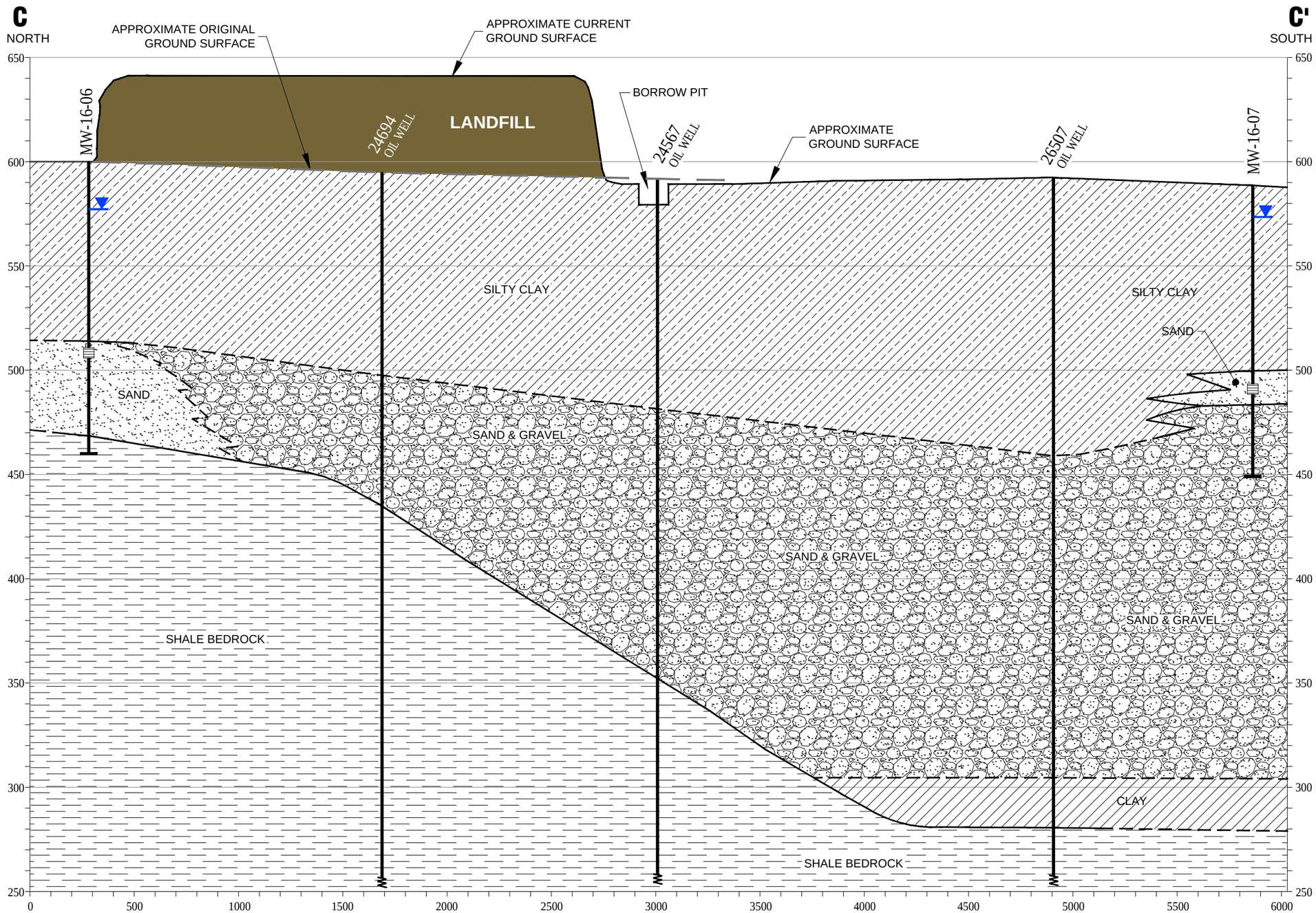
TITLE:
GENERALIZED
GEOLOGIC CROSS-SECTION B-B'

DRAWN BY:	D.STEHLE	PROJ NO.:	265996.0000
CHECKED BY:	S.HOLMSTROM		
APPROVED BY:	V.BUENING		**FIGURE 6**
DATE:	SEPTEMBER 2017		

TRC
1540 Eisenhower Place
Ann Arbor, MI 48108
Phone: 734.971.7080
www.trcsolutions.com

FILE NO.: 265996.0000.04-06.dwg

GENERALIZED GEOLOGIC CROSS-SECTION C-C'



LEGEND

- STRATEGRAPHIC BOUNDARY (DASHED WHERE INFERRED)
- GROUNDWATER ELEVATION
- SOIL BORING
- WELL SCREEN INTERVAL
- END OF BORING

Lithology Key

- SILTY CLAY
- SAND
- SAND & GRAVEL
- SILTY SAND
- CLAY
- SHALE BEDROCK

SCALE IN FEET
VERTICAL: 50 / 0
HORIZONTAL: 0 / 500

PROJECT:	DTE ELECTRIC COMPANY RANGE ROAD LANDFILL CHINA TOWNSHIP, MICHIGAN
TITLE:	GENERALIZED GEOLOGIC CROSS-SECTION C-C'
DRAWN BY:	D.STEHLE
CHECKED BY:	S.HOLMSTROM
APPROVED BY:	V.BUENING
DATE:	SEPTEMBER 2017
PROJ NO.:	265996.0000
	FIGURE 7

1540 Eisenhower Place
Ann Arbor, MI 48108
Phone: 734.971.7080
www.trcsolutions.com

FILE NO.: 265996.0000.04-06.dwg

Appendix A
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USEPA. July 2018. 40 CFR Part 257. Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Amendments to the National Minimum Criteria (Phase One, Part One); Final Rule. 83 Federal Register 146 (July 30, 2018), pp. 36435-36456 (83 FR 36435).

USEPA. April 2018. Barnes Johnson (Office of Resource Conservation and Recovery) to James Roewer (c/o Edison Electric Institute) and Douglas Green, Margaret Fawal (Venable LLP). Re: Coal Combustion Residuals Rule Groundwater Monitoring Requirements. April 30, 2018. United States Environmental Protection Agency, Washington, D.C. 20460. Office of Solid Waste and Emergency Response, now the Office of Land and Emergency Management.

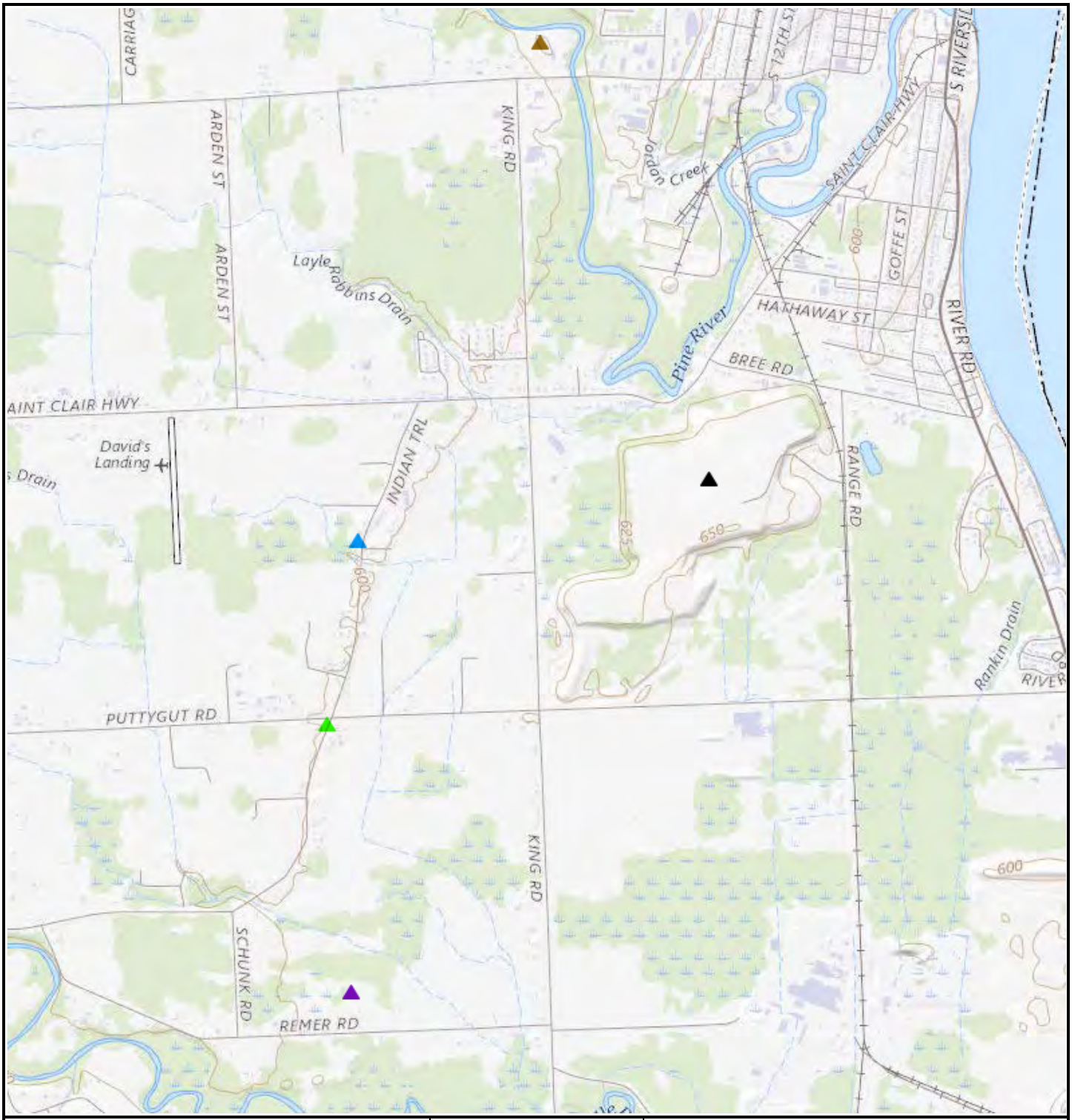
Appendix B
2007 Residential Well Data and Location Map

Table 1
Analytical Data Summary for Drinking Water Wells
China and East China Townships, Michigan

Sample Number	System Name	Collection Address	City/Township	Sample Point	Distance From Range Rd. Landfill	Water System	Well Depth	Source Type	Collection Date	Boron	Chloride	Iron	Lithium	Manganese	Sodium	Sulfate
							ft			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
LB74888	RESIDENT	3725 Indian Trail	China	Outside Tap	< 0.4 mile west	Untreated Private Well	130	Single Family Dwelling	08/28/2007	--	--	--	0.036	--	--	--
LB74437	RESIDENT	3725 Indian Trail	China	Outside Tap	< 0.4 mile west	Untreated Private Well	130	Single Family Dwelling	08/28/2007	--	962	0.2	--	--	538	ND
LB74442	RESIDENT	3725 Indian Trail	China	Outside Tap	< 0.4 mile west	Untreated Private Well	130	Single Family Dwelling	08/28/2007	0.895	--	--	--	--	--	--
LB78915	RESIDENT	3725 Indian Trail	China	Outside Tap	< 0.4 mile west	Untreated Private Well	130	Single Family Dwelling	09/18/2007	--	1,085	0.2	--	--	544	ND
LB78972	RESIDENT	3725 Indian Trail	China	Outside Tap	< 0.4 mile west	Untreated Private Well	130	Single Family Dwelling	09/18/2007	--	--	--	0.035	--	--	--
LB78969	RESIDENT	3725 Indian Trail	China	Outside Tap	< 0.4 mile west	Untreated Private Well	130	Single Family Dwelling	09/18/2007	0.944	--	--	--	--	--	--
LB74890	RESIDENT	4017 Indian Trail	China	Outside Tap	<0.5 mile southwest	Untreated Private Well	123	Single Family Dwelling	08/28/2007	--	--	--	0.024	--	--	--
LB74436	RESIDENT	4017 Indian Trail	China	Outside Tap	<0.5 mile southwest	Untreated Private Well	123	Single Family Dwelling	08/28/2007	--	844	0.6	--	--	443	ND
LB74443	RESIDENT	4017 Indian Trail	China	Outside Tap	<0.5 mile southwest	Untreated Private Well	123	Single Family Dwelling	08/28/2007	0.602	--	--	--	--	--	--
LB78914	RESIDENT	4017 Indian Trail	China	Outside Tap	<0.5 mile southwest	Untreated Private Well	123	Single Family Dwelling	09/18/2007	--	935	0.6	--	--	420	ND
LB78973	RESIDENT	4017 Indian Trail	China	Outside Tap	<0.5 mile southwest	Untreated Private Well	123	Single Family Dwelling	09/18/2007	--	--	--	0.018	--	--	--
LB78970	RESIDENT	4017 Indian Trail	China	Outside Tap	<0.5 mile southwest	Untreated Private Well	123	Single Family Dwelling	09/18/2007	0.654	--	--	--	--	--	--
07E016-0002	RESIDENT	5300 Remer Road	China	Outside Tap	<0.7 mile SSW	Untreated Private Well	NA	Single Family Dwelling	01/04/2007	0.75	800	0.277	0.025	0.014	487	ND
LB74889	RESIDENT	2062 Fred Moore Hwy	East China	Outside Tap	< 1 mile north	Untreated Private Well	115	Single Family Dwelling	08/28/2007	--	--	--	0.019	--	--	--
LB74438	RESIDENT	2062 Fred Moore Hwy	East China	Outside Tap	< 1 mile north	Untreated Private Well	115	Single Family Dwelling	08/28/2007	--	497	0.3	--	--	331	ND
LB74441	RESIDENT	2062 Fred Moore Hwy	East China	Outside Tap	< 1 mile north	Untreated Private Well	115	Single Family Dwelling	08/28/2007	0.767	--	--	--	--	--	--
LB78916	RESIDENT	2062 Fred Moore Hwy	East China	Outside Tap	< 1 mile north	Untreated Private Well	115	Single Family Dwelling	09/18/2007	--	1,085	0.3	--	--	328	ND
LB78971	RESIDENT	2062 Fred Moore Hwy	East China	Outside Tap	< 1 mile north	Untreated Private Well	115	Single Family Dwelling	09/18/2007	--	--	--	0.011	--	--	--
LB78968	RESIDENT	2062 Fred Moore Hwy	East China	Outside Tap	< 1 mile north	Untreated Private Well	115	Single Family Dwelling	09/18/2007	0.787	--	--	--	--	--	--

NOTES:

NA = Not Available
ND = Not Detected
-- = Not Analyzed



- RANGE ROAD LANDFILL
- 2062 FRED MOORE HWY
- 3725 INDIAN TRAIL
- 4017 INDIAN TRAIL
- 5300 REMER ROAD

Base Map: USGS/TNM Topo
Data Sources: TRC, Fulcrum

N

0 0.5
mile

42.7945, -82.5133

DTE ENERGY COMPANY
RANGE ROAD LANDFILL

RESIDENTIAL WELL LOCATIONS

DRAWN BY:	K. AMONETTE	PROJ. NO.:	413591.0000.0000
CHECKED BY:			
APPROVED BY:			
DATE:	FEB. 2022		

FIGURE 1

TRC

1540 EISENHOWER PLACE
ANN ARBOR, MI 48108

FILE: 37F62AEF-3AFA-4976-8976-CF91C844983F

Appendix B
Laboratory Analytical Reports

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Tel: (330)497-9396

Laboratory Job ID: 240-165665-1
Client Project/Site: CCR DTE Range Road Landfill

For:
TRC Environmental Corporation.
1540 Eisenhower Place
Ann Arbor, Michigan 48108-7080

Attn: Mr. Vincent Buening

Authorized for release by:
5/9/2022 8:36:02 PM

Kris Brooks, Project Manager II
(330)966-9790
Kris.Brooks@et.eurofinsus.com

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 240-165665-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-165665-1

Comments
No additional comments.

Receipt
The samples were received on 4/28/2022 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.2º C.

Metals
No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Methods 300.0, 9056A: The following sample was diluted due to the nature of the sample matrix: MW-16-04 (240-165665-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
9056A	Anions, Ion Chromatography	SW846	TAL CAN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-165665-1	MW-16-01	Water	04/25/22 13:14	04/28/22 08:00
240-165665-2	MW-16-02	Water	04/25/22 12:35	04/28/22 08:00
240-165665-3	MW-16-03	Water	04/25/22 12:05	04/28/22 08:00
240-165665-4	MW-16-04	Water	04/26/22 09:47	04/28/22 08:00
240-165665-5	MW-16-05	Water	04/25/22 13:53	04/28/22 08:00
240-165665-6	MW-16-06	Water	04/25/22 11:22	04/28/22 08:00
240-165665-7	MW-16-07	Water	04/26/22 09:15	04/28/22 08:00
240-165665-8	DUP-01	Water	04/25/22 00:00	04/28/22 08:00
240-165665-9	EB-01	Water	04/25/22 10:30	04/28/22 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: MW-16-01 — Lab Sample ID: 240-165665-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	560		100		ug/L	1		6010B	Total Recoverable
Calcium	87000		1000		ug/L	1		6020	Total Recoverable
Iron	1600		100		ug/L	1		6020	Total Recoverable
Chloride	650		10		mg/L	10		9056A	Total/NA
Fluoride	0.81		0.050		mg/L	1		9056A	Total/NA
Sulfate	76		1.0		mg/L	1		9056A	Total/NA
Total Dissolved Solids	1100		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02 — Lab Sample ID: 240-165665-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100		ug/L	1		6010B	Total Recoverable
Calcium	22000		1000		ug/L	1		6020	Total Recoverable
Iron	870		100		ug/L	1		6020	Total Recoverable
Chloride	630		10		mg/L	10		9056A	Total/NA
Fluoride	2.0		0.050		mg/L	1		9056A	Total/NA
Total Dissolved Solids	1100		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03 — Lab Sample ID: 240-165665-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100		ug/L	1		6010B	Total Recoverable
Calcium	19000		1000		ug/L	1		6020	Total Recoverable
Iron	460		100		ug/L	1		6020	Total Recoverable
Chloride	510		5.0		mg/L	5		9056A	Total/NA
Fluoride	2.2		0.050		mg/L	1		9056A	Total/NA
Total Dissolved Solids	1000		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-04 — Lab Sample ID: 240-165665-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100		ug/L	1		6010B	Total Recoverable
Calcium	64000		1000		ug/L	1		6020	Total Recoverable
Iron	1200		100		ug/L	1		6020	Total Recoverable
Chloride	3200		25		mg/L	25		9056A	Total/NA
Fluoride	1.6		0.25		mg/L	5		9056A	Total/NA
Total Dissolved Solids	4800		50		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-05 — Lab Sample ID: 240-165665-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100		ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: MW-16-05 (Continued)

Lab Sample ID: 240-165665-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Calcium	23000		1000		ug/L	1		6020	Total Recoverable
Iron	190		100		ug/L	1		6020	Total Recoverable
Chloride	530		10		mg/L	10		9056A	Total/NA
Fluoride	1.9		0.050		mg/L	1		9056A	Total/NA
Sulfate	45		1.0		mg/L	1		9056A	Total/NA
Total Dissolved Solids	1100		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-06

Lab Sample ID: 240-165665-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100		ug/L	1		6010B	Total Recoverable
Calcium	78000		1000		ug/L	1		6020	Total Recoverable
Iron	670		100		ug/L	1		6020	Total Recoverable
Chloride	420		10		mg/L	10		9056A	Total/NA
Fluoride	1.3		0.050		mg/L	1		9056A	Total/NA
Sulfate	410		10		mg/L	10		9056A	Total/NA
Total Dissolved Solids	1400		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-07

Lab Sample ID: 240-165665-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	810		100		ug/L	1		6010B	Total Recoverable
Calcium	48000		1000		ug/L	1		6020	Total Recoverable
Iron	3800		100		ug/L	1		6020	Total Recoverable
Chloride	340		5.0		mg/L	5		9056A	Total/NA
Fluoride	1.3		0.050		mg/L	1		9056A	Total/NA
Sulfate	1.9		1.0		mg/L	1		9056A	Total/NA
Total Dissolved Solids	620		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01

Lab Sample ID: 240-165665-8

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100		ug/L	1		6010B	Total Recoverable
Calcium	79000		1000		ug/L	1		6020	Total Recoverable
Iron	680		100		ug/L	1		6020	Total Recoverable
Chloride	430		10		mg/L	10		9056A	Total/NA
Fluoride	1.3		0.050		mg/L	1		9056A	Total/NA
Sulfate	810		10		mg/L	10		9056A	Total/NA
Total Dissolved Solids	1400		20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: EB-01

Lab Sample ID: 240-165665-9

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: MW-16-01

Date Collected: 04/25/22 13:14
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-1

Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	560		100		ug/L		04/29/22 12:00	05/04/22 20:30	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	87000		1000		ug/L		04/29/22 12:00	05/02/22 16:52	1
Iron	1600		100		ug/L		04/29/22 12:00	05/02/22 16:52	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	650		10		mg/L			05/05/22 13:12	10
Fluoride	0.81		0.050		mg/L			05/05/22 12:06	1
Sulfate	76		1.0		mg/L			05/05/22 12:06	1
Total Dissolved Solids	1100		20		mg/L			04/29/22 09:29	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: MW-16-02

Date Collected: 04/25/22 12:35
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-2

Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100		ug/L		04/29/22 12:00	05/04/22 20:55	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	22000		1000		ug/L		04/29/22 12:00	05/02/22 17:00	1
Iron	870		100		ug/L		04/29/22 12:00	05/02/22 17:00	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	630		10		mg/L			05/05/22 13:55	10
Fluoride	2.0		0.050		mg/L			05/05/22 13:34	1
Sulfate	1.0	U	1.0		mg/L			05/05/22 13:34	1
Total Dissolved Solids	1100		20		mg/L			04/29/22 09:29	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: MW-16-03

Date Collected: 04/25/22 12:05
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-3

Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100		ug/L		04/29/22 12:00	05/04/22 20:59	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	19000		1000		ug/L		04/29/22 12:00	05/02/22 17:12	1
Iron	460		100		ug/L		04/29/22 12:00	05/02/22 17:12	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	510		5.0		mg/L			05/05/22 14:39	5
Fluoride	2.2		0.050		mg/L			05/05/22 14:17	1
Sulfate	1.0	U	1.0		mg/L			05/05/22 14:17	1
Total Dissolved Solids	1000		20		mg/L			04/29/22 09:29	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: MW-16-04

Date Collected: 04/26/22 09:47
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-4

Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100		ug/L		04/29/22 12:00	05/04/22 21:04	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	64000		1000		ug/L		04/29/22 12:00	05/02/22 17:14	1
Iron	1200		100		ug/L		04/29/22 12:00	05/02/22 17:14	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3200		25		mg/L			05/05/22 15:22	25
Fluoride	1.6		0.25		mg/L			05/05/22 15:00	5
Sulfate	5.0	U	5.0		mg/L			05/05/22 15:00	5
Total Dissolved Solids	4800		50		mg/L			04/29/22 09:29	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: MW-16-05

Date Collected: 04/25/22 13:53
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-5

Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100		ug/L		04/29/22 12:00	05/04/22 21:08	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	23000		1000		ug/L		04/29/22 12:00	05/02/22 17:17	1
Iron	190		100		ug/L		04/29/22 12:00	05/02/22 17:17	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	530		10		mg/L			05/05/22 16:06	10
Fluoride	1.9		0.050		mg/L			05/05/22 15:44	1
Sulfate	45		1.0		mg/L			05/05/22 15:44	1
Total Dissolved Solids	1100		20		mg/L			04/29/22 09:29	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: MW-16-06

Date Collected: 04/25/22 11:22
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-6

Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100		ug/L		04/29/22 12:00	05/04/22 21:12	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	78000		1000		ug/L		04/29/22 12:00	05/02/22 17:19	1
Iron	670		100		ug/L		04/29/22 12:00	05/02/22 17:19	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	420		10		mg/L			05/05/22 17:33	10
Fluoride	1.3		0.050		mg/L			05/05/22 16:28	1
Sulfate	410		10		mg/L			05/05/22 17:33	10
Total Dissolved Solids	1400		20		mg/L			04/29/22 09:29	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: MW-16-07

Date Collected: 04/26/22 09:15
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-7

Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	810		100		ug/L		04/29/22 12:00	05/04/22 21:17	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	48000		1000		ug/L		04/29/22 12:00	05/02/22 17:22	1
Iron	3800		100		ug/L		04/29/22 12:00	05/02/22 17:22	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	340		5.0		mg/L			05/05/22 18:16	5
Fluoride	1.3		0.050		mg/L			05/05/22 17:54	1
Sulfate	1.9		1.0		mg/L			05/05/22 17:54	1
Total Dissolved Solids	620		10		mg/L			04/29/22 09:29	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: DUP-01

Date Collected: 04/25/22 00:00
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-8

Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100		ug/L		04/29/22 12:00	05/04/22 21:21	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	79000		1000		ug/L		04/29/22 12:00	05/02/22 17:29	1
Iron	680		100		ug/L		04/29/22 12:00	05/02/22 17:29	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	430		10		mg/L			05/05/22 19:00	10
Fluoride	1.3		0.050		mg/L			05/05/22 18:38	1
Sulfate	810		10		mg/L			05/05/22 19:00	10
Total Dissolved Solids	1400		20		mg/L			04/29/22 09:29	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: EB-01

Date Collected: 04/25/22 10:30
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-9

Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100		ug/L		04/29/22 12:00	05/04/22 21:33	1

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		04/29/22 12:00	05/02/22 17:32	1
Iron	100	U	100		ug/L		04/29/22 12:00	05/02/22 17:32	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			05/05/22 19:21	1
Fluoride	0.050	U	0.050		mg/L			05/05/22 19:21	1
Sulfate	1.0	U	1.0		mg/L			05/05/22 19:21	1
Total Dissolved Solids	10	U	10		mg/L			04/29/22 09:29	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-524500/1-A
Matrix: Water
Analysis Batch: 525025

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 524500

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100		ug/L		04/29/22 12:00	05/03/22 18:22	1

Lab Sample ID: LCS 240-524500/2-A
Matrix: Water
Analysis Batch: 525025

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 524500

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			1000	878		ug/L		88	80 - 120		

Lab Sample ID: 240-165665-1 MS
Matrix: Water
Analysis Batch: 525195

Client Sample ID: MW-16-01
Prep Type: Total Recoverable
Prep Batch: 524500

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	560		1000	1560		ug/L		100	75 - 125		

Lab Sample ID: 240-165665-1 MSD
Matrix: Water
Analysis Batch: 525195

Client Sample ID: MW-16-01
Prep Type: Total Recoverable
Prep Batch: 524500

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	560		1000	1520		ug/L		95	75 - 125	3	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-524500/1-A
Matrix: Water
Analysis Batch: 524843

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 524500

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		04/29/22 12:00	05/02/22 16:48	1
Iron	100	U	100		ug/L		04/29/22 12:00	05/02/22 16:48	1

Lab Sample ID: LCS 240-524500/3-A
Matrix: Water
Analysis Batch: 524843

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 524500

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium			25000	25900		ug/L		104	80 - 120		
Iron			5000	4950		ug/L		99	80 - 120		

Lab Sample ID: 240-165665-2 MS
Matrix: Water
Analysis Batch: 524843

Client Sample ID: MW-16-02
Prep Type: Total Recoverable
Prep Batch: 524500

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium	22000		25000	47900		ug/L		104	75 - 125		
Iron	870		5000	5970		ug/L		102	75 - 125		

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 240-165665-2 MSD
Matrix: Water
Analysis Batch: 524843

Client Sample ID: MW-16-02
Prep Type: Total Recoverable
Prep Batch: 524500

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	22000		25000	47900		ug/L		104	75 - 125	0	20
Iron	870		5000	5930		ug/L		101	75 - 125	1	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-525131/3
Matrix: Water
Analysis Batch: 525131

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			05/05/22 08:51	1
Fluoride	0.050	U	0.050		mg/L			05/05/22 08:51	1
Sulfate	1.0	U	1.0		mg/L			05/05/22 08:51	1

Lab Sample ID: LCS 240-525131/4
Matrix: Water
Analysis Batch: 525131

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	49.4		mg/L		99	90 - 110		
Fluoride			2.50	2.58		mg/L		103	90 - 110		
Sulfate			50.0	50.7		mg/L		101	90 - 110		

Lab Sample ID: 240-165665-9 MS
Matrix: Water
Analysis Batch: 525131

Client Sample ID: EB-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1.0	U	50.0	52.4		mg/L		105	80 - 120		
Fluoride	0.050	U	2.50	2.73		mg/L		109	80 - 120		
Sulfate	1.0	U	50.0	52.8		mg/L		106	80 - 120		

Lab Sample ID: 240-165665-9 MSD
Matrix: Water
Analysis Batch: 525131

Client Sample ID: EB-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1.0	U	50.0	53.4		mg/L		107	80 - 120	2	15
Fluoride	0.050	U	2.50	2.78		mg/L		111	80 - 120	2	15
Sulfate	1.0	U	50.0	53.7		mg/L		107	80 - 120	2	15

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 240-524518/1
Matrix: Water
Analysis Batch: 524518

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			04/29/22 09:29	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 240-524518/2
Matrix: Water
Analysis Batch: 524518

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			482	471		mg/L		98	80 - 120		

Lab Sample ID: 240-165665-1 DU
Matrix: Water
Analysis Batch: 524518

Client Sample ID: MW-16-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1100			1020		mg/L				8	20

QC Association Summary

Client: TRC Environmental Corporation. Job ID: 240-165665-1
Project/Site: CCR DTE Range Road Landfill

Metals

Prep Batch: 524500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-165665-1	MW-16-01	Total Recoverable	Water	3005A	
240-165665-2	MW-16-02	Total Recoverable	Water	3005A	
240-165665-3	MW-16-03	Total Recoverable	Water	3005A	
240-165665-4	MW-16-04	Total Recoverable	Water	3005A	
240-165665-5	MW-16-05	Total Recoverable	Water	3005A	
240-165665-6	MW-16-06	Total Recoverable	Water	3005A	
240-165665-7	MW-16-07	Total Recoverable	Water	3005A	
240-165665-8	DUP-01	Total Recoverable	Water	3005A	
240-165665-9	EB-01	Total Recoverable	Water	3005A	
MB 240-524500/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-524500/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-524500/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-165665-1 MS	MW-16-01	Total Recoverable	Water	3005A	
240-165665-1 MSD	MW-16-01	Total Recoverable	Water	3005A	
240-165665-2 MS	MW-16-02	Total Recoverable	Water	3005A	
240-165665-2 MSD	MW-16-02	Total Recoverable	Water	3005A	

Analysis Batch: 524843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-165665-1	MW-16-01	Total Recoverable	Water	6020	524500
240-165665-2	MW-16-02	Total Recoverable	Water	6020	524500
240-165665-3	MW-16-03	Total Recoverable	Water	6020	524500
240-165665-4	MW-16-04	Total Recoverable	Water	6020	524500
240-165665-5	MW-16-05	Total Recoverable	Water	6020	524500
240-165665-6	MW-16-06	Total Recoverable	Water	6020	524500
240-165665-7	MW-16-07	Total Recoverable	Water	6020	524500
240-165665-8	DUP-01	Total Recoverable	Water	6020	524500
240-165665-9	EB-01	Total Recoverable	Water	6020	524500
MB 240-524500/1-A	Method Blank	Total Recoverable	Water	6020	524500
LCS 240-524500/3-A	Lab Control Sample	Total Recoverable	Water	6020	524500
240-165665-2 MS	MW-16-02	Total Recoverable	Water	6020	524500
240-165665-2 MSD	MW-16-02	Total Recoverable	Water	6020	524500

Analysis Batch: 525025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-524500/1-A	Method Blank	Total Recoverable	Water	6010B	524500
LCS 240-524500/2-A	Lab Control Sample	Total Recoverable	Water	6010B	524500

Analysis Batch: 525195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-165665-1	MW-16-01	Total Recoverable	Water	6010B	524500
240-165665-2	MW-16-02	Total Recoverable	Water	6010B	524500
240-165665-3	MW-16-03	Total Recoverable	Water	6010B	524500
240-165665-4	MW-16-04	Total Recoverable	Water	6010B	524500
240-165665-5	MW-16-05	Total Recoverable	Water	6010B	524500
240-165665-6	MW-16-06	Total Recoverable	Water	6010B	524500
240-165665-7	MW-16-07	Total Recoverable	Water	6010B	524500
240-165665-8	DUP-01	Total Recoverable	Water	6010B	524500
240-165665-9	EB-01	Total Recoverable	Water	6010B	524500
240-165665-1 MS	MW-16-01	Total Recoverable	Water	6010B	524500
240-165665-1 MSD	MW-16-01	Total Recoverable	Water	6010B	524500

General Chemistry

Analysis Batch: 524518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-165665-1	MW-16-01	Total/NA	Water	SM 2540C	
240-165665-2	MW-16-02	Total/NA	Water	SM 2540C	
240-165665-3	MW-16-03	Total/NA	Water	SM 2540C	
240-165665-4	MW-16-04	Total/NA	Water	SM 2540C	
240-165665-5	MW-16-05	Total/NA	Water	SM 2540C	
240-165665-6	MW-16-06	Total/NA	Water	SM 2540C	
240-165665-7	MW-16-07	Total/NA	Water	SM 2540C	
240-165665-8	DUP-01	Total/NA	Water	SM 2540C	
240-165665-9	EB-01	Total/NA	Water	SM 2540C	
MB 240-524518/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-524518/2	Lab Control Sample	Total/NA	Water	SM 2540C	
240-165665-1 DU	MW-16-01	Total/NA	Water	SM 2540C	

Analysis Batch: 525131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-165665-1	MW-16-01	Total/NA	Water	9056A	
240-165665-1	MW-16-01	Total/NA	Water	9056A	
240-165665-2	MW-16-02	Total/NA	Water	9056A	
240-165665-2	MW-16-02	Total/NA	Water	9056A	
240-165665-3	MW-16-03	Total/NA	Water	9056A	
240-165665-3	MW-16-03	Total/NA	Water	9056A	
240-165665-4	MW-16-04	Total/NA	Water	9056A	
240-165665-4	MW-16-04	Total/NA	Water	9056A	
240-165665-5	MW-16-05	Total/NA	Water	9056A	
240-165665-5	MW-16-05	Total/NA	Water	9056A	
240-165665-6	MW-16-06	Total/NA	Water	9056A	
240-165665-6	MW-16-06	Total/NA	Water	9056A	
240-165665-7	MW-16-07	Total/NA	Water	9056A	
240-165665-7	MW-16-07	Total/NA	Water	9056A	
240-165665-8	DUP-01	Total/NA	Water	9056A	
240-165665-8	DUP-01	Total/NA	Water	9056A	
240-165665-9	EB-01	Total/NA	Water	9056A	
MB 240-525131/3	Method Blank	Total/NA	Water	9056A	
LCS 240-525131/4	Lab Control Sample	Total/NA	Water	9056A	
240-165665-9 MS	EB-01	Total/NA	Water	9056A	
240-165665-9 MSD	EB-01	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: MW-16-01

Lab Sample ID: 240-165665-1
Date Collected: 04/25/22 13:14
Matrix: Water
Date Received: 04/28/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	525195	05/04/22 20:30	KLC	TAL CAN
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	524843	05/02/22 16:52	DSH	TAL CAN
Total/NA	Analysis	9056A		1	525131	05/05/22 12:06	JMB	TAL CAN
Total/NA	Analysis	9056A		10	525131	05/05/22 13:12	JMB	TAL CAN
Total/NA	Analysis	SM 2540C		1	524518	04/29/22 09:29	AJ	TAL CAN

Client Sample ID: MW-16-02

Lab Sample ID: 240-165665-2
Date Collected: 04/25/22 12:35
Matrix: Water
Date Received: 04/28/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	525195	05/04/22 20:55	KLC	TAL CAN
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	524843	05/02/22 17:00	DSH	TAL CAN
Total/NA	Analysis	9056A		1	525131	05/05/22 13:34	JMB	TAL CAN
Total/NA	Analysis	9056A		10	525131	05/05/22 13:55	JMB	TAL CAN
Total/NA	Analysis	SM 2540C		1	524518	04/29/22 09:29	AJ	TAL CAN

Client Sample ID: MW-16-03

Lab Sample ID: 240-165665-3
Date Collected: 04/25/22 12:05
Matrix: Water
Date Received: 04/28/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	525195	05/04/22 20:59	KLC	TAL CAN
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	524843	05/02/22 17:12	DSH	TAL CAN
Total/NA	Analysis	9056A		1	525131	05/05/22 14:17	JMB	TAL CAN
Total/NA	Analysis	9056A		5	525131	05/05/22 14:39	JMB	TAL CAN
Total/NA	Analysis	SM 2540C		1	524518	04/29/22 09:29	AJ	TAL CAN

Client Sample ID: MW-16-04

Lab Sample ID: 240-165665-4
Date Collected: 04/26/22 09:47
Matrix: Water
Date Received: 04/28/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	525195	05/04/22 21:04	KLC	TAL CAN
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	524843	05/02/22 17:14	DSH	TAL CAN
Total/NA	Analysis	9056A		5	525131	05/05/22 15:00	JMB	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: MW-16-04

Date Collected: 04/26/22 09:47
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		25	525131	05/05/22 15:22	JMB	TAL CAN
Total/NA	Analysis	SM 2540C		1	524518	04/29/22 09:29	AJ	TAL CAN

Client Sample ID: MW-16-05

Date Collected: 04/25/22 13:53
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	525195	05/04/22 21:08	KLC	TAL CAN
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	524843	05/02/22 17:17	DSH	TAL CAN
Total/NA	Analysis	9056A		1	525131	05/05/22 15:44	JMB	TAL CAN
Total/NA	Analysis	9056A		10	525131	05/05/22 16:06	JMB	TAL CAN
Total/NA	Analysis	SM 2540C		1	524518	04/29/22 09:29	AJ	TAL CAN

Client Sample ID: MW-16-06

Date Collected: 04/25/22 11:22
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	525195	05/04/22 21:12	KLC	TAL CAN
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	524843	05/02/22 17:19	DSH	TAL CAN
Total/NA	Analysis	9056A		1	525131	05/05/22 16:28	JMB	TAL CAN
Total/NA	Analysis	9056A		10	525131	05/05/22 17:33	JMB	TAL CAN
Total/NA	Analysis	SM 2540C		1	524518	04/29/22 09:29	AJ	TAL CAN

Client Sample ID: MW-16-07

Date Collected: 04/26/22 09:15
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	525195	05/04/22 21:17	KLC	TAL CAN
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	524843	05/02/22 17:22	DSH	TAL CAN
Total/NA	Analysis	9056A		1	525131	05/05/22 17:54	JMB	TAL CAN
Total/NA	Analysis	9056A		5	525131	05/05/22 18:16	JMB	TAL CAN
Total/NA	Analysis	SM 2540C		1	524518	04/29/22 09:29	AJ	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill

Job ID: 240-165665-1

Client Sample ID: DUP-01

Date Collected: 04/25/22 00:00
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	525195	05/04/22 21:21	KLC	TAL CAN
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	524843	05/02/22 17:29	DSH	TAL CAN
Total/NA	Analysis	9056A		1	525131	05/05/22 18:38	JMB	TAL CAN
Total/NA	Analysis	9056A		10	525131	05/05/22 19:00	JMB	TAL CAN
Total/NA	Analysis	SM 2540C		1	524518	04/29/22 09:29	AJ	TAL CAN

Client Sample ID: EB-01

Date Collected: 04/25/22 10:30
Date Received: 04/28/22 08:00

Lab Sample ID: 240-165665-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	525195	05/04/22 21:33	KLC	TAL CAN
Total Recoverable	Prep	3005A			524500	04/29/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	524843	05/02/22 17:32	DSH	TAL CAN
Total/NA	Analysis	9056A		1	525131	05/05/22 19:21	JMB	TAL CAN
Total/NA	Analysis	SM 2540C		1	524518	04/29/22 09:29	AJ	TAL CAN

Laboratory References:

TAL CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-165665-1
Project/Site: CCR DTE Range Road Landfill

Laboratory: Eurofins Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22 *
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-23-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-22-16	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Phone (330) 497-9396 Phone (330) 497-0772

4/27/22

Chain of Custody Record

MICHIGAN 190

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Client Information	Sampler: Jake Kienz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-94376-31929.1
Client Contact: Mr. Vincent Buening	Phone: 734-395-9804	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page of
Company: TRC Environmental Corporation	PWSID:			Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			
City: Ann Arbor	TAT Requested (days):			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 179968 - 2022			
Email: vbuening@trccompanies.com	WO #: 370029.0000 P1 T2			
Project Name: CCR DTE RRLF HMP Uppermost Aquifer	Project #: 24016807			
Site: Michigan	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010 Bo, 6020 Ca, Fe	2540C_Calcd TDS, 9056A_28D Sulfate, Chloride, Fluoride	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N		
MW-16-01	4-25-22	1314	G	Water	N	N	X	X		
MW-16-02		1235	G	Water			X	X		
MW-16-03		1205	G	Water			X	X		
MW-16-04	4-26-22	0947	G	Water			X	X		
MW-16-05	4-25-22	1357	G	Water			X	X		
MW-16-06	4-25-22	1122	G	Water			X	X		
MW-16-07	4-26-22	0915	G	Water			X	X		
DUP-01	4-25-22	—	G	Water			X	X		
EB-01	4-25-22	1030	G	Water			X	X		
				Water						

240-165665 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Jake Kienz	4-27-22 / 0821	TRC	Ken Hall	04-27-2022 821	EETA
2	Ken Hall	4-27-22 825	EETA	Amy Hogan	4-28-22 800	EETNC
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 165665**
Canton Facility

Client TRC Site Name

Cooler Received on 4-28-22 Opened on 4-28-22

Cooler unpacked by: Tammy Boyle

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time Storage Location

TestAmerica Cooler # 1A Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-13 (CF **0.0** °C) Observed Cooler Temp. 1.2 °C Corrected Cooler Temp. 1.2 °C
   IR GUN #IR-15 (CF **-0.7**°C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?	Yes	No
10. Were correct bottle(s) used for the test(s) indicated?	Yes	No
11. Sufficient quantity received to perform indicated analyses?	Yes	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# **HC157842**
14. Were VOAs on the COC?	Yes	No
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes	No
17. Was a LL Hg or Me Hg trip blank present?	Yes	No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM Date by via Verbal Voice Mail Other

Concerning

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.
Time preserved: Preservative(s) added/Lot number(s):

VOA Sample Preservation - Date/Time VOAs Frozen:

WI-NC-099

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-01	240-165665-A-1	Plastic 250ml - with Nitric Acid	<2			
MW-16-02	240-165665-A-2	Plastic 250ml - with Nitric Acid	<2			
MW-16-03	240-165665-A-3	Plastic 250ml - with Nitric Acid	<2			
MW-16-04	240-165665-A-4	Plastic 250ml - with Nitric Acid	<2			
MW-16-05	240-165665-A-5	Plastic 250ml - with Nitric Acid	<2			
MW-16-06	240-165665-A-6	Plastic 250ml - with Nitric Acid	<2			
MW-16-07	240-165665-A-7	Plastic 250ml - with Nitric Acid	<2			
DUP-01	240-165665-A-8	Plastic 250ml - with Nitric Acid	<2			
EB-01	240-165665-A-9	Plastic 250ml - with Nitric Acid	<2			

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ANALYTICAL REPORT

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Tel: (330)497-9396

Laboratory Job ID: 240-167449-1
Client Project/Site: CCR DTE Range Road Landfill 2022

For:
TRC Environmental Corporation.
1540 Eisenhower Place
Ann Arbor, Michigan 48108-7080

Attn: Mr. Vincent Buening

Authorized for release by:
6/7/2022 7:51:03 PM

Kris Brooks, Project Manager II
(330)966-9790
Kris.Brooks@et.eurofinsus.com

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-167449-1
Project/Site: CCR DTE Range Road Landfill 2022

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill 2022

Job ID: 240-167449-1

Job ID: 240-167449-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-167449-1

Comments
No additional comments.

Receipt
The samples were received on 6/1/2022 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.2º C.

Metals
No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: TRC Environmental Corporation.
Job ID: 240-167449-1
Project/Site: CCR DTE Range Road Landfill 2022

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL CAN
9056A	Anions, Ion Chromatography	SW846	TAL CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-167449-1
Project/Site: CCR DTE Range Road Landfill 2022

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-167449-1	MW-16-05	Water	05/26/22 11:51	06/01/22 08:00
240-167449-2	DUP-01	Water	05/26/22 00:00	06/01/22 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Range Road Landfill 2022

Job ID: 240-167449-1

Client Sample ID: MW-16-05 — Lab Sample ID: 240-167449-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Calcium	18000		1000		ug/L	1		6020	Total Recoverable
Sulfate	7.0		1.0		mg/L	1		9056A	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-167449-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Calcium	17000		1000		ug/L	1		6020	Total Recoverable
Sulfate	7.0		1.0		mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-167449-1
Project/Site: CCR DTE Range Road Landfill 2022

Client Sample ID: MW-16-05 Lab Sample ID: 240-167449-1

Date Collected: 05/26/22 11:51 **Matrix: Water**
Date Received: 06/01/22 08:00

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	18000		1000		ug/L		06/02/22 12:00	06/03/22 13:43	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	7.0		1.0		mg/L			06/04/22 17:13	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-167449-1
Project/Site: CCR DTE Range Road Landfill 2022

Client Sample ID: DUP-01
Date Collected: 05/26/22 00:00
Date Received: 06/01/22 08:00

Lab Sample ID: 240-167449-2
Matrix: Water

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	17000		1000		ug/L		06/02/22 12:00	06/03/22 13:46	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	7.0		1.0		mg/L			06/04/22 17:54	1

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-528917/1-A
Matrix: Water
Analysis Batch: 529134

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 528917

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		06/02/22 12:00	06/03/22 13:09	1

Lab Sample ID: LCS 240-528917/3-A
Matrix: Water
Analysis Batch: 529134

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 528917

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium			25000	23700		ug/L		95	80 - 120		

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-528799/3
Matrix: Water
Analysis Batch: 528799

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0	U	1.0		mg/L			06/02/22 21:27	1

Lab Sample ID: LCS 240-528799/4
Matrix: Water
Analysis Batch: 528799

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			50.0	51.3		mg/L		103	90 - 110		

Lab Sample ID: MB 240-529207/3
Matrix: Water
Analysis Batch: 529207

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0	U	1.0		mg/L			06/04/22 12:32	1

Lab Sample ID: LCS 240-529207/4
Matrix: Water
Analysis Batch: 529207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			50.0	50.9		mg/L		102	90 - 110		

QC Association Summary

Client: TRC Environmental Corporation. Job ID: 240-167449-1
Project/Site: CCR DTE Range Road Landfill 2022

Metals

Prep Batch: 528917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-167449-1	MW-16-05	Total Recoverable	Water	3005A	
240-167449-2	DUP-01	Total Recoverable	Water	3005A	
MB 240-528917/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-528917/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 529134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-167449-1	MW-16-05	Total Recoverable	Water	6020	528917
240-167449-2	DUP-01	Total Recoverable	Water	6020	528917
MB 240-528917/1-A	Method Blank	Total Recoverable	Water	6020	528917
LCS 240-528917/3-A	Lab Control Sample	Total Recoverable	Water	6020	528917

General Chemistry

Analysis Batch: 528799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-528799/3	Method Blank	Total/NA	Water	9056A	
LCS 240-528799/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 529207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-167449-1	MW-16-05	Total/NA	Water	9056A	
240-167449-2	DUP-01	Total/NA	Water	9056A	
MB 240-529207/3	Method Blank	Total/NA	Water	9056A	
LCS 240-529207/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-167449-1
Project/Site: CCR DTE Range Road Landfill 2022

Client Sample ID: MW-16-05 — Lab Sample ID: 240-167449-1

Date Collected: 05/26/22 11:51 — **Matrix: Water**
Date Received: 06/01/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			528917	06/02/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	529134	06/03/22 13:43	AJC	TAL CAN
Total/NA	Analysis	9056A		1	529207	06/04/22 17:13	JMB	TAL CAN

Client Sample ID: DUP-01 — Lab Sample ID: 240-167449-2

Date Collected: 05/26/22 00:00 — **Matrix: Water**
Date Received: 06/01/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			528917	06/02/22 12:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	529134	06/03/22 13:46	AJC	TAL CAN
Total/NA	Analysis	9056A		1	529207	06/04/22 17:54	JMB	TAL CAN

Laboratory References:

TAL CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-167449-1
Project/Site: CCR DTE Range Road Landfill 2022

Laboratory: Eurofins Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22 *
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-23-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-22-16	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Address: Canton, OH 22122 MICHIGAN 190

Chain of Custody Record

566037 eurofins | Environment Testing TestAmerica

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact	Project Manager: Vince Buening	Site Contact:	Date:	COC No:
Company Name: TRC	Tel/Email: Vbuening@TRCcompanies.com	Lab Contact: Kris Brooks	Carrier:	____ of ____ COCs
Address: 1540 Eisenhower Place	Analysis Turnaround Time			Sampler:
City/State/Zip: Ann Arbor MI 48108	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone:	TAT if different from Below 3 day			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: DTE CCR RRLF 2022	☐ 1 week			
Site: Range Road Landfill	☐ 2 days			Job / SDG No.:
PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Calcium Sulfate		Sample Specific Notes:
MW-16-05	5-26-22	1151	G	GW	2	N	N	X	X	
DUP-01	5-26-22	—	G	GW	2	N	N	X	X	

240-167449 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

	Company	Date/Time		Company	Date/Time
Relinquished by:	TRC	5-31-22/1158	Received by:	EEHA	5/31/22 1157
Relinquished by:	EEHA	5-31-22 12pm	Received by:	EEHA	6-1-22 8:00
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

6/7/2022

Eurofins - Canton Sample Receipt Form/Narrative Login # : 167449
Barberton Facility

Client TRC Site Name ______ Cooler unpacked by: Marley Bl...

Cooler Received on 6-1-22 Opened on 6-1-22

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other ______

Receipt After-hours: Drop-off Date/Time ______ Storage Location ______

Eurofins Cooler # TR Foam Box Client Cooler Box Other ______

Packing material used: Bubble Wrap Foam Plastic Bag None Other ______

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-13 (CF **0.0** °C) Observed Cooler Temp. 2.2 °C Corrected Cooler Temp. 2.2 °C
   IR GUN #IR-15 (CF **-0.7**°C) Observed Cooler Temp. ______ °C Corrected Cooler Temp. ______ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity ______ Yes No
   -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
   -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
    If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC157842**
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? ⬤ ← Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # ______ Yes No
17. Was a LL Hg or Me Hg trip blank present? ______ Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM ______ Date ______ by ______ via Verbal Voice Mail Other

Concerning ______

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page Samples processed by:

19. SAMPLE CONDITION

Sample(s) ______ were received after the recommended holding time had expired.
Sample(s) ______ were received in a broken container.
Sample(s) ______ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) ______ were further preserved in the laboratory.
Time preserved: ______ Preservative(s) added/Lot number(s): ______

VOA Sample Preservation - Date/Time VOAs Frozen: ______

WI-NC-099

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-05	240-167449-B-1	Plastic 250ml - with Nitric Acid	<2			
DUP-01	240-167449-B-2	Plastic 250ml - with Nitric Acid	<2			

eurofins | Environment Testing

ANALYTICAL REPORT

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Tel: (330)497-9396

Laboratory Job ID: 240-174937-1
Client Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

For:
TRC Environmental Corporation.
1540 Eisenhower Place
Ann Arbor, Michigan 48108-7080

Attn: Mr. Vincent Buening

Authorized for release by:
11/3/2022 9:34:15 AM

Kris Brooks, Project Manager II
(330)966-9790
Kris.Brooks@et.eurofinsus.com

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 240-174937-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-174937-1

Receipt
The samples were received on 10/19/2022 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.8°C

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 2540C_Calcd: LCS failed high for the batch. Samples will be reported for in hold results. Samples will be re-analyzed out of hold with passing QC: MW-16-01 (240-174937-1), DUP-01 (240-174937-2), MW-16-02 (240-174937-3), MW-16-03 (240-174937-4), MW-16-06 (240-174937-5), MW-16-05 (240-174937-6), (240-174839-B-5), (240-174839-B-5 DU), (240-175045-D-2) and (240-175045-D-2 DU)

Method 2540C_Calcd: Reanalysis of the following sample(s) was performed outside of the analytical holding time due to failure of quality control parameters in the initial analysis. MW-16-01 (240-174937-1), DUP-01 (240-174937-2), MW-16-02 (240-174937-3), MW-16-03 (240-174937-4), MW-16-06 (240-174937-5) and MW-16-05 (240-174937-6)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: TRC Environmental Corporation. Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET CAN
6020	Metals (ICP/MS)	SW846	EET CAN
9056A	Anions, Ion Chromatography	SW846	EET CAN
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CAN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-174937-1	MW-16-01	Water	10/17/22 12:07	10/19/22 09:40
240-174937-2	DUP-01	Water	10/17/22 00:00	10/19/22 09:40
240-174937-3	MW-16-02	Water	10/17/22 13:05	10/19/22 09:40
240-174937-4	MW-16-03	Water	10/17/22 13:51	10/19/22 09:40
240-174937-5	MW-16-06	Water	10/17/22 14:27	10/19/22 09:40
240-174937-6	MW-16-05	Water	10/17/22 15:41	10/19/22 09:40

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-01 Lab Sample ID: 240-174937-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	580		100		ug/L	1		6010B	Total Recoverable
Calcium	90000		1000		ug/L	1		6020	Total Recoverable
Iron	1500		100		ug/L	1		6020	Total Recoverable
Chloride	670		10		mg/L	10		9056A	Total/NA
Fluoride	0.77		0.050		mg/L	1		9056A	Total/NA
Sulfate	67		1.0		mg/L	1		9056A	Total/NA
Total Dissolved Solids	1200	*+	20		mg/L	1		SM 2540C	Total/NA
Total Dissolved Solids - RA	1200	H	20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01 Lab Sample ID: 240-174937-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	630		100		ug/L	1		6010B	Total Recoverable
Calcium	95000		1000		ug/L	1		6020	Total Recoverable
Iron	1600		100		ug/L	1		6020	Total Recoverable
Chloride	670		10		mg/L	10		9056A	Total/NA
Fluoride	0.77		0.050		mg/L	1		9056A	Total/NA
Sulfate	66		1.0		mg/L	1		9056A	Total/NA
Total Dissolved Solids	1200	*+	20		mg/L	1		SM 2540C	Total/NA
Total Dissolved Solids - RA	1300	H	20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02 Lab Sample ID: 240-174937-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100		ug/L	1		6010B	Total Recoverable
Calcium	24000		1000		ug/L	1		6020	Total Recoverable
Iron	780		100		ug/L	1		6020	Total Recoverable
Chloride	660		10		mg/L	10		9056A	Total/NA
Fluoride	1.9		0.050		mg/L	1		9056A	Total/NA
Total Dissolved Solids	1100	*+	20		mg/L	1		SM 2540C	Total/NA
Total Dissolved Solids - RA	1100	H	20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03 Lab Sample ID: 240-174937-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1200		100		ug/L	1		6010B	Total Recoverable
Calcium	21000		1000		ug/L	1		6020	Total Recoverable
Iron	530		100		ug/L	1		6020	Total Recoverable
Chloride	540		10		mg/L	10		9056A	Total/NA
Fluoride	2.1		0.050		mg/L	1		9056A	Total/NA
Total Dissolved Solids	970	*+	20		mg/L	1		SM 2540C	Total/NA
Total Dissolved Solids - RA	970	H	20		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-06 Lab Sample ID: 240-174937-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100		ug/L	1		6010B	Total Recoverable
Calcium	76000		1000		ug/L	1		6020	Total Recoverable
Iron	640		100		ug/L	1		6020	Total Recoverable
Chloride	460		10		mg/L	10		9056A	Total/NA
Fluoride	1.2		0.050		mg/L	1		9056A	Total/NA
Sulfate	330		10		mg/L	10		9056A	Total/NA
Total Dissolved Solids	1300	*+	20		mg/L	1		SM 2540C	Total/NA
Total Dissolved Solids - RA	1200	H	20		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-05 Lab Sample ID: 240-174937-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1300		100		ug/L	1		6010B	Total Recoverable
Calcium	19000		1000		ug/L	1		6020	Total Recoverable
Iron	200		100		ug/L	1		6020	Total Recoverable
Chloride	560		10		mg/L	10		9056A	Total/NA
Fluoride	1.8		0.050		mg/L	1		9056A	Total/NA
Sulfate	2.4		1.0		mg/L	1		9056A	Total/NA
Total Dissolved Solids	1000	*+	10		mg/L	1		SM 2540C	Total/NA
Total Dissolved Solids - RA	920	H	20		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-01 — Lab Sample ID: 240-174937-1

Date Collected: 10/17/22 12:07 — **Matrix: Water**
Date Received: 10/19/22 09:40

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	580		100		ug/L		10/20/22 12:00	10/21/22 23:38	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	90000		1000		ug/L		10/20/22 12:00	10/24/22 13:28	1
Iron	1500		100		ug/L		10/20/22 12:00	10/24/22 13:28	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	670		10		mg/L			11/01/22 09:33	10
Fluoride (SW846 9056A)	0.77		0.050		mg/L			11/01/22 09:13	1
Sulfate (SW846 9056A)	67		1.0		mg/L			11/01/22 09:13	1
Total Dissolved Solids (SM 2540C)	1200	*+	20		mg/L			10/21/22 09:51	1

General Chemistry - RA

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1200	H	20		mg/L			10/25/22 16:00	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: DUP-01 — Lab Sample ID: 240-174937-2

Date Collected: 10/17/22 00:00 — **Matrix: Water**
Date Received: 10/19/22 09:40

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	630		100		ug/L		10/20/22 12:00	10/21/22 23:42	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	95000		1000		ug/L		10/20/22 12:00	10/24/22 13:32	1
Iron	1600		100		ug/L		10/20/22 12:00	10/24/22 13:32	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	670		10		mg/L			11/01/22 10:13	10
Fluoride (SW846 9056A)	0.77		0.050		mg/L			11/01/22 09:53	1
Sulfate (SW846 9056A)	66		1.0		mg/L			11/01/22 09:53	1
Total Dissolved Solids (SM 2540C)	1200	*+	20		mg/L			10/21/22 09:51	1

General Chemistry - RA

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1300	H	20		mg/L			10/25/22 16:00	1

Client: TRC Environmental Corporation.
Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-02
Lab Sample ID: 240-174937-3
Date Collected: 10/17/22 13:05
Matrix: Water
Date Received: 10/19/22 09:40

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100		ug/L		10/20/22 12:00	10/21/22 23:47	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	24000		1000		ug/L		10/20/22 12:00	10/24/22 13:37	1
Iron	780		100		ug/L		10/20/22 12:00	10/24/22 13:37	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	660		10		mg/L			11/01/22 10:53	10
Fluoride (SW846 9056A)	1.9		0.050		mg/L			11/01/22 10:33	1
Sulfate (SW846 9056A)	1.0	U	1.0		mg/L			11/01/22 10:33	1
Total Dissolved Solids (SM 2540C)	1100	*+	20		mg/L			10/21/22 09:51	1

General Chemistry - RA

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1100	H	20		mg/L			10/25/22 16:00	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-03 — Lab Sample ID: 240-174937-4

Date Collected: 10/17/22 13:51 — **Matrix: Water**
Date Received: 10/19/22 09:40

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1200		100		ug/L		10/20/22 12:00	10/21/22 23:51	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	21000		1000		ug/L		10/20/22 12:00	10/24/22 13:41	1
Iron	530		100		ug/L		10/20/22 12:00	10/24/22 13:41	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	540		10		mg/L			11/01/22 11:33	10
Fluoride (SW846 9056A)	2.1		0.050		mg/L			11/01/22 11:13	1
Sulfate (SW846 9056A)	1.0	U	1.0		mg/L			11/01/22 11:13	1
Total Dissolved Solids (SM 2540C)	970	*+	20		mg/L			10/21/22 09:51	1

General Chemistry - RA

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	970	H	20		mg/L			10/25/22 16:00	1

Client: TRC Environmental Corporation.
Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-06
Lab Sample ID: 240-174937-5
Date Collected: 10/17/22 14:27
Matrix: Water
Date Received: 10/19/22 09:40

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100		ug/L		10/20/22 12:00	10/21/22 23:55	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	76000		1000		ug/L		10/20/22 12:00	10/24/22 13:46	1
Iron	640		100		ug/L		10/20/22 12:00	10/24/22 13:46	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	460		10		mg/L			11/01/22 12:14	10
Fluoride (SW846 9056A)	1.2		0.050		mg/L			11/01/22 11:54	1
Sulfate (SW846 9056A)	330		10		mg/L			11/01/22 12:14	10
Total Dissolved Solids (SM 2540C)	1300	*+	20		mg/L			10/21/22 09:51	1

General Chemistry - RA

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1200	H	20		mg/L			10/25/22 16:00	1

Client: TRC Environmental Corporation. Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-05 — Lab Sample ID: 240-174937-6

Date Collected: 10/17/22 15:41 — **Matrix: Water**
Date Received: 10/19/22 09:40

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1300		100		ug/L		10/20/22 12:00	10/22/22 00:00	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	19000		1000		ug/L		10/20/22 12:00	10/24/22 13:50	1
Iron	200		100		ug/L		10/20/22 12:00	10/24/22 13:50	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	560		10		mg/L			11/01/22 13:34	10
Fluoride (SW846 9056A)	1.8		0.050		mg/L			11/01/22 13:14	1
Sulfate (SW846 9056A)	2.4		1.0		mg/L			11/01/22 13:14	1
Total Dissolved Solids (SM 2540C)	1000	*+	10		mg/L			10/21/22 09:51	1

General Chemistry - RA

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	920	H	20		mg/L			10/25/22 16:00	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-548001/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 548179 — **Prep Batch: 548001**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100		ug/L		10/20/22 12:00	10/21/22 22:48	1

Lab Sample ID: LCS 240-548001/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 548179 — **Prep Batch: 548001**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			1000	1030		ug/L		103	80 - 120		

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-548001/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 548578 — **Prep Batch: 548001**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		10/20/22 12:00	10/24/22 12:27	1
Iron	100	U	100		ug/L		10/20/22 12:00	10/24/22 12:27	1

Lab Sample ID: LCS 240-548001/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 548578 — **Prep Batch: 548001**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium			25000	24200		ug/L		97	80 - 120		
Iron			5000	4840		ug/L		97	80 - 120		

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-549671/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 549671

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			11/01/22 01:30	1
Fluoride	0.050	U	0.050		mg/L			11/01/22 01:30	1
Sulfate	1.0	U	1.0		mg/L			11/01/22 01:30	1

Lab Sample ID: LCS 240-549671/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 549671

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	50.6		mg/L		101	90 - 110		
Fluoride			2.50	2.49		mg/L		100	90 - 110		
Sulfate			50.0	51.8		mg/L		104	90 - 110		

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 240-548150/1
Matrix: Water
Analysis Batch: 548150

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			10/21/22 09:51	1

Lab Sample ID: LCS 240-548150/2
Matrix: Water
Analysis Batch: 548150

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			500	831	*+	mg/L		166	80 - 120		

Lab Sample ID: MB 240-548703/1
Matrix: Water
Analysis Batch: 548703

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			10/25/22 16:00	1

Lab Sample ID: LCS 240-548703/2
Matrix: Water
Analysis Batch: 548703

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			388	376		mg/L		97	80 - 120		

Metals

Prep Batch: 548001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-174937-1	MW-16-01	Total Recoverable	Water	3005A	
240-174937-2	DUP-01	Total Recoverable	Water	3005A	
240-174937-3	MW-16-02	Total Recoverable	Water	3005A	
240-174937-4	MW-16-03	Total Recoverable	Water	3005A	
240-174937-5	MW-16-06	Total Recoverable	Water	3005A	
240-174937-6	MW-16-05	Total Recoverable	Water	3005A	
MB 240-548001/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-548001/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-548001/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 548179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-174937-1	MW-16-01	Total Recoverable	Water	6010B	548001
240-174937-2	DUP-01	Total Recoverable	Water	6010B	548001
240-174937-3	MW-16-02	Total Recoverable	Water	6010B	548001
240-174937-4	MW-16-03	Total Recoverable	Water	6010B	548001
240-174937-5	MW-16-06	Total Recoverable	Water	6010B	548001
240-174937-6	MW-16-05	Total Recoverable	Water	6010B	548001
MB 240-548001/1-A	Method Blank	Total Recoverable	Water	6010B	548001
LCS 240-548001/2-A	Lab Control Sample	Total Recoverable	Water	6010B	548001

Analysis Batch: 548578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-174937-1	MW-16-01	Total Recoverable	Water	6020	548001
240-174937-2	DUP-01	Total Recoverable	Water	6020	548001
240-174937-3	MW-16-02	Total Recoverable	Water	6020	548001
240-174937-4	MW-16-03	Total Recoverable	Water	6020	548001
240-174937-5	MW-16-06	Total Recoverable	Water	6020	548001
240-174937-6	MW-16-05	Total Recoverable	Water	6020	548001
MB 240-548001/1-A	Method Blank	Total Recoverable	Water	6020	548001
LCS 240-548001/3-A	Lab Control Sample	Total Recoverable	Water	6020	548001

General Chemistry

Analysis Batch: 548150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-174937-1	MW-16-01	Total/NA	Water	SM 2540C	
240-174937-2	DUP-01	Total/NA	Water	SM 2540C	
240-174937-3	MW-16-02	Total/NA	Water	SM 2540C	
240-174937-4	MW-16-03	Total/NA	Water	SM 2540C	
240-174937-5	MW-16-06	Total/NA	Water	SM 2540C	
240-174937-6	MW-16-05	Total/NA	Water	SM 2540C	
MB 240-548150/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-548150/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 548703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-174937-1 - RA	MW-16-01	Total/NA	Water	SM 2540C	
240-174937-2 - RA	DUP-01	Total/NA	Water	SM 2540C	
240-174937-3 - RA	MW-16-02	Total/NA	Water	SM 2540C	
240-174937-4 - RA	MW-16-03	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 548703 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-174937-5 - RA	MW-16-06	Total/NA	Water	SM 2540C	
240-174937-6 - RA	MW-16-05	Total/NA	Water	SM 2540C	
MB 240-548703/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-548703/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 549671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-174937-1	MW-16-01	Total/NA	Water	9056A	
240-174937-1	MW-16-01	Total/NA	Water	9056A	
240-174937-2	DUP-01	Total/NA	Water	9056A	
240-174937-2	DUP-01	Total/NA	Water	9056A	
240-174937-3	MW-16-02	Total/NA	Water	9056A	
240-174937-3	MW-16-02	Total/NA	Water	9056A	
240-174937-4	MW-16-03	Total/NA	Water	9056A	
240-174937-4	MW-16-03	Total/NA	Water	9056A	
240-174937-5	MW-16-06	Total/NA	Water	9056A	
240-174937-5	MW-16-06	Total/NA	Water	9056A	
240-174937-6	MW-16-05	Total/NA	Water	9056A	
240-174937-6	MW-16-05	Total/NA	Water	9056A	
MB 240-549671/3	Method Blank	Total/NA	Water	9056A	
LCS 240-549671/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-01 — Lab Sample ID: 240-174937-1

Date Collected: 10/17/22 12:07 — **Matrix: Water**
Date Received: 10/19/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			548001	SHB	EET CAN	10/20/22 12:00
Total Recoverable	Analysis	6010B		1	548179	KLC	EET CAN	10/21/22 23:38
Total Recoverable	Prep	3005A			548001	SHB	EET CAN	10/20/22 12:00
Total Recoverable	Analysis	6020		1	548578	RKT	EET CAN	10/24/22 13:28
Total/NA	Analysis	9056A		1	549671	JMB	EET CAN	11/01/22 09:13
Total/NA	Analysis	9056A		10	549671	JMB	EET CAN	11/01/22 09:33
Total/NA	Analysis	SM 2540C		1	548150	MS	EET CAN	10/21/22 09:51
Total/NA	Analysis	SM 2540C	RA	1	548703	MED	EET CAN	10/25/22 16:00

Client Sample ID: DUP-01 — Lab Sample ID: 240-174937-2

Date Collected: 10/17/22 00:00 — **Matrix: Water**
Date Received: 10/19/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			548001	SHB	EET CAN	10/20/22 12:00
Total Recoverable	Analysis	6010B		1	548179	KLC	EET CAN	10/21/22 23:42
Total Recoverable	Prep	3005A			548001	SHB	EET CAN	10/20/22 12:00
Total Recoverable	Analysis	6020		1	548578	RKT	EET CAN	10/24/22 13:32
Total/NA	Analysis	9056A		1	549671	JMB	EET CAN	11/01/22 09:53
Total/NA	Analysis	9056A		10	549671	JMB	EET CAN	11/01/22 10:13
Total/NA	Analysis	SM 2540C		1	548150	MS	EET CAN	10/21/22 09:51
Total/NA	Analysis	SM 2540C	RA	1	548703	MED	EET CAN	10/25/22 16:00

Client Sample ID: MW-16-02 — Lab Sample ID: 240-174937-3

Date Collected: 10/17/22 13:05 — **Matrix: Water**
Date Received: 10/19/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			548001	SHB	EET CAN	10/20/22 12:00
Total Recoverable	Analysis	6010B		1	548179	KLC	EET CAN	10/21/22 23:47
Total Recoverable	Prep	3005A			548001	SHB	EET CAN	10/20/22 12:00
Total Recoverable	Analysis	6020		1	548578	RKT	EET CAN	10/24/22 13:37
Total/NA	Analysis	9056A		1	549671	JMB	EET CAN	11/01/22 10:33
Total/NA	Analysis	9056A		10	549671	JMB	EET CAN	11/01/22 10:53
Total/NA	Analysis	SM 2540C		1	548150	MS	EET CAN	10/21/22 09:51
Total/NA	Analysis	SM 2540C	RA	1	548703	MED	EET CAN	10/25/22 16:00

Client Sample ID: MW-16-03 — Lab Sample ID: 240-174937-4

Date Collected: 10/17/22 13:51 — **Matrix: Water**
Date Received: 10/19/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			548001	SHB	EET CAN	10/20/22 12:00
Total Recoverable	Analysis	6010B		1	548179	KLC	EET CAN	10/21/22 23:51

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Client Sample ID: MW-16-03 — Lab Sample ID: 240-174937-4

Date Collected: 10/17/22 13:51 — **Matrix: Water**
Date Received: 10/19/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			548001	SHB	EET CAN	10/20/22 12:00
Total Recoverable	Analysis	6020		1	548578	RKT	EET CAN	10/24/22 13:41
Total/NA	Analysis	9056A		1	549671	JMB	EET CAN	11/01/22 11:13
Total/NA	Analysis	9056A		10	549671	JMB	EET CAN	11/01/22 11:33
Total/NA	Analysis	SM 2540C		1	548150	MS	EET CAN	10/21/22 09:51
Total/NA	Analysis	SM 2540C	RA	1	548703	MED	EET CAN	10/25/22 16:00

Client Sample ID: MW-16-06 — Lab Sample ID: 240-174937-5

Date Collected: 10/17/22 14:27 — **Matrix: Water**
Date Received: 10/19/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			548001	SHB	EET CAN	10/20/22 12:00
Total Recoverable	Analysis	6010B		1	548179	KLC	EET CAN	10/21/22 23:55
Total Recoverable	Prep	3005A			548001	SHB	EET CAN	10/20/22 12:00
Total Recoverable	Analysis	6020		1	548578	RKT	EET CAN	10/24/22 13:46
Total/NA	Analysis	9056A		1	549671	JMB	EET CAN	11/01/22 11:54
Total/NA	Analysis	9056A		10	549671	JMB	EET CAN	11/01/22 12:14
Total/NA	Analysis	SM 2540C		1	548150	MS	EET CAN	10/21/22 09:51
Total/NA	Analysis	SM 2540C	RA	1	548703	MED	EET CAN	10/25/22 16:00

Client Sample ID: MW-16-05 — Lab Sample ID: 240-174937-6

Date Collected: 10/17/22 15:41 — **Matrix: Water**
Date Received: 10/19/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			548001	SHB	EET CAN	10/20/22 12:00
Total Recoverable	Analysis	6010B		1	548179	KLC	EET CAN	10/22/22 00:00
Total Recoverable	Prep	3005A			548001	SHB	EET CAN	10/20/22 12:00
Total Recoverable	Analysis	6020		1	548578	RKT	EET CAN	10/24/22 13:50
Total/NA	Analysis	9056A		1	549671	JMB	EET CAN	11/01/22 13:14
Total/NA	Analysis	9056A		10	549671	JMB	EET CAN	11/01/22 13:34
Total/NA	Analysis	SM 2540C		1	548150	MS	EET CAN	10/21/22 09:51
Total/NA	Analysis	SM 2540C	RA	1	548703	MED	EET CAN	10/25/22 16:00

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-174937-1
Project/Site: CCR DTE RRLF HMP Uppermost Aquifer

Laboratory: Eurofins Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

MICHIGAN 190 3 8/3.8

Chain of Custody Record

MICHIGAN 190

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Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Phone (330) 497-9396 Phone (330) 497-0772

Client Information	Sampler: Jacob Krenc	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-94376-31929.1
Client Contact: Mr. Vincent Buening	Phone: 734-395-9804	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page of
Company: TRC Environmental Corporation.	PWSID:			Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			
City: Ann Arbor	TAT Requested (days):			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 179968 - 2022			
Email: vbuening@trccompanies.com	WO #: 370029.0000 P1 T2			
Project Name: CCR DTE RRLF HMP Uppermost Aquifer	Project #: 24016807			
Site: Michigan	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010 Bo, 6020 Ca, Fe	2540C_Calcd TDS, 9056A_28D Sulfate, Chloride, Fluoride	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N		
MW-16-01	10-17-22	1207	G	Water	N	N	X	X		
DUP-01	10-17-22	—	G	Water	N	N	X	X		
MW-16-02	10-17-22	1305	G	Water	N	N	X	X		
~~EB-01~~	~~10-17-22~~	~~1040~~	~~G~~	~~Water~~	N	N	X	X		
MW-16-03	10-17-22	1351	G	Water	N	N	X	X		
MW-16-06	10-17-22	1427	G	Water	N	N	X	X		
MW-16-05	10-17-22	1541	G	Water	N	N	X	X		
				Water						
				Water						
				Water						

240-174937 Chain of Custody

Possible Hazard Identification

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 10-18-22 / 1451	Company: TRC	Received by:	Date/Time: 10/18/22	Company: EENA
Relinquished by:	Date/Time: 10/18/22 1451	Company: EENA	Received by:	Date/Time: 10-19-22 940	Company: EETNC
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 01/16/2019

Eurofins - Canton Sample Receipt Form/Narrative **Login # :** 174937
Barberton Facility

Client TRC Site Name

Cooler Received on 10-19-22 Opened on 10-19-22

Cooler unpacked by: Tammy Boyd

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time **Storage Location**

Eurofins Cooler # TA Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-13 (CF +0.7 °C) Observed Cooler Temp. 3.8 °C Corrected Cooler Temp. 3.8 °C
   IR GUN #IR-15 (CF 0.0°C) Observed Cooler Temp. 3.8 °C Corrected Cooler Temp. 3.8 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?	Yes	No
10. Were correct bottle(s) used for the test(s) indicated?	Yes	No
11. Sufficient quantity received to perform indicated analyses?	Yes	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# HC286797
14. Were VOAs on the COC?	Yes	No
15. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #	Yes	No
17. Was a LL Hg or Me Hg trip blank present?	Yes	No

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-01	240-174937-A-1	Plastic 250ml - with Nitric Acid	<2			
DUP-01	240-174937-A-2	Plastic 250ml - with Nitric Acid	<2			
DUP-01	240-174937-B-2	Plastic 500ml - with Nitric Acid				
MW-16-02	240-174937-A-3	Plastic 250ml - with Nitric Acid	<2			
MW-16-03	240-174937-A-4	Plastic 250ml - with Nitric Acid	<2			
MW-16-06	240-174937-A-5	Plastic 250ml - with Nitric Acid	<2			
MW-16-05	240-174937-A-6	Plastic 250ml - with Nitric Acid	<2			

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Vincent Buening
TRC Environmental Corporation.
1540 Eisenhower Place
Ann Arbor Michigan 48108-7080

Generated 11/19/2022 1:12:17 PM Revision 1

JOB DESCRIPTION

CCR DTE RRRLFl HMP Upperrmost Aquifer

JOB NUMBER

240-175571-1

Eurofins Canton
180 S. Van Buren Avenue
Barberton OH 44203

myEOL

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-175571-1
Project/Site: CCR DTE RRRLFI HMP Upperrmost Aquifer

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 240-175571-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-175571-1

REVISION
The report being provided is a revision of the original report sent on 11/15/2022. The report (revision 1) is being revised due to the lab sample labels for samples MW-16-04 and MW-16-07 were switched..

Report revision history

Receipt
The samples were received on 10/29/2022 9:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 1.4°C, 2.1°C, 2.9°C, 3.3°C and 4.4°C

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 9056A_28D: The following sample was diluted due to the nature of the sample matrix: MW-16-07 (240-175571-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: TRC Environmental Corporation. Job ID: 240-175571-1
Project/Site: CCR DTE RRRLFI HMP Upperrmost Aquifer

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET CAN
6020	Metals (ICP/MS)	SW846	EET CAN
9056A	Anions, Ion Chromatography	SW846	EET CAN
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CAN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation. Job ID: 240-175571-1
Project/Site: CCR DTE RRRLFI HMP Upperrmost Aquifer

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-175571-1	EB-01	Water	10/26/22 10:30	10/29/22 09:20
240-175571-2	MW-16-04	Water	10/27/22 10:25	10/29/22 09:20
240-175571-3	MW-16-07	Water	10/27/22 09:20	10/29/22 09:20

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-175571-1
Project/Site: CCR DTE RRRLFI HMP Upperrmost Aquifer

Client Sample ID: EB-01 Lab Sample ID: 240-175571-1

No Detections.

Client Sample ID: MW-16-04 Lab Sample ID: 240-175571-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100		ug/L	1		6010B	Total Recoverable
Calcium	69000		1000		ug/L	1		6020	Total Recoverable
Iron	1300		100		ug/L	1		6020	Total Recoverable
Chloride	3500		50		mg/L	50		9056A	Total/NA
Fluoride	1.6		0.25		mg/L	5		9056A	Total/NA
Total Dissolved Solids	4700		50		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-07 Lab Sample ID: 240-175571-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	910		100		ug/L	1		6010B	Total Recoverable
Calcium	49000		1000		ug/L	1		6020	Total Recoverable
Iron	5900		100		ug/L	1		6020	Total Recoverable
Chloride	380		5.0		mg/L	5		9056A	Total/NA
Fluoride	1.4		0.050		mg/L	1		9056A	Total/NA
Sulfate	1.3		1.0		mg/L	1		9056A	Total/NA
Total Dissolved Solids	670		10		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: TRC Environmental Corporation.
Job ID: 240-175571-1
Project/Site: CCR DTE RRRLFI HMP Upperrmost Aquifer

Client Sample ID: EB-01
Lab Sample ID: 240-175571-1
Date Collected: 10/26/22 10:30
Matrix: Water
Date Received: 10/29/22 09:20

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100		ug/L		10/31/22 12:00	11/02/22 18:12	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		10/31/22 12:00	11/02/22 15:53	1
Iron	100	U	100		ug/L		10/31/22 12:00	11/02/22 15:53	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	1.0	U	1.0		mg/L			11/12/22 21:14	1
Fluoride (SW846 9056A)	0.050	U	0.050		mg/L			11/12/22 21:14	1
Sulfate (SW846 9056A)	1.0	U	1.0		mg/L			11/12/22 21:14	1
Total Dissolved Solids (SM 2540C)	10	U	10		mg/L			11/02/22 10:36	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-175571-1
Project/Site: CCR DTE RRRLFI HMP Upperrmost Aquifer

Client Sample ID: MW-16-04 **Lab Sample ID: 240-175571-2**
Date Collected: 10/27/22 10:25 **Matrix: Water**
Date Received: 10/29/22 09:20

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100		ug/L		10/31/22 12:00	11/02/22 18:16	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	69000		1000		ug/L		10/31/22 12:00	11/02/22 15:56	1
Iron	1300		100		ug/L		10/31/22 12:00	11/02/22 15:56	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	3500		50		mg/L			11/12/22 21:58	50
Fluoride (SW846 9056A)	1.6		0.25		mg/L			11/12/22 21:36	5
Sulfate (SW846 9056A)	5.0	U	5.0		mg/L			11/12/22 21:36	5
Total Dissolved Solids (SM 2540C)	4700		50		mg/L			11/03/22 15:29	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-175571-1
Project/Site: CCR DTE RRRLFI HMP Upperrmost Aquifer

Client Sample ID: MW-16-07 **Lab Sample ID: 240-175571-3**
Date Collected: 10/27/22 09:20 **Matrix: Water**
Date Received: 10/29/22 09:20

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	910		100		ug/L		10/31/22 12:00	11/02/22 18:20	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	49000		1000		ug/L		10/31/22 12:00	11/02/22 15:58	1
Iron	5900		100		ug/L		10/31/22 12:00	11/02/22 15:58	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	380		5.0		mg/L			11/12/22 22:41	5
Fluoride (SW846 9056A)	1.4		0.050		mg/L			11/12/22 22:19	1
Sulfate (SW846 9056A)	1.3		1.0		mg/L			11/12/22 22:19	1
Total Dissolved Solids (SM 2540C)	670		10		mg/L			11/03/22 15:29	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-549601/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 550178 — **Prep Batch: 549601**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100		ug/L		10/31/22 12:00	11/02/22 16:20	1

Lab Sample ID: LCS 240-549601/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 550178 — **Prep Batch: 549601**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			1000	1060		ug/L		106	80 - 120		

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-549601/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 550070 — **Prep Batch: 549601**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		10/31/22 12:00	11/02/22 14:49	1
Iron	100	U	100		ug/L		10/31/22 12:00	11/02/22 14:49	1

Lab Sample ID: LCS 240-549601/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 550070 — **Prep Batch: 549601**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium			25000	24700		ug/L		99	80 - 120		
Iron			5000	4800		ug/L		96	80 - 120		

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-551654/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 551654

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			11/12/22 15:05	1
Fluoride	0.050	U	0.050		mg/L			11/12/22 15:05	1
Sulfate	1.0	U	1.0		mg/L			11/12/22 15:05	1

Lab Sample ID: LCS 240-551654/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 551654

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	51.1		mg/L		102	90 - 110		
Fluoride			2.50	2.67		mg/L		107	90 - 110		
Sulfate			50.0	53.0		mg/L		106	90 - 110		

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 240-550029/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 550029

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			11/02/22 10:36	1

Lab Sample ID: LCS 240-550029/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 550029

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			388	355		mg/L		91	80 - 120		

Lab Sample ID: MB 240-550327/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 550327

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			11/03/22 15:29	1

Lab Sample ID: LCS 240-550327/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 550327

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			388	357		mg/L		92	80 - 120		

QC Association Summary

Client: TRC Environmental Corporation. Job ID: 240-175571-1
Project/Site: CCR DTE RRRLFI HMP Upperrmost Aquifer

Metals

Prep Batch: 549601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175571-1	EB-01	Total Recoverable	Water	3005A	
240-175571-2	MW-16-04	Total Recoverable	Water	3005A	
240-175571-3	MW-16-07	Total Recoverable	Water	3005A	
MB 240-549601/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-549601/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-549601/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 550070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175571-1	EB-01	Total Recoverable	Water	6020	549601
240-175571-2	MW-16-04	Total Recoverable	Water	6020	549601
240-175571-3	MW-16-07	Total Recoverable	Water	6020	549601
MB 240-549601/1-A	Method Blank	Total Recoverable	Water	6020	549601
LCS 240-549601/3-A	Lab Control Sample	Total Recoverable	Water	6020	549601

Analysis Batch: 550178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175571-1	EB-01	Total Recoverable	Water	6010B	549601
240-175571-2	MW-16-04	Total Recoverable	Water	6010B	549601
240-175571-3	MW-16-07	Total Recoverable	Water	6010B	549601
MB 240-549601/1-A	Method Blank	Total Recoverable	Water	6010B	549601
LCS 240-549601/2-A	Lab Control Sample	Total Recoverable	Water	6010B	549601

General Chemistry

Analysis Batch: 550029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175571-1	EB-01	Total/NA	Water	SM 2540C	
MB 240-550029/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-550029/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 550327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175571-2	MW-16-04	Total/NA	Water	SM 2540C	
240-175571-3	MW-16-07	Total/NA	Water	SM 2540C	
MB 240-550327/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-550327/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 551654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175571-1	EB-01	Total/NA	Water	9056A	
240-175571-2	MW-16-04	Total/NA	Water	9056A	
240-175571-2	MW-16-04	Total/NA	Water	9056A	
240-175571-3	MW-16-07	Total/NA	Water	9056A	
240-175571-3	MW-16-07	Total/NA	Water	9056A	
MB 240-551654/3	Method Blank	Total/NA	Water	9056A	
LCS 240-551654/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-175571-1
Project/Site: CCR DTE RRRLFI HMP Upperrmost Aquifer

Client Sample ID: EB-01 — Lab Sample ID: 240-175571-1

Date Collected: 10/26/22 10:30 — **Matrix: Water**
Date Received: 10/29/22 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			549601	SHB	EET CAN	10/31/22 12:00
Total Recoverable	Analysis	6010B		1	550178	KLC	EET CAN	11/02/22 18:12
Total Recoverable	Prep	3005A			549601	SHB	EET CAN	10/31/22 12:00
Total Recoverable	Analysis	6020		1	550070	RKT	EET CAN	11/02/22 15:53
Total/NA	Analysis	9056A		1	551654	JMB	EET CAN	11/12/22 21:14
Total/NA	Analysis	SM 2540C		1	550029	MS	EET CAN	11/02/22 10:36

Client Sample ID: MW-16-04 — Lab Sample ID: 240-175571-2

Date Collected: 10/27/22 10:25 — **Matrix: Water**
Date Received: 10/29/22 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			549601	SHB	EET CAN	10/31/22 12:00
Total Recoverable	Analysis	6010B		1	550178	KLC	EET CAN	11/02/22 18:16
Total Recoverable	Prep	3005A			549601	SHB	EET CAN	10/31/22 12:00
Total Recoverable	Analysis	6020		1	550070	RKT	EET CAN	11/02/22 15:56
Total/NA	Analysis	9056A		5	551654	JMB	EET CAN	11/12/22 21:36
Total/NA	Analysis	9056A		50	551654	JMB	EET CAN	11/12/22 21:58
Total/NA	Analysis	SM 2540C		1	550327	MS	EET CAN	11/03/22 15:29

Client Sample ID: MW-16-07 — Lab Sample ID: 240-175571-3

Date Collected: 10/27/22 09:20 — **Matrix: Water**
Date Received: 10/29/22 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			549601	SHB	EET CAN	10/31/22 12:00
Total Recoverable	Analysis	6010B		1	550178	KLC	EET CAN	11/02/22 18:20
Total Recoverable	Prep	3005A			549601	SHB	EET CAN	10/31/22 12:00
Total Recoverable	Analysis	6020		1	550070	RKT	EET CAN	11/02/22 15:58
Total/NA	Analysis	9056A		1	551654	JMB	EET CAN	11/12/22 22:19
Total/NA	Analysis	9056A		5	551654	JMB	EET CAN	11/12/22 22:41
Total/NA	Analysis	SM 2540C		1	550327	MS	EET CAN	11/03/22 15:29

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-175571-1
Project/Site: CCR DTE RRRLFI HMP Upperrmost Aquifer

Laboratory: Eurofins Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Phone (330) 497-9396 Phone (330) 497-0772

MICHIGAN 190

Chain of Custody Record

MICHIGAN 190

eurofins Environment Testing America

Client Information	Sampler: Andrew Whaley	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-94376-31929.1
Client Contact: Mr. Vincent Buening	Phone: 734-210-9234	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: TRC Environmental Corporation.	PWSID:			Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			
City: Ann Arbor	TAT Requested (days): STD			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 179968 - 2022			
Email: vbuening@trccompanies.com	WO #: 370029.0000 P1 T2			
Project Name: CCR DTE RRLF HMP Uppermost Aquifer	Project #: 24016807			
Site: Michigan	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010 Bo, 6020 Ca, Fe	2540C_Calcd TDS, 9056A_28D Sulfate, Chloride, Fluoride	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N		
EB-01	10/26/22	1030	G	Water	N	N	X	X		
MW-16-07	10/27/22	920	G	Water	N	N	X	X		
MW-16-04	10/27/22	1025	G	Water	N	N	X	X		
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) TRC EDD

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Andrew Whaley	10/27/22 1400	TRC			
2		10/28/22 1250	TRC		10/28/22 1250	
3		10/27/22 1430			10-29-22 9:20	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins - Canton Sample Receipt Form/Narrative Login # : ____________
Barberton Facility

Client TRC ____________ Site Name ____________ Cooler unpacked by: Mandy
Cooler Received on 10-29-22 Opened on 10-29-22

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time ____________ Storage Location ____________

Eurofins Cooler # ECM Foam Box Client Cooler Box Other ____________

Packing material used: Bubble Wrap Foam (Plastic Bag) None Other ____________

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☒ See Multiple Cooler Form
   IR GUN# IR-13 (CF +0.7 °C) Observed Cooler Temp.______°C Corrected Cooler Temp.______°C
   IR GUN #IR-15 (CF 0.0°C) Observed Cooler Temp.______°C Corrected Cooler Temp.______°C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity______ (Yes) No
   -Were the seals on the outside of the cooler(s) signed & dated? (Yes) No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes (No)
   -Were tamper/custody seals intact and uncompromised? (Yes) No NA
3. Shippers' packing slip attached to the cooler(s)? (Yes) No
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC? (Yes) No
7. Did all bottles arrive in good condition (Unbroken)? (Yes) No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? (Yes) No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? (Yes) No
11. Sufficient quantity received to perform indicated analyses? (Yes) No
12. Are these work share samples and all listed on the COC? Yes (No)
    If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? (Yes) No NA pH Strip Lot# HC286797
14. Were VOAs on the COC? Yes (No)
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this. Yes No (NA)
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #____________ Yes (No)
17. Was a LL Hg or Me Hg trip blank present? ____________ Yes (No)

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM ____________ Date ____________ by ____________ via Verbal Voice Mail Other

Concerning ____________

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page Samples processed by:

19. SAMPLE CONDITION

Sample(s) ____________ were received after the recommended holding time had expired.
Sample(s) ____________ were received in a broken container.
Sample(s) ____________ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) ____________ were further preserved in the laboratory.
Time preserved: ____________ Preservative(s) added/Lot number(s): ____________

VOA Sample Preservation - Date/Time VOAs Frozen: ____________

WI-NC-099

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
EB-01	240-175571-A-1	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-16-07	240-175571-A-2	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-16-04	240-175571-A-3	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____

Login # : ____________

Eurofins - Canton Sample Receipt Multiple Cooler Form				
Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	IR-13 **IR-15**	2.9	2.9	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 **IR-15**	4.4	4.4	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 **IR-15**	1.4	1.4	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 **IR-15**	3.3	3.3	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 **IR-15**	2.1	2.1	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
				☐ See Temperature Excursion Form

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

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Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Vincent Buening
TRC Environmental Corporation.
1540 Eisenhower Place
Ann Arbor, Michigan 48108-7080

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JOB DESCRIPTION

CCR DTE RRLF - Verification

JOB NUMBER

240-177373-1

Eurofins Canton
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

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Authorized for release by
Kris Brooks, Project Manager II
Kris.Brooks@et.eurofinsus.com
(330)966-9790

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRLF - Verification

Job ID: 240-177373-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 240-177373-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-177373-1

Receipt
The samples were received on 12/3/2022 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.3°C and 1.5°C

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 9056A_28D: The following samples were diluted due to the nature of the sample matrix: MW-16-04 (240-177373-2) and DUP-01 (240-177373-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRLF - Verification

Job ID: 240-177373-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET CAN
6020	Metals (ICP/MS)	SW846	EET CAN
9056A	Anions, Ion Chromatography	SW846	EET CAN
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CAN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRLF - Verification

Job ID: 240-177373-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-177373-1	MW-16-01	Water	12/01/22 11:15	12/03/22 08:00
240-177373-2	MW-16-04	Water	11/30/22 15:42	12/03/22 08:00
240-177373-3	MW-16-07	Water	11/30/22 16:31	12/03/22 08:00
240-177373-4	DUP-01	Water	11/30/22 00:00	12/03/22 08:00
240-177373-5	EB-01	Water	11/29/22 14:30	12/03/22 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRLF - Verification

Job ID: 240-177373-1

Client Sample ID: MW-16-01 — Lab Sample ID: 240-177373-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Calcium	96000		1000		ug/L	1		6020	Total Recoverable

Client Sample ID: MW-16-04 — Lab Sample ID: 240-177373-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100		ug/L	1		6010B	Total Recoverable
Calcium	75000		1000		ug/L	1		6020	Total Recoverable
Iron	2500		100		ug/L	1		6020	Total Recoverable
Chloride	3300		50		mg/L	50		9056A	Total/NA
Fluoride	1.4		0.25		mg/L	5		9056A	Total/NA
Total Dissolved Solids	4800		50		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-07 — Lab Sample ID: 240-177373-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	940		100		ug/L	1		6010B	Total Recoverable
Calcium	52000		1000		ug/L	1		6020	Total Recoverable
Iron	5400		100		ug/L	1		6020	Total Recoverable
Chloride	350		5.0		mg/L	5		9056A	Total/NA
Fluoride	1.2		0.050		mg/L	1		9056A	Total/NA
Sulfate	1.3		1.0		mg/L	1		9056A	Total/NA
Total Dissolved Solids	720		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-177373-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100		ug/L	1		6010B	Total Recoverable
Calcium	72000		1000		ug/L	1		6020	Total Recoverable
Iron	2700		100		ug/L	1		6020	Total Recoverable
Chloride	3400		50		mg/L	50		9056A	Total/NA
Fluoride	1.5		0.25		mg/L	5		9056A	Total/NA
Total Dissolved Solids	4700		50		mg/L	1		SM 2540C	Total/NA

Client Sample ID: EB-01 — Lab Sample ID: 240-177373-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chloride	22		1.0		mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRLF - Verification

Job ID: 240-177373-1

Client Sample ID: MW-16-01
Date Collected: 12/01/22 11:15
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177373-1
Matrix: Water

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	96000		1000		ug/L		12/05/22 12:00	12/06/22 14:01	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRLF - Verification

Job ID: 240-177373-1

Client Sample ID: MW-16-04

Date Collected: 11/30/22 15:42
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177373-2

Matrix: Water

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100		ug/L		12/05/22 12:00	12/06/22 20:35	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	75000		1000		ug/L		12/05/22 12:00	12/06/22 14:03	1
Iron	2500		100		ug/L		12/05/22 12:00	12/06/22 14:03	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	3300		50		mg/L			12/06/22 15:18	50
Fluoride (SW846 9056A)	1.4		0.25		mg/L			12/06/22 14:58	5
Sulfate (SW846 9056A)	5.0	U	5.0		mg/L			12/06/22 14:58	5
Total Dissolved Solids (SM 2540C)	4800		50		mg/L			12/05/22 09:57	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRLF - Verification

Job ID: 240-177373-1

Client Sample ID: MW-16-07

Date Collected: 11/30/22 16:31
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177373-3

Matrix: Water

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	940		100		ug/L		12/05/22 12:00	12/06/22 20:40	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	52000		1000		ug/L		12/05/22 12:00	12/06/22 14:06	1
Iron	5400		100		ug/L		12/05/22 12:00	12/06/22 14:06	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	350		5.0		mg/L			12/06/22 15:58	5
Fluoride (SW846 9056A)	1.2		0.050		mg/L			12/06/22 15:38	1
Sulfate (SW846 9056A)	1.3		1.0		mg/L			12/06/22 15:38	1
Total Dissolved Solids (SM 2540C)	720		10		mg/L			12/05/22 09:57	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRLF - Verification

Job ID: 240-177373-1

Client Sample ID: DUP-01

Date Collected: 11/30/22 00:00
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177373-4

Matrix: Water

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100		ug/L		12/05/22 12:00	12/06/22 20:52	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	72000		1000		ug/L		12/05/22 12:00	12/06/22 14:08	1
Iron	2700		100		ug/L		12/05/22 12:00	12/06/22 14:08	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	3400		50		mg/L			12/06/22 17:59	50
Fluoride (SW846 9056A)	1.5		0.25		mg/L			12/06/22 17:39	5
Sulfate (SW846 9056A)	5.0	U	5.0		mg/L			12/06/22 17:39	5
Total Dissolved Solids (SM 2540C)	4700		50		mg/L			12/05/22 09:57	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRLF - Verification

Job ID: 240-177373-1

Client Sample ID: EB-01

Date Collected: 11/29/22 14:30
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177373-5

Matrix: Water

Method: SW846 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100		ug/L		12/05/22 12:00	12/06/22 20:56	1

Method: SW846 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		12/05/22 12:00	12/06/22 14:11	1
Iron	100	U	100		ug/L		12/05/22 12:00	12/06/22 14:11	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	**22**		1.0		mg/L			12/06/22 18:19	1
Fluoride (SW846 9056A)	0.050	U	0.050		mg/L			12/06/22 18:19	1
Sulfate (SW846 9056A)	1.0	U	1.0		mg/L			12/06/22 18:19	1
Total Dissolved Solids (SM 2540C)	10	U	10		mg/L			12/06/22 08:40	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-554576/1-A
Matrix: Water
Analysis Batch: 554914

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 554576

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100		ug/L		12/05/22 12:00	12/06/22 19:20	1

Lab Sample ID: LCS 240-554576/2-A
Matrix: Water
Analysis Batch: 554914

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 554576

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			1000	1010		ug/L		101	80 - 120		

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-554576/1-A
Matrix: Water
Analysis Batch: 554839

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 554576

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000		ug/L		12/05/22 12:00	12/06/22 13:04	1
Iron	100	U	100		ug/L		12/05/22 12:00	12/06/22 13:04	1

Lab Sample ID: LCS 240-554576/3-A
Matrix: Water
Analysis Batch: 554839

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 554576

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium			25000	26900		ug/L		108	80 - 120		
Iron			5000	5180		ug/L		104	80 - 120		

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-554614/3
Matrix: Water
Analysis Batch: 554614

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			12/06/22 04:54	1
Fluoride	0.050	U	0.050		mg/L			12/06/22 04:54	1
Sulfate	1.0	U	1.0		mg/L			12/06/22 04:54	1

Lab Sample ID: LCS 240-554614/4
Matrix: Water
Analysis Batch: 554614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	49.6		mg/L		99	90 - 110		
Fluoride			2.50	2.54		mg/L		102	90 - 110		
Sulfate			50.0	51.0		mg/L		102	90 - 110		

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 240-177373-3 MS
Matrix: Water
Analysis Batch: 554614

Client Sample ID: MW-16-07
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	350		250	586		mg/L		94	80 - 120
Fluoride	1.2		12.5	14.2		mg/L		104	80 - 120
Sulfate	5.0	U	250	261		mg/L		104	80 - 120

Lab Sample ID: 240-177373-3 MSD
Matrix: Water
Analysis Batch: 554614

Client Sample ID: MW-16-07
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	350		250	587		mg/L		95	80 - 120	0	15
Fluoride	1.2		12.5	14.4		mg/L		106	80 - 120	1	15
Sulfate	5.0	U	250	262		mg/L		105	80 - 120	0	15

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 240-554533/1
Matrix: Water
Analysis Batch: 554533

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			12/05/22 09:57	1

Lab Sample ID: LCS 240-554533/2
Matrix: Water
Analysis Batch: 554533

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids			388	367		mg/L		95	80 - 120

Lab Sample ID: 240-177373-3 DU
Matrix: Water
Analysis Batch: 554533

Client Sample ID: MW-16-07
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	720			693		mg/L				3	20

Lab Sample ID: MB 240-554678/1
Matrix: Water
Analysis Batch: 554678

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10		mg/L			12/06/22 08:40	1

Lab Sample ID: LCS 240-554678/2
Matrix: Water
Analysis Batch: 554678

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids			388	363		mg/L		94	80 - 120

Metals

Prep Batch: 554576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177373-1	MW-16-01	Total Recoverable	Water	3005A	
240-177373-2	MW-16-04	Total Recoverable	Water	3005A	
240-177373-3	MW-16-07	Total Recoverable	Water	3005A	
240-177373-4	DUP-01	Total Recoverable	Water	3005A	
240-177373-5	EB-01	Total Recoverable	Water	3005A	
MB 240-554576/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-554576/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-554576/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 554839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177373-1	MW-16-01	Total Recoverable	Water	6020	554576
240-177373-2	MW-16-04	Total Recoverable	Water	6020	554576
240-177373-3	MW-16-07	Total Recoverable	Water	6020	554576
240-177373-4	DUP-01	Total Recoverable	Water	6020	554576
240-177373-5	EB-01	Total Recoverable	Water	6020	554576
MB 240-554576/1-A	Method Blank	Total Recoverable	Water	6020	554576
LCS 240-554576/3-A	Lab Control Sample	Total Recoverable	Water	6020	554576

Analysis Batch: 554914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177373-2	MW-16-04	Total Recoverable	Water	6010B	554576
240-177373-3	MW-16-07	Total Recoverable	Water	6010B	554576
240-177373-4	DUP-01	Total Recoverable	Water	6010B	554576
240-177373-5	EB-01	Total Recoverable	Water	6010B	554576
MB 240-554576/1-A	Method Blank	Total Recoverable	Water	6010B	554576
LCS 240-554576/2-A	Lab Control Sample	Total Recoverable	Water	6010B	554576

General Chemistry

Analysis Batch: 554533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177373-2	MW-16-04	Total/NA	Water	SM 2540C	
240-177373-3	MW-16-07	Total/NA	Water	SM 2540C	
240-177373-4	DUP-01	Total/NA	Water	SM 2540C	
MB 240-554533/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-554533/2	Lab Control Sample	Total/NA	Water	SM 2540C	
240-177373-3 DU	MW-16-07	Total/NA	Water	SM 2540C	

Analysis Batch: 554614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177373-2	MW-16-04	Total/NA	Water	9056A	
240-177373-2	MW-16-04	Total/NA	Water	9056A	
240-177373-3	MW-16-07	Total/NA	Water	9056A	
240-177373-3	MW-16-07	Total/NA	Water	9056A	
240-177373-4	DUP-01	Total/NA	Water	9056A	
240-177373-4	DUP-01	Total/NA	Water	9056A	
240-177373-5	EB-01	Total/NA	Water	9056A	
MB 240-554614/3	Method Blank	Total/NA	Water	9056A	
LCS 240-554614/4	Lab Control Sample	Total/NA	Water	9056A	
240-177373-3 MS	MW-16-07	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 554614 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177373-3 MSD	MW-16-07	Total/NA	Water	9056A	

Analysis Batch: 554678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-177373-5	EB-01	Total/NA	Water	SM 2540C	
MB 240-554678/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-554678/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRLF - Verification

Job ID: 240-177373-1

Client Sample ID: MW-16-01

Date Collected: 12/01/22 11:15
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177373-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554576	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 14:01

Client Sample ID: MW-16-04

Date Collected: 11/30/22 15:42
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177373-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554576	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 20:35
Total Recoverable	Prep	3005A			554576	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 14:03
Total/NA	Analysis	9056A		5	554614	JMB	EET CAN	12/06/22 14:58
Total/NA	Analysis	9056A		50	554614	JMB	EET CAN	12/06/22 15:18
Total/NA	Analysis	SM 2540C		1	554533	MS	EET CAN	12/05/22 09:57

Client Sample ID: MW-16-07

Date Collected: 11/30/22 16:31
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177373-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554576	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 20:40
Total Recoverable	Prep	3005A			554576	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 14:06
Total/NA	Analysis	9056A		1	554614	JMB	EET CAN	12/06/22 15:38
Total/NA	Analysis	9056A		5	554614	JMB	EET CAN	12/06/22 15:58
Total/NA	Analysis	SM 2540C		1	554533	MS	EET CAN	12/05/22 09:57

Client Sample ID: DUP-01

Date Collected: 11/30/22 00:00
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177373-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554576	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 20:52
Total Recoverable	Prep	3005A			554576	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 14:08
Total/NA	Analysis	9056A		5	554614	JMB	EET CAN	12/06/22 17:39
Total/NA	Analysis	9056A		50	554614	JMB	EET CAN	12/06/22 17:59
Total/NA	Analysis	SM 2540C		1	554533	MS	EET CAN	12/05/22 09:57

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRLF - Verification

Job ID: 240-177373-1

Client Sample ID: EB-01

Date Collected: 11/29/22 14:30
Date Received: 12/03/22 08:00

Lab Sample ID: 240-177373-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			554576	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6010B		1	554914	KLC	EET CAN	12/06/22 20:56
Total Recoverable	Prep	3005A			554576	SHB	EET CAN	12/05/22 12:00
Total Recoverable	Analysis	6020		1	554839	RKT	EET CAN	12/06/22 14:11
Total/NA	Analysis	9056A		1	554614	JMB	EET CAN	12/06/22 18:19
Total/NA	Analysis	SM 2540C		1	554678	MS	EET CAN	12/06/22 08:40

Laboratory References:

EET CAN = Eurofins Canton, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-177373-1
Project/Site: CCR DTE RRLF - Verification

Laboratory: Eurofins Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Phone (330) 497-9396 Phone (330) 497-0772

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing

Client Information	Sampler: Andrew Whaley	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-101769-36942.1
Client Contact: Mr. Vincent Buening	Phone: 734 210 9259	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: TRC Environmental Corporation.	PWSID:			Job #:
Address: 1540 Eisenhower Place	Due Date Requested:			
City: Ann Arbor	TAT Requested (days): Three (3)			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 179968 - 2022			
Email: vbuening@trccompanies.com	WO #: 370029.0000 P1 T2			
Project Name: CCR DTE RRLF - Verification	Project #: 24016807			
Site: Michigan	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020 - Metals - Ca	6010B Bo, 6020 Ca, Fe	2540C_Calcd - TDS	9056A_28D - Chloride, Fluoride and Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	N		
MW-16-01	12.1.22	1115	G	Water	N	N	X				1	3 Day TAT
MW-16-04	11.30.22	1542	G	Water	N	N		X	X	X	3	
MW-16-07	11.30.22	1631	G	Water	N	N		X	X	X	3	
DUP-01	11.30.22	—	G	Water	N	N		X	X	X	3	
~~EB-01~~ AW	~~11.29.22~~	~~1430~~	~~G~~	~~Water~~	~~N~~	~~N~~	~~X~~ AW	~~X~~	~~X~~	~~X~~	~~3~~	See below
EB-01	11.29.22	1430	G	water	N	N		X	X	X	3	

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

240-177373 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Andrew Whaley 12.1.22	Date/Time: 12.1.22 1530	Company: TRC	Received by: [signature]	Date/Time: 12-2-22 8:00	Company: ETA
Relinquished by: [signature]	Date/Time: 12/2/22 1208	Company: TRC	Received by: [signature]	Date/Time: 12/2/22 1[illegible]	Company: [illegible]
Relinquished by: [signature]	Date/Time: 12/2/22 1210	Company: Cn	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 01/16/2019

Eurofins - Canton Sample Receipt Form/Narrative Login # :_____
Barberton Facility

Client TRC Site Name_____ Cooler unpacked by: Charles

Cooler Received on 12-3-22 Opened on 12-3-22

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other_____

Receipt After-hours: Drop-off Date/Time_____ Storage Location_____

Eurofins Cooler # TA Foam Box Client Cooler Box Other_____

Packing material used: ~~Bubble Wrap~~ Foam ~~Plastic Bag~~ None Other_____

COOLANT: ~~Wet Ice~~ Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt N/A See Multiple Cooler Form
   IR GUN # IR-13 (CF **-0.2** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN # IR-16 (CF **-0.1**°C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN # IR-17 (CF **-0.3**°C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity_____	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?		
10. Were correct bottle(s) used for the test(s) indicated?	Yes	No
11. Sufficient quantity received to perform indicated analyses?	Yes	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# **HC286797**
14. Were VOAs on the COC?	Yes	No
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____	Yes	No
17. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s):_____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-01	240-177373-A-1	Plastic 250ml - with Nitric Acid	<2			
MW-16-04	240-177373-C-2	Plastic 500ml - with Nitric Acid	<2			
MW-16-07	240-177373-C-3	Plastic 500ml - with Nitric Acid	<2			
DUP-01	240-177373-C-4	Plastic 500ml - with Nitric Acid	<2			
EB-01	240-177373-C-5	Plastic 500ml - with Nitric Acid	<2			

Login # : ______________

Eurofins - Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
EC (circled) Client Box Other	IR-13 IR-16 (circled) IR-17	1.4	1.3	Wet Ice (circled) Blue Ice Dry Ice Water None
EC (circled) Client Box Other	IR-13 IR-16 (circled) IR-17	1.6	1.5	Wet Ice (circled) Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR-13 IR-16 IR-17			Wet Ice Blue Ice Dry Ice Water None
				☐ See Temperature Excursion Form

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

Appendix C
Data Quality Reviews

Laboratory Data Quality Review
Groundwater Monitoring Event April 2022
DTE Electric Company Range Road Landfill (DTE RRLF)

Groundwater samples were collected by TRC for the April 2022 sampling event. Samples were analyzed for anions, total recoverable boron, total recoverable calcium and iron, and total dissolved solids by Eurofins-Environment Testing America (Eurofins), located in Barberton, Ohio. The laboratory analytical results are reported in laboratory report 240-165665-1.

During the April 2022 sampling event, a groundwater sample was collected from each of the following wells:

- MW-16-01
- MW-16-02
- MW-16-03
- MW-16-04
- MW-16-05
- MW-16-06
- MW-16-07

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Chloride, Fluoride, Sulfate)	SW846 9056A
Total Recoverable Boron	SW846 3005A/6010B
Total Recoverable Calcium and Iron	SW846 3005A/6020
Total Dissolved Solids	SM 2540C

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2020). The following items were included in the evaluation of the data:

- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks and equipment blanks, where applicable. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs). The LCSs are used to assess the accuracy of the analytical method using a clean matrix;
- Data for matrix spike and matrix spike duplicate samples (MS/MSDs), when performed on project samples. The MS/MSDs are used to assess the accuracy and precision of the analytical method using a sample from the dataset;

- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are used to assess the precision of the analytical method using a sample from the dataset;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes; and
- Overall usability of the data.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- Appendix III constituents and iron will be utilized for the purposes of a detection monitoring program.
- Data are usable for the purposes of the detection monitoring program.

QA/QC Sample Summary

- Target analytes were not detected in the method blanks.
- Target analytes were not detected in the equipment blank (EB-01).
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were performed on sample MW-16-01 for total recoverable boron, sample MW-16-02 for total recoverable calcium and iron, and sample EB-01 for anions. The percent recoveries (%Rs) and relative percent differences (RPDs) for the MS/MSD analyses met the method acceptance criteria.
- DUP-01 corresponds with MW-16-06; RPDs between the parent and duplicate sample were within the QC limits with the following exception.
  - The RPD for sulfate (66%) was above acceptance criteria. Positive and non-detect results for sulfate in all groundwater samples are potentially uncertain as summarized in the attached table, Attachment 1.
- Sample MW-16-04 was non-detect for sulfate at 5.0 mg/L, which is above the QAPP-required RL of 1.0 mg/L for sulfate, due to high concentrations of other anions.

Laboratory Data Quality Review
Groundwater Monitoring Event May 2022
DTE Electric Company Range Road Landfill (DTE RRLF) Verification

A groundwater sample was collected by TRC for the May 2022 sampling event. The sample was analyzed for total recoverable calcium and sulfate by Eurofins-Environment Testing America (Eurofins), located in Barberton, Ohio. The laboratory analytical results are reported in laboratory report 240-167449-1.

During the May 2022 sampling event, a groundwater sample was collected from the following well:

- MW-16-05

The sample was analyzed for the following constituents:

Analyte Group	Method
Sulfate	SW846 9056A
Total Recoverable Calcium	SW846 3005A/6020

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2020). The following items were included in the evaluation of the data:

- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks and equipment blanks, where applicable. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs). The LCSs are used to assess the accuracy of the analytical method using a clean matrix;
- Data for matrix spike and matrix spike duplicate samples (MS/MSDs), when performed on project samples. The MS/MSDs are used to assess the accuracy and precision of the analytical method using a sample from the dataset;
- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are used to assess the precision of the analytical method using a sample from the dataset;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes; and

- Overall usability of the data.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- Appendix III constituents will be utilized for the purposes of a detection monitoring program.
- Data are usable for the purposes of the detection monitoring program.

QA/QC Sample Summary

- Target analytes were not detected in the method blanks.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were not performed on a sample from this sample set.
- The field duplicate pair samples were DUP-01 and MW-16-05 for total recoverable calcium and sulfate; the relative percent differences (RPDs) between the parent and duplicate sample were within the QC limits.

Laboratory Data Quality Review
Groundwater Monitoring Event October 2022
DTE Electric Company Range Road Landfill (DTE RRLF)

Groundwater samples were collected by TRC for the October 2022 sampling event. Samples were analyzed for anions, total recoverable metals, and total dissolved solids by Eurofins Environment Testing, located in Barberton, Ohio. The laboratory analytical results are reported in laboratory reports 240-174937-1 and 240-175571-1.

During the October 2022 sampling event, a groundwater sample was collected from each of the following wells:

- MW-16-01
- MW-16-02
- MW-16-03
- MW-16-04
- MW-16-05
- MW-16-06
- MW-16-07

Each sample was analyzed for the following constituents:

Analyte Group	Method
Anions (Chloride, Fluoride, Sulfate)	SW846 9056A
Total Recoverable Boron	SW846 3005A/6010B
Total Recoverable Calcium and Iron	SW846 3005A/6020
Total Dissolved Solids (TDS)	SM 2540C

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2020). The following items were included in the evaluation of the data:

- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks and equipment blanks. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs). The LCSs are used to assess the accuracy of the analytical method using a clean matrix;
- Data for matrix spike and matrix spike duplicate samples (MS/MSDs), where applicable. The MS/MSDs are used to assess the accuracy and precision of the analytical method using a sample from the dataset;
- Data for laboratory duplicates, where applicable. The laboratory duplicates are used to assess the precision of the analytical method using a sample from the dataset;

- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes; and
- Overall usability of the data.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- Appendix III constituents will be utilized for the purposes of a detection monitoring program.
- Data are usable for the purposes of the detection monitoring program.

QA/QC Sample Summary

- There was one equipment blank submitted with this dataset (EB-01). No target analytes were detected in the equipment blank.
- Target analytes were not detected in the method blanks.
- Samples MW-16-01, DUP-01, MW-16-02, MW-16-03, MW-16-06, and MW-16-05 were analyzed one day outside of the holding time for TDS due to issues with the LCS. The results of the original analyses were reported and should be used for project objectives; therefore, there was no adverse effect on the usability of the data due to the holding time exceedance.
- Samples EB-01, MW-16-04, and MW-16-07 were analyzed between six minutes and six hours outside of the 7-day holding time. Since samples were analyzed on the 7th day after collection, there was no adverse effect on the usability of the data due to the holding time exceedance.
- LCS recoveries for all target analytes were within laboratory control limits with the following exception. The recovery of TDS in LCS 240-548150/2 (166%) associated with the original TDS analyses of samples MW-16-01, DUP-01, MW-16-02, MW-16-03, MW-16-06, and MW-16-05 exceeded QC limits (80-120%). The laboratory re-analyzed these groundwater samples outside of the holding time due to this issue; the LCS recovery associated with the reanalyses was within QC limits. The results of the original TDS analyses should be used for project objectives. Therefore, the positive results for TDS from the original analyses of samples MW-16-01, DUP-01, MW-16-02, MW-16-03, MW-16-06, and MW-16-05 should be considered estimated with a potential high bias as summarized in Attachment A.
- MS/MSD analyses were not performed for these sample sets.
- Laboratory duplicate analysis was not performed for these sample sets.
- The field duplicate pair samples were MW-16-01 and DUP-01; RPDs between the parent and duplicate sample were within the QC limits.

- The nondetect RL (5.0 mg/L) for sulfate in sample MW-16-04 was above the QAPP-specified RL (1.0 mg/L) due to a 5-fold dilution performed due to an elevated concentration of chloride.

Attachment A
Summary of Data Non-Conformances for Groundwater Monitoring Event Analytical Data
DTE Electric Company Range Road Landfill (DTE RRLF)
Ann Arbor, Michigan

Samples	Collection Date	Analyte	Non-Conformance/Issue
MW-16-01	10/17/2022	TDS	LCS recoveries exceeded QC limits, positive result should be considered estiamted with a potential high bias.
DUP-01	10/17/2022		
MW-16-02	10/17/2022		
MW-16-03	10/17/2022		
MW-16-06	10/17/2022		
MW-16-05	10/17/2022		

Laboratory Data Quality Review
Groundwater Monitoring Event November and December 2022
DTE Electric Company Range Road Landfill (DTE RRLF)

Groundwater samples were collected by TRC for the November and December 2022 sampling event. Samples were analyzed for anions, total recoverable metals, and total dissolved solids by Eurofins Environment Testing, located in Barberton, Ohio. The laboratory analytical results are reported in laboratory report 240-177373-1.

During the November and December 2022 sampling event, a groundwater sample was collected from each of the following wells:

- MW-16-01
- MW-16-04
- MW-16-07

Each sample was analyzed for one or more of the following constituents:

Analyte Group	Method
Anions (Chloride, Fluoride, Sulfate)	SW846 9056A
Total Recoverable Boron	SW846 3005A/6010B
Total Recoverable Calcium and Iron	SW846 3005A/6020
Total Dissolved Solids (TDS)	SM 2540C

TRC reviewed the laboratory data to assess data usability. The following sections summarize the data review procedure and the results of the review.

Data Quality Review Procedure

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2020). The following items were included in the evaluation of the data:

- Sample receipt, as noted in the cover page or case narrative;
- Technical holding times for analyses;
- Reporting limits (RLs) compared to project-required RLs;
- Data for method blanks and equipment blanks. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs). The LCSs are used to assess the accuracy of the analytical method using a clean matrix;
- Data for matrix spike and matrix spike duplicate samples (MS/MSDs), where applicable. The MS/MSDs are used to assess the accuracy and precision of the analytical method using a sample from the dataset;
- Data for laboratory duplicates, where applicable. The laboratory duplicates are used to assess the precision of the analytical method using a sample from the dataset;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes; and

- Overall usability of the data.

This data usability report addresses the following items:

- Usability of the data if quality control (QC) results suggest potential problems with all or some of the data;
- Actions regarding specific QC criteria exceedances.

Review Summary

The data quality objectives and laboratory completeness goals for the project were met, and the data are usable for their intended purpose. A summary of the data quality review, including non-conformances and issues identified in this evaluation are noted below.

- Appendix III constituents and iron will be utilized for the purposes of a detection monitoring program.
- Data are usable for the purposes of the detection monitoring program.

QA/QC Sample Summary

- There was one equipment blank submitted with this dataset (EB-01). Chloride was detected in the equipment blank (22 mg/L). Chloride was ≤10x the blank concentration in all groundwater samples when the dilution factors were taken in consideration; results may be biased high due to equipment blank contamination as summarized in the attached table, Attachment A.
- Target analytes were not detected in the method blanks.
- LCS recoveries for all target analytes were within laboratory QC limits.
- MS/MSD analyses was performed on sample MW-16-07 for anions. All criteria were met.
- Laboratory duplicate analysis was performed for TDS on sample MW-16-07. All criteria were met.
- The field duplicate pair samples were MW-16-04 and DUP-01; relative percent differences between the parent and duplicate sample were within the QC limits.
- The RL for sulfate (5 mg/L) was greater than the QAPP-specified RL (1 mg/L) in samples MW-16-04 and DUP-01 due to a 5-fold dilution likely performed due to elevated concentrations of chloride.

Attachment A
Summary of Data Non-Conformances for Groundwater Monitoring Event Analytical Data
DTE Electric Company Range Road Landfill (DTE RRLF)
China Township, Michigan

Samples	Collection Date	Analyte	Non-Conformance/Issue
MW-16-04	11/30/2022	Chloride	Results may be biased high due to equipment blank contamination
MW-16-07	11/30/2022		
DUP-01	11/30/2022		