2021 Annual Groundwater Monitoring Report

Belle River Power Plant Bottom Ash Basins
4505 King Road
China Township, Michigan

January 2022

Prepared For:

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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) Belle River Power Plant (BRPP) CCR Bottom Ash Basins (BABs) 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 2021 activities at the BRPP BABs CCR unit.

DTE Electric remained in detection monitoring at the BRPP BABs CCR Unit in 2021. The semiannual detection monitoring events for 2021 were completed in April and October 2021 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 detection monitoring parameters to determine if concentrations in detection monitoring well samples exceed prediction limits. Detection monitoring data that have been collected and evaluated in 2021 are presented in this report.

Potential SSIs over prediction limits were noted for several Appendix III constituents in one or more downgradient wells during the April and October 2021 monitoring events. 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 in groundwater quality as documented in an ASD for the April 2021 monitoring event and not attributable to the BRPP BABs CCR unit. DTE Electric is in the process of performing an ASD to further evaluate a calcium SSI at MW-16-09 for the October 2021 monitoring event. Therefore, detection monitoring will be continued at the BRPP BABs CCR unit in accordance with §257.94 of the CCR Rule pending completion of a successful ASD. With the very thick continuous silty clay-rich confining unit beneath the BRPP BABs CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from BRPP operations that began in the 1980s.

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) Belle River Power Plant (BRPP) CCR Bottom Ash Basins (BABs). 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 Environmental Corporation (TRC), has prepared this Annual Groundwater Monitoring Report for calendar year 2021 activities at the BRPP BABs CCR unit (2021 Annual Report).

This 2021 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 2021 semiannual groundwater monitoring events for the BRPP BABs CCR unit. Detection monitoring for these events continued to be performed in accordance with the *CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company Belle River Power Plant Bottom Ash Basins and Diversion Basin* (QAPP) (TRC, July 2016; revised August 2017) and statistically evaluated per the 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.

Additional site characterization was completed in late 2020 and in 2021 including additional soil borings, Cone Penetrometer Testing (CPT), soil sample collection for additional clay-rich soil, laboratory hydraulic conductivity testing, and additional slug testing (to measure the hydraulic conductivity of the uppermost aquifer in wells not previously tested) in support of the Preliminary Alternative Liner Demonstration that was submitted to the EPA on November 30, 2021 (Geosyntec, 2021). The PALD concludes that there is no reasonable probability that water from the BABs will cause releases to groundwater throughout the active life of the CCR unit at concentrations that will exceed the groundwater protection standard at the waste boundary.

1.2 Site Overview

The BRPP is located in Section 13, Township 4 North, Range 16 East, at 4505 King Road, China Township in St. Clair County, Michigan. The BRPP was constructed in the early 1980s with plant operations beginning in 1984. Prior to Detroit Edison Company's operations commencing in the 1980s, the BRPP property was generally wooded and farmland. The property has been used continuously as a coal fired power plant since Detroit Edison Company (now DTE Electric) began power plant operations at BRPP in 1984 and is generally constructed over a natural clay-rich soil base. The BABs have been in use by the BRPP since it began operation and have collected CCR bottom ash that is periodically cleaned out and either sold for beneficial reuse or disposed of at the Range Road Landfill (RRLF).

The BRPP BABs are two adjacent physical sedimentation basins that are slightly raised CCR surface impoundments referred to as the North and South BABs, located north of the BRPP. These are considered one CCR unit. The BABs receive sluiced bottom ash and other process flow water from the power plant. Discharge water from each BAB flows over an outlet weir that gravity flows to a site storm water conveyance network of ditches and pipes, then flows into the diversion basin (DB) CCR unit, which is monitored as a separate CCR unit in accordance with the CCR Rule and addressed in a separate 2021 Annual Report.

The DB is an incised CCR surface impoundment located east of the BRPP. Water flows into the DB from the North and South BABs through a network of pipes and ditches. The DB discharges to the St. Clair River with other site wastewater in accordance with a National Pollution Discharge Elimination System (NPDES) permit.

1.3 Geology/Hydrogeology

The BRPP BABs CCR unit is located approximately one-mile west of the St. Clair River. The BRPP BABs CCR unit is underlain by more than 100 feet of unconsolidated sediments, with the lower confining Bedford Shale generally encountered from 140 to 150 feet below ground surface (bgs). In general, the BRPP BABs CCR unit is initially underlain by at least 90 to as much as 130 feet of laterally extensive low hydraulic conductivity silty clay-rich deposits (TRC, 2017 and Geosyntec, 2021). The depth to the top of the confined sand-rich uppermost aquifer encountered immediately beneath the silty clay-rich deposits varies up to 50 feet within the monitoring well network and rapidly thins to the south and east of the BABs and pinches out (e.g., no longer present) to the southeast in the vicinity of SB-16-01 (Figure 1). Consequently, the uppermost aquifer is not laterally contiguous across the entire BRPP BABs CCR unit, and not present beneath the southeastern corner of the BABs.

The variability in the depth to the uppermost aquifer is a consequence of the heterogeneity of the glacial deposits and is driven by the lateral discontinuity of the sand outwash within the encapsulating fine-grained, silty clay till that confines the uppermost aquifer. There is an apparent lack of interconnection and/or significant vertical variation between the uppermost aquifer sand unit(s) encountered across the BRPP BABs CCR unit as demonstrated by the extensive amount of time (months) it took for water levels in monitoring well MW-16-02 to reach equilibrium after well construction and development (TRC, 2017).

Given the horizontally expansive clay with substantial vertical thickness that isolates the uppermost aquifer from the BRPP BABs CCR unit, the heterogeneity of the glacial deposits (with the top of the uppermost aquifer elevation across the BABs, where present varying up to 46 feet vertically), the no flow boundary where no sand or gravel is present in the southeastern portion of the BABs CCR unit area, and the apparent lack of hydraulic interconnectedness of the uppermost aquifer encountered at the BABs in some areas, it is not appropriate to infer horizontal flow direction or gradients across the BRPP BABs CCR unit.

2.0 Groundwater Monitoring

2.1 Monitoring Well Network

A groundwater monitoring system has been established for the BRPP BABs CCR unit as detailed in the Groundwater Monitoring System Summary Report – DTE Electric Company Belle River Power Plant Bottom Ash Basins and Diversion Basin Coal Combustion Residual Units (GWMS Report) (TRC, October 2017). The detection monitoring well network for the BABs CCR unit currently consists of five monitoring wells that are screened in the uppermost aquifer. Monitoring wells MW-16-01 through MW-16-04 and MW-16-09 are located around the north, east and south perimeter of the BABs and provide data on both background and downgradient groundwater quality that has not been affected by the CCR unit (total of five 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 groundwater 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 groundwater detection monitoring event for 2021 was performed during April 8 and 9, 2021 by TRC personnel and samples were analyzed by Eurofins TestAmerica (Eurofins) in accordance with the QAPP. Static water elevation data were collected at all five monitoring well locations. Groundwater samples were collected from the five detection monitoring wells for the Appendix III indicator parameters and field parameters. A summary of the groundwater data collected during the April 2021 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 2021 was performed during October 12 and 13, 2021 by TRC personnel and samples were analyzed by Eurofins in accordance with the QAPP. Static water elevation data were collected at all five monitoring well locations. Groundwater samples were collected from the five detection monitoring wells for the Appendix III indicator parameters and field parameters. A summary of the groundwater data collected during the October 2021 event is provided on Table 1 (static groundwater elevation data), Table 2 (field data), and Table 4 (analytical results). The laboratory analytical reports are included in Appendix A.

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 B

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 that isolates the uppermost aquifer from the BRPP BABs CCR unit; the heterogeneity of the glacial deposits (with the top of the uppermost aquifer elevation across the BABs; where present, varying up to 46 feet vertically); the no flow boundary where no sand or gravel is present in the southeastern portion of the BRPP BABs CCR unit area; and the apparent lack of hydraulic interconnectedness of the uppermost aquifer encountered at the BABs 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 2021 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 2021 sampling event are provided on Table 1 and are summarized in plan view on Figure 4.

Groundwater elevation data collected during the 2021 sampling events show that groundwater conditions within the uppermost aquifer are consistent with previous monitoring events and continue to demonstrate that the downgradient wells are appropriately positioned to detect the presence of Appendix III parameters that could potentially migrate from the BRPP BABs CCR unit.

3.0 Statistical Evaluation

3.1 Establishing Background Limits

As discussed in the Stats Plan, intrawell statistical methods for the BABs CCR unit 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 presence of no flow boundary on the southeast 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 five established detection monitoring wells (MW-16-01 through MW-16-04 and MW-16-09). 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 BRPP BABs 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 over time. The Appendix III prediction limits for the BRPP BAB were updated in December 2021 to incorporate additional data collected since 2017 as presented in the December 15, 2021 *Technical Memorandum, Prediction Limit Update – DTE Electric Company, Belle River Power Plant Bottom Ash Basin* included as Appendix C. The updated prediction limits were used to statistically evaluate the Appendix III indicator parameter data for the second semiannual 2021 detection monitoring event.

3.2 Data Comparison to Background Limits – First Semiannual Event (April 2021)

The concentrations of the indicator parameters in each of the detection monitoring wells (MW-16-01 through MW-16-04 and MW-16-09) were compared to their respective statistical background limits calculated from the background data collected from each individual well (i.e., monitoring data from MW-16-01 is compared to the background limit developed using the background dataset from MW-16-01, and so forth).

The comparisons of the April 2021 monitoring event data to background limits are presented on Table 3. The statistical evaluation of the April 2021 Appendix III indicator parameters showed potential initial SSIs over background for:

- Sulfate at MW-16-01 and MW-16-04; and
- pH at MW-16-09.

The sulfate exceedance at MW-16-04 during the First Semiannual Event in April 2021 has previously been demonstrated to be from natural variability and is not from a release from the CCR unit as presented in the August 2019 ASD that was included in the 2019 Annual Report.

3.3 Verification Resampling for the First 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 2021 event was conducted on May 17 and 18, 2021 by TRC personnel. Groundwater samples were collected for sulfate at MW-16-01 and field parameters at MW-16-09 to verify pH, in accordance with the QAPP. A summary of the analytical results collected during the resampling event is provided on Table 3. The associated data quality review is included in Appendix B.

The verification results for pH at MW-16-09 are within the prediction limits, consequently the initial potential SSI for pH during the April 2021 detection monitoring event is not confirmed. 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 pH for the April 2021 detection monitoring event.

The verification results for sulfate at MW-16-01 are above the prediction limit, consequently the initial potential SSI from the April 2021 event is confirmed at this location.

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 prepared an ASD dated August 16, 2021, *Alternative Source Demonstration, First Semiannual 2021 Groundwater Sampling Event Belle River Power Plant Bottom Ash Basins Coal Combustion Residual Unit 4505 King Road, China Township, Michigan* (April 2021 ASD). This ASD demonstrates that the SSI confirmed above is from natural variability in groundwater quality and not from a release of the BRPP BABs CCR unit and is provided in Appendix D. As such, detection monitoring continued at the BRPP BABs CCR unit in 2021.

3.4 Data Comparison to Background Limits – Second Semiannual Event (October 2021)

The concentrations of the indicator parameters in each of the detection monitoring wells (MW-16-01 through MW-16-04 and MW-16-09) were compared to their respective statistical background limits calculated from the background data collected from each individual well (i.e., monitoring data from MW-16-01 is compared to the background limit developed using the background dataset from MW-16-01, and so forth).

The comparisons of the October 2021 monitoring event are presented on Table 4. The statistical evaluation of the October 2021 Appendix III indicator parameters showed a potential initial SSI over background for:

- Calcium at MW-16-09

The TDS exceedance at MW-16-01 during the Second Semiannual Event in October 2021 has previously been demonstrated to be from natural variability and is not from a release from the CCR unit as presented in the August 2019 ASD that was included in the 2019 Annual Report and is still applicable. The sulfate exceedance at MW-16-01 has previously been demonstrated to be from natural variability and is not from a release from the CCR unit as presented in the April 2021 ASD that is included in this report (Appendix D).

3.5 Verification Resampling for the Second Semiannual Event

Verification resampling for the October 2021 event was conducted on December 6 and 7, 2021 by TRC personnel. A groundwater sample was collected for calcium at MW-16-09 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 B

The verification sampling results for calcium at MW-16-09 are above the prediction limit, consequently the initial potential SSI from the October 2021 event is confirmed at this location. Per §257.94(e), DTE Electric is in the process of performing an ASD to further evaluate the calcium SSI at MW-16-09.

4.0 Conclusions and Recommendations

Potential SSIs over background limits were noted for a few Appendix III constituents in one or more downgradient wells during the April and October 2021 monitoring events. The April 2021 potential SSIs were either not statistically significant (i.e. verification sampling did not confirm the exceedance) or the observed concentrations were demonstrated to be a result of natural variability in groundwater quality and not attributable to the BRPP BABs CCR unit, as documented in an ASD that is still applicable.

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, 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 SSI over the background limit noted during the October 2021 event, DTE plans to prepare an ASD to evaluate whether a source other than the BRPP BAB CCR unit caused the SSI.

As discussed above and in the GWMS Report and PALD, with the presence of the vertically and horizontally extensive clay-rich confining till beneath the BRPP BABs CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from operations. Therefore, detection monitoring will be continued at the BRPP BABs CCR unit in accordance with §257.94 pending completion of a successful ASD .

No corrective actions were performed in 2021. The next semiannual monitoring event is scheduled for the second calendar quarter of 2022.

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
Belle River Power Plant Bottom Ash Basins
China Township, Michigan

CERTIFICATION

I hereby certify that the annual groundwater and corrective action report presented within this document for the BRPP BABs 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, 2022	

January 31, 2022

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 2021
Belle River Power Plant Bottom Ash Basins – RCRA CCR Monitoring Program
China Township, Michigan

Well ID	MW-16-01		MW-16-02		MW-16-03		MW-16-04		MW-16-09	
Date Installed	3/17/2016		3/15/2016		6/1/2016		3/8/2016		6/2/2016	
TOC Elevation	590.06		588.94		590.66		590.51		590.80	
Geologic Unit of Screened Interval	Sand		Sand		Silty Sand		Sand		Sand	
Screened Interval Elevation	496.3 to 491.3		494.3 to 489.3		456.0 to 451.0		468.5 to 463.5		452.3 to 447.3	
Unit	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
04/08/2021	15.62	574.44	13.21	575.73	15.92	574.74	16.10	574.41	16.12	574.68
10/12/2021	15.50	574.56	13.51	575.43	16.12	574.54	16.00	574.51	16.26	574.54

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 2021
Belle River Power Plant Bottom Ash Basins – 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	4/8/2021	1.57	-183.6	7.6	1,750	12.0	2.91
	5/18/2021[(1)]	1.55	-51.1	7.6	1,267	11.5	2.43
	10/12/2021	0.62	-140.0	7.6	1,389	14.3	1.06
MW-16-02	4/8/2021	1.70	-144.1	7.5	1,347	14.5	2.32
	10/12/2021	1.59	-112	7.6	1,183	18.1	3.57
MW-16-03	4/8/2021	1.49	-182.8	7.7	1,989	13.5	1.76
	10/12/2021	0.73	-132.9	7.6	1,600	15.1	0.78
MW-16-04	4/9/2021	1.57	-139.5	7.6	2,059	13.5	15.0
	10/13/2021	0.51	-151.9	7.6	1,403	13.1	3.0
MW-16-09	4/9/2021	1.53	-160.5	7.5	3,500	13.6	17.0
	5/18/2021[(1)]	1.47	-120.2	8.0	2,406	12.9	82.3
	10/12/2021	0.52	-172.8	7.8	2,530	14.5	110.0
	12/6/2021[(2)]	1.09	-134.8	7.7	2,240	9.3	93.0

Notes:

mg/L - milligrams per liter.

mV - milliVolt.

SU - standard unit.

umhos/cm - micro-mhos per centimeter.

deg C - degrees celcius.

NTU - nephelometric turbidity units.

(1) Results shown for verification sampling performed on 5/18/2021.

(2) Results shown for verification sampling performed on 12/6/2021.

Table 3
Comparison of Appendix III Parameter Results to Background Limits – April and May 2021
Belle River Power Plant BABs – RCRA CCR Monitoring Program
China Township, Michigan

Sample Location:		MW-16-01			MW-16-02		MW-16-03		MW-16-04		MW-16-09		
Sample Date:		4/8/2021	5/18/2021	PL	4/8/2021	PL	4/8/2021	PL	4/9/2021	PL	4/9/2021	5/18/2021	PL
Constituent	Unit	Data			Data		Data		Data		Data		
Appendix III													
Boron	ug/L	1,000	--	1,300	1,100	1,300	1,100	1,300	1,000	1,100	1,500	--	1,900
Calcium	ug/L	41,000	--	45,000	49,000	59,000	34,000	36,000	51,000	64,000	38,000	--	41,000
Chloride	mg/L	450	--	530	360	400	560	690	470	520	940	--	1,100
Fluoride	mg/L	1.7	--	1.9	1.2	1.3	1.8	1.9	1.7	1.9	1.5	--	1.8
pH, Field	SU	7.6	--	7.6 - 8.1	7.5	7.4 - 8.0	7.7	7.5 - 8.3	7.6	7.5 - 8.4	**7.5**	8.0	7.7 - 8.7
Sulfate	mg/L	**23**	**12**	8.1	3.4	20	1.4	14	**66**(1)	18	15	--	40
Total Dissolved Solids	mg/L	850	--	950	750	890	1,100	1,100	1,100	1,100	1,600	--	2,000

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

Table 4
Comparison of Appendix III Parameter Results to Background Limits – October and December 2021
Belle River Power Plant BABs – RCRA CCR Monitoring Program
China Township, Michigan

Sample Location:		MW-16-01		MW-16-02		MW-16-03		MW-16-04		MW-16-09		
Sample Date:		10/12/2021	PL[1]	10/12/2021	PL[1]	10/12/2021	PL[1]	10/13/2021	PL[1]	10/12/2021	12/6/2021	PL[1]
Constituent	Unit	Data		Data		Data		Data		Data		
Appendix III												
Boron	ug/L	1,100	1,300	1,200	1,300	1,000	1,200	990	1,200	1,500	--	1,900
Calcium	ug/L	43,000	44,000	56,000	58,000	31,000	35,000	46,000	60,000	**44,000**	**45,000**	42,000
Chloride	mg/L	460	510	360	390	580	800	490	520	970	--	1,100
Fluoride	mg/L	1.7	1.9	1.2	1.3	1.8	1.9	1.7	1.8	1.5	--	1.7
pH, Field	SU	7.6	7.0 - 8.1	7.6	7.3 - 8.0	7.6	7.5 - 8.2	7.6	7.6 - 8.2	7.8	7.7	7.7 - 8.6
Sulfate	mg/L	**25[2]**	14	5.1	15	1.7	5.9	28	36	13	--	37
Total Dissolved Solids	mg/L	**1,000[3]**	970	720	910	1,100	1,100	1,100	1,100	1,700	--	2,000

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) - Prediction limits updated December 15, 2021.

(2) - Concentration addressed through First 2021 Semiannual alternative source demonstration dated 8/16/2021.

(3) - Concentration addressed through First 2019 Semiannual alternative source demonstration dated 8/8/2019.

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
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TRC - GIS

PROJECT:

DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT
4505 KING ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:

SITE LOCATION MAP

DRAWN BY:	A. FOJTIK
CHECKED BY:	J. KRENZ
APPROVED BY:	V. BUENING
DATE:	JANUARY 2022
PROJ. NO.:	413591.0003
FILE:	413591-0003-008.mxd

FIGURE 1

E:\Projects\DTE\CCR_Sites\2017_265996\413591-0003-008.mxd -- Saved By: AFOJTIK on 11/24/2021, 14:14:43 PM

LEGEND

- SOIL BORING
- MONITORING WELL
- DECOMMISSIONED MONITORING WELL

NOTES

1. BASE MAP IMAGERY FROM ESRI WORLD IMAGERY, (08/13/2021).
2. WELL LOCATIONS SURVEYED IN MARCH, APRIL, JUNE 2016, AND JUNE 2017 BY BMJ ENGINEERS & SURVEYORS, INC.

0 200 400 Feet

1 " = 200 '

1:2,400

PROJECT:	DTE ELECTRIC COMPANY BELLE RIVER POWER PLANT BOTTOM ASH BASIN 4505 KING ROAD CHINA TOWNSHIP, MICHIGAN
TITLE:	SITE PLAN
DRAWN BY: B. TRACY	PROJ NO.: 413591.0003
CHECKED BY: A. HORRIE	FIGURE 2
APPROVED BY: V. BUENING	
DATE: JANUARY 2022	

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FILE NO.: 413591-0003-009.mxd

Plot Date: 11/24/2021, 14:20:11 PM by AFOJTIK -- LAYOUT: ANSI B(11"x17")
Path: E:\Projects\DTE\CCR_Sites\2017_265996\413591-0003-009.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS

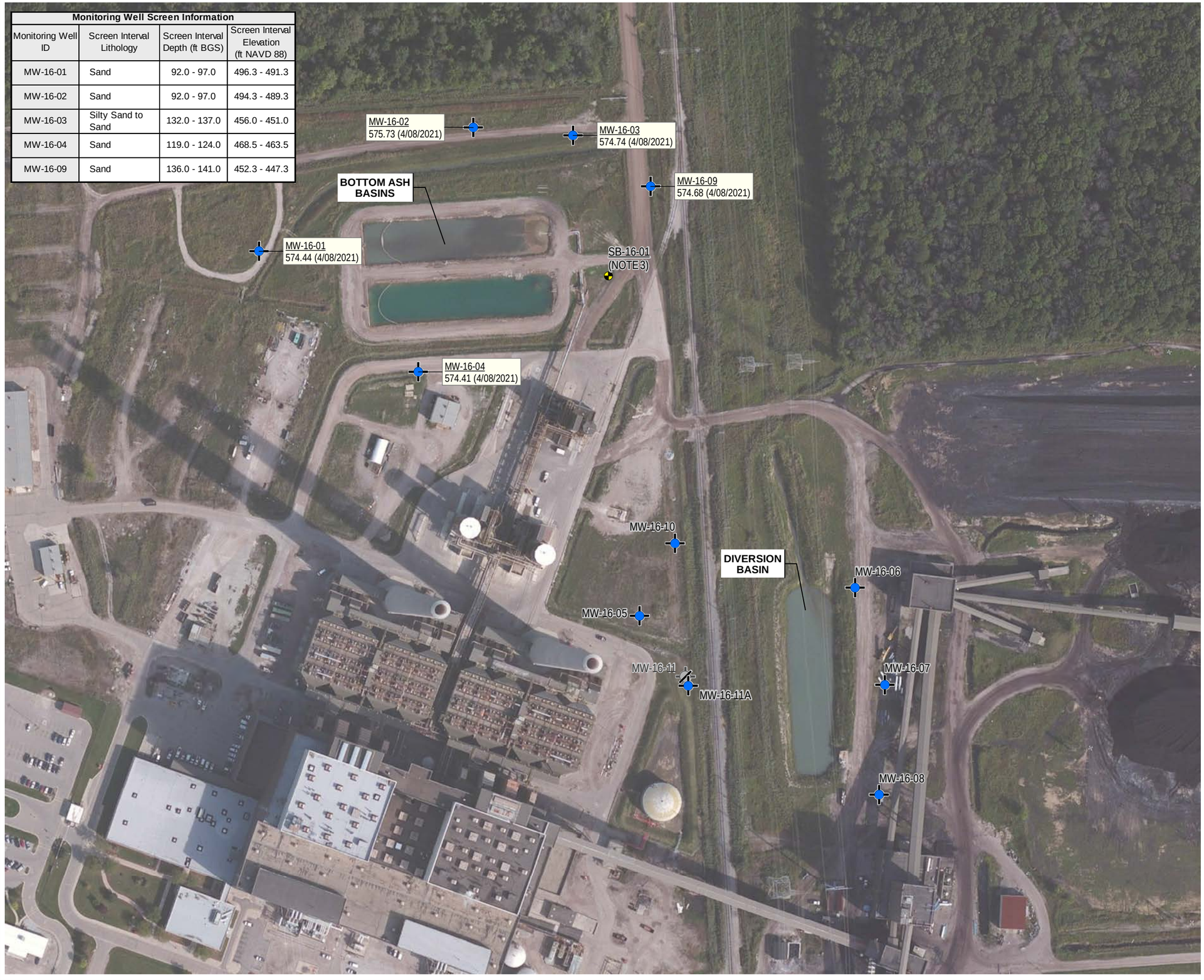
TRC - GIS

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

Plot Date: 11/24/2021, 14:32:45 PM by AFOJTIK -- LAYOUT: ANSI B (11"x17")
Path: E:\Projects\DTE\CCR_Sites\2017_265996\413591-0003-003.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	92.0 - 97.0	496.3 - 491.3
MW-16-02	Sand	92.0 - 97.0	494.3 - 489.3
MW-16-03	Silty Sand to Sand	132.0 - 137.0	456.0 - 451.0
MW-16-04	Sand	119.0 - 124.0	468.5 - 463.5
MW-16-09	Sand	136.0 - 141.0	452.3 - 447.3



LEGEND

- SOIL BORING
- MONITORING WELL
- DECOMMISSIONED MONITORING WELL

MW ID
GROUNDWATER ELEVATION (DATE)

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

NOTES

1. BASE MAP IMAGERY FROM ESRI WORLD IMAGERY, (08/13/2021).
2. WELL LOCATIONS SURVEYED IN MARCH, APRIL, JUNE 2016, AND JUNE 2017 BY BMJ ENGINEERS & SURVEYORS, INC.
3. NO SAND OR GRAVEL UNIT PRESENT ABOVE BEDROCK IN THIS LOCATION.

N

0 200 400 Feet

1 " = 200 '
1:2,400

PROJECT: DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT BOTTOM ASH BASIN
4505 KING ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE: BOTTOM ASH BASINS
GROUNDWATER POTENTIOMETRIC
ELEVATION SUMMARY APRIL 2021

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0003.000
CHECKED BY:	A. HORRIE		
APPROVED BY:	V. BUENING		FIGURE 3
DATE:	JANUARY 2022		

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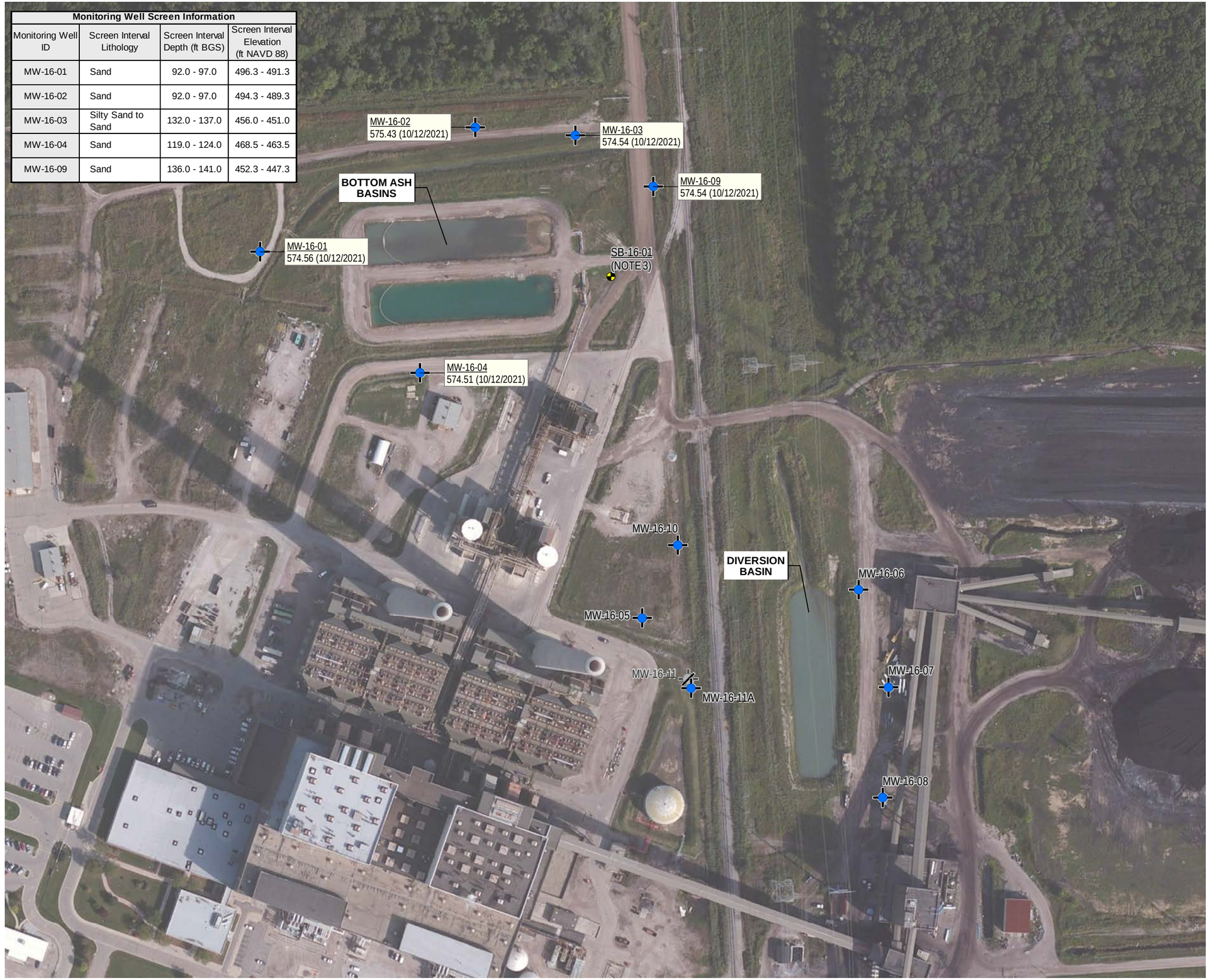
FILE NO.: 413591-0003-003.mxd

TRC - GIS

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	92.0 - 97.0	496.3 - 491.3
MW-16-02	Sand	92.0 - 97.0	494.3 - 489.3
MW-16-03	Silty Sand to Sand	132.0 - 137.0	456.0 - 451.0
MW-16-04	Sand	119.0 - 124.0	468.5 - 463.5
MW-16-09	Sand	136.0 - 141.0	452.3 - 447.3



LEGEND

- SOIL BORING
- MONITORING WELL
- DECOMMISSIONED MONITORING WELL

MW ID
GROUNDWATER ELEVATION (DATE)

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

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, (3/23/2019).
2. WELL LOCATIONS SURVEYED IN MARCH, APRIL AND JUNE 2016 AND JUNE 2017 BY BMJ ENGINEERS & SURVEYORS, INC.
3. NO SAND OR GRAVEL UNIT PRESENT ABOVE BEDROCK IN THIS LOCATION.

N

0 200 400 Feet

1 " = 200 '
1:2,400

PROJECT:
DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT BOTTOM ASH BASIN
4505 KING ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
BOTTOM ASH BASINS GROUNDWATER POTENTIOMETRIC ELEVATION SUMMARY OCTOBER 2021

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0003
CHECKED BY:	J. KRENZ		
APPROVED BY:	V. BUENING		**FIGURE 4**
DATE:	JANUARY 2022		

1540 Eisenhower Place
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Phone: 734.971.7080
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FILE NO.: 413591.0003-004_20211124.mxd

Plot Date: 12/13/2021, 22:46:33 PM by AFOJTIK -- LAYOUT: ANSI B(11"x17")
Path: E:\Projects\DTE\CCR_Sites\2017_265996\413591.0003-004_20211124.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

Appendix A
Laboratory Analytical Reports

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-147486-1
Client Project/Site: CCR DTE Belle River Power

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

Attn: Mr. Vincent Buening

Authorized for release by:
5/4/2021 9:09:40 AM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

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: 240-147486-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-147486-1

Comments
No additional comments.

Receipt
The samples were received on 4/14/2021 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 0.9º C.

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

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

Method Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

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 TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-147486-1	MW-16-01	Water	04/08/21 13:58	04/14/21 08:00	
240-147486-2	MW-16-02	Water	04/08/21 15:32	04/14/21 08:00	
240-147486-3	MW-16-03	Water	04/08/21 16:22	04/14/21 08:00	
240-147486-4	MW-16-04	Water	04/09/21 12:56	04/14/21 08:00	
240-147486-5	MW-16-05	Water	04/09/21 13:47	04/14/21 08:00	
240-147486-6	MW-16-06	Water	04/09/21 13:19	04/14/21 08:00	
240-147486-7	MW-16-07	Water	04/09/21 12:23	04/14/21 08:00	
240-147486-8	MW-16-08	Water	04/09/21 10:57	04/14/21 08:00	
240-147486-9	MW-16-09	Water	04/09/21 14:59	04/14/21 08:00	
240-147486-10	MW-16-10	Water	04/09/21 09:06	04/14/21 08:00	
240-147486-11	MW-16-11A	Water	04/09/21 10:06	04/14/21 08:00	
240-147486-12	DUP-01	Water	04/08/21 00:00	04/14/21 08:00	
240-147486-13	EB-01	Water	04/08/21 00:00	04/14/21 08:00	

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-01 — Lab Sample ID: 240-147486-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100	23	ug/L	1		6010B	Total Recoverable
Calcium	41000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	840		100	100	ug/L	1		6020	Total Recoverable
Chloride	450		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.7		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	23		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	850		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02 — Lab Sample ID: 240-147486-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100	23	ug/L	1		6010B	Total Recoverable
Calcium	49000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	740		100	100	ug/L	1		6020	Total Recoverable
Chloride	360		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.2		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	3.4		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	750		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03 — Lab Sample ID: 240-147486-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100	23	ug/L	1		6010B	Total Recoverable
Calcium	34000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	750		100	100	ug/L	1		6020	Total Recoverable
Chloride	560		10	10	mg/L	10		9056A	Total/NA
Fluoride	1.8		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1.4		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1100		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-04 — Lab Sample ID: 240-147486-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100	23	ug/L	1		6010B	Total Recoverable
Calcium	51000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	1500		100	100	ug/L	1		6020	Total Recoverable
Chloride	470		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.7		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	66		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1100		20	20	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-05 — Lab Sample ID: 240-147486-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1800		100	23	ug/L	1		6010B	Total Recoverable
Calcium	33000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	1200		100	100	ug/L	1		6020	Total Recoverable
Chloride	1500		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.2		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	14		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	2300		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-06 — Lab Sample ID: 240-147486-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2000		100	23	ug/L	1		6010B	Total Recoverable
Calcium	36000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	520		100	100	ug/L	1		6020	Total Recoverable
Chloride	1600		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.2		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1.3		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	2200		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-07 — Lab Sample ID: 240-147486-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2000		100	23	ug/L	1		6010B	Total Recoverable
Calcium	42000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	5100		100	100	ug/L	1		6020	Total Recoverable
Chloride	1700		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.2		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	47		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	2700		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-08 — Lab Sample ID: 240-147486-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1900		100	23	ug/L	1		6010B	Total Recoverable
Calcium	52000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	6300		100	100	ug/L	1		6020	Total Recoverable
Chloride	1900		10	10	mg/L	10		9056A	Total/NA
Fluoride	1.2		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1.5		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	2800		50	50	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-09 — Lab Sample ID: 240-147486-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1500		100	23	ug/L	1		6010B	Total Recoverable
Calcium	38000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	2300		100	100	ug/L	1		6020	Total Recoverable
Chloride	940		10	10	mg/L	10		9056A	Total/NA
Fluoride	1.5		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	15		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1600		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-10 — Lab Sample ID: 240-147486-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	2000		100	23	ug/L	1		6010B	Total Recoverable
Calcium	36000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	4200		100	100	ug/L	1		6020	Total Recoverable
Chloride	1400		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.1		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	120		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	2600		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-11A — Lab Sample ID: 240-147486-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1800		100	23	ug/L	1		6010B	Total Recoverable
Calcium	36000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	800		100	100	ug/L	1		6020	Total Recoverable
Chloride	1700		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.0		0.050	0.050	mg/L	1		9056A	Total/NA
Total Dissolved Solids	2100		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-147486-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100	23	ug/L	1		6010B	Total Recoverable
Calcium	41000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	820		100	100	ug/L	1		6020	Total Recoverable
Chloride	450		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.7		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	23		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	910		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: EB-01 — Lab Sample ID: 240-147486-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1.7		1.0	1.0	mg/L	1		9056A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-01

Lab Sample ID: 240-147486-1

Date Collected: 04/08/21 13:58

Matrix: Water

Date Received: 04/14/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100	23	ug/L		04/15/21 14:00	04/16/21 21:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	41000		1000	1000	ug/L		04/15/21 14:00	04/19/21 17:02	1
Iron	840		100	100	ug/L		04/15/21 14:00	04/19/21 17:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	450		5.0	5.0	mg/L			05/01/21 03:47	5
Fluoride	1.7		0.050	0.050	mg/L			05/01/21 03:27	1
Sulfate	23		1.0	1.0	mg/L			05/01/21 03:27	1
Total Dissolved Solids	850		20	20	mg/L			04/15/21 12:36	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-02

Date Collected: 04/08/21 15:32
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100	23	ug/L		04/15/21 14:00	04/16/21 22:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	49000		1000	1000	ug/L		04/15/21 14:00	04/19/21 17:37	1
Iron	740		100	100	ug/L		04/15/21 14:00	04/19/21 17:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	360		5.0	5.0	mg/L			05/01/21 04:27	5
Fluoride	1.2		0.050	0.050	mg/L			05/01/21 04:07	1
Sulfate	3.4		1.0	1.0	mg/L			05/01/21 04:07	1
Total Dissolved Solids	750		10	10	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-03

Date Collected: 04/08/21 16:22
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100	23	ug/L		04/15/21 14:00	04/16/21 22:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	34000		1000	1000	ug/L		04/15/21 14:00	04/19/21 17:39	1
Iron	750		100	100	ug/L		04/15/21 14:00	04/19/21 17:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	560		10	10	mg/L			05/01/21 05:48	10
Fluoride	1.8		0.050	0.050	mg/L			05/01/21 05:28	1
Sulfate	1.4		1.0	1.0	mg/L			05/01/21 05:28	1
Total Dissolved Solids	1100		20	20	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-04

Lab Sample ID: 240-147486-4

Date Collected: 04/09/21 12:56

Matrix: Water

Date Received: 04/14/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100	23	ug/L		04/15/21 14:00	04/16/21 22:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	51000		1000	1000	ug/L		04/15/21 14:00	04/19/21 17:42	1
Iron	1500		100	100	ug/L		04/15/21 14:00	04/19/21 17:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	470		5.0	5.0	mg/L			05/01/21 06:28	5
Fluoride	1.7		0.050	0.050	mg/L			05/01/21 06:08	1
Sulfate	66		1.0	1.0	mg/L			05/01/21 06:08	1
Total Dissolved Solids	1100		20	20	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-05

Date Collected: 04/09/21 13:47
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1800		100	23	ug/L		04/15/21 14:00	04/16/21 22:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	33000		1000	1000	ug/L		04/15/21 14:00	04/19/21 17:44	1
Iron	1200		100	100	ug/L		04/15/21 14:00	04/19/21 17:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1500		20	20	mg/L			05/01/21 07:08	20
Fluoride	1.2		0.050	0.050	mg/L			05/01/21 06:48	1
Sulfate	14		1.0	1.0	mg/L			05/01/21 06:48	1
Total Dissolved Solids	2300		50	50	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-06

Lab Sample ID: 240-147486-6

Date Collected: 04/09/21 13:19

Matrix: Water

Date Received: 04/14/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2000		100	23	ug/L		04/15/21 14:00	04/16/21 22:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	36000		1000	1000	ug/L		04/15/21 14:00	04/19/21 17:47	1
Iron	520		100	100	ug/L		04/15/21 14:00	04/19/21 17:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1600		20	20	mg/L			05/01/21 07:48	20
Fluoride	1.2		0.050	0.050	mg/L			05/01/21 07:28	1
Sulfate	1.3		1.0	1.0	mg/L			05/01/21 07:28	1
Total Dissolved Solids	2200		50	50	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-07

Lab Sample ID: 240-147486-7

Date Collected: 04/09/21 12:23

Matrix: Water

Date Received: 04/14/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2000		100	23	ug/L		04/15/21 14:00	04/16/21 22:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	42000		1000	1000	ug/L		04/15/21 14:00	04/19/21 17:49	1
Iron	5100		100	100	ug/L		04/15/21 14:00	04/19/21 17:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700		20	20	mg/L			05/01/21 08:29	20
Fluoride	1.2		0.050	0.050	mg/L			05/01/21 08:08	1
Sulfate	47		1.0	1.0	mg/L			05/01/21 08:08	1
Total Dissolved Solids	2700		50	50	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-08

Lab Sample ID: 240-147486-8

Date Collected: 04/09/21 10:57

Matrix: Water

Date Received: 04/14/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1900		100	23	ug/L		04/15/21 14:00	04/16/21 22:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	52000		1000	1000	ug/L		04/15/21 14:00	04/19/21 17:52	1
Iron	6300		100	100	ug/L		04/15/21 14:00	04/19/21 17:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1900		10	10	mg/L			05/01/21 10:29	10
Fluoride	1.2		0.050	0.050	mg/L			05/01/21 09:29	1
Sulfate	1.5		1.0	1.0	mg/L			05/01/21 09:29	1
Total Dissolved Solids	2800		50	50	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-09

Lab Sample ID: 240-147486-9

Date Collected: 04/09/21 14:59

Matrix: Water

Date Received: 04/14/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1500		100	23	ug/L		04/15/21 14:00	04/16/21 22:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	38000		1000	1000	ug/L		04/15/21 14:00	04/19/21 17:59	1
Iron	2300		100	100	ug/L		04/15/21 14:00	04/19/21 17:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	940		10	10	mg/L			05/01/21 11:50	10
Fluoride	1.5		0.050	0.050	mg/L			05/01/21 11:29	1
Sulfate	15		1.0	1.0	mg/L			05/01/21 11:29	1
Total Dissolved Solids	1600		40	40	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-10

Date Collected: 04/09/21 09:06
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-10

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2000		100	23	ug/L		04/15/21 14:00	04/16/21 22:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	36000		1000	1000	ug/L		04/15/21 14:00	04/19/21 18:02	1
Iron	4200		100	100	ug/L		04/15/21 14:00	04/19/21 18:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1400		20	20	mg/L			05/01/21 04:12	20
Fluoride	1.1		0.050	0.050	mg/L			05/01/21 03:50	1
Sulfate	120		1.0	1.0	mg/L			05/01/21 03:50	1
Total Dissolved Solids	2600		50	50	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-11A

Date Collected: 04/09/21 10:06
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-11

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1800		100	23	ug/L		04/15/21 14:00	04/16/21 22:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	36000		1000	1000	ug/L		04/15/21 14:00	04/19/21 18:04	1
Iron	800		100	100	ug/L		04/15/21 14:00	04/19/21 18:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700		20	20	mg/L			05/01/21 04:55	20
Fluoride	1.0		0.050	0.050	mg/L			05/01/21 04:33	1
Sulfate	1.0	U	1.0	1.0	mg/L			05/01/21 04:33	1
Total Dissolved Solids	2100		50	50	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: DUP-01

Date Collected: 04/08/21 00:00
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-12

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100	23	ug/L		04/15/21 14:00	04/16/21 23:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	41000		1000	1000	ug/L		04/15/21 14:00	04/19/21 18:07	1
Iron	820		100	100	ug/L		04/15/21 14:00	04/19/21 18:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	450		5.0	5.0	mg/L			05/01/21 06:22	5
Fluoride	1.7		0.050	0.050	mg/L			05/01/21 05:17	1
Sulfate	23		1.0	1.0	mg/L			05/01/21 05:17	1
Total Dissolved Solids	910		20	20	mg/L			04/15/21 12:36	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: EB-01

Date Collected: 04/08/21 00:00
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-13

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	23	ug/L		04/15/21 14:00	04/16/21 23:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		04/15/21 14:00	04/19/21 18:09	1
Iron	100	U	100	100	ug/L		04/15/21 14:00	04/19/21 18:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1.7**		1.0	1.0	mg/L			05/01/21 08:11	1
Fluoride	0.050	U	0.050	0.050	mg/L			05/01/21 08:11	1
Sulfate	1.0	U	1.0	1.0	mg/L			05/01/21 08:11	1
Total Dissolved Solids	10	U	10	10	mg/L			04/15/21 12:36	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-481290/1-A
Matrix: Water
Analysis Batch: 481543

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 481290

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	23	ug/L		04/15/21 14:00	04/16/21 21:38	1

Lab Sample ID: LCS 240-481290/2-A
Matrix: Water
Analysis Batch: 481543

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 481290

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	983		ug/L		98	80 - 120

Lab Sample ID: 240-147486-1 MS
Matrix: Water
Analysis Batch: 481543

Client Sample ID: MW-16-01
Prep Type: Total Recoverable
Prep Batch: 481290

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000		1000	2160		ug/L		112	75 - 125

Lab Sample ID: 240-147486-1 MSD
Matrix: Water
Analysis Batch: 481543

Client Sample ID: MW-16-01
Prep Type: Total Recoverable
Prep Batch: 481290

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1000		1000	2060		ug/L		101	75 - 125	5	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-481290/1-A
Matrix: Water
Analysis Batch: 481756

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 481290

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		04/15/21 14:00	04/19/21 16:53	1
Iron	100	U	100	100	ug/L		04/15/21 14:00	04/19/21 16:53	1

Lab Sample ID: LCS 240-481290/3-A
Matrix: Water
Analysis Batch: 481756

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 481290

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25000	24100		ug/L		96	80 - 120
Iron	5000	4770		ug/L		95	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-483665/3
Matrix: Water
Analysis Batch: 483665

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			04/30/21 17:10	1
Fluoride	0.050	U	0.050	0.050	mg/L			04/30/21 17:10	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 240-483665/3
Matrix: Water
Analysis Batch: 483665

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	mg/L			04/30/21 17:10	1

Lab Sample ID: LCS 240-483665/4
Matrix: Water
Analysis Batch: 483665

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	50.4		mg/L		101	90 - 110
Fluoride	2.50	2.58		mg/L		103	90 - 110
Sulfate	50.0	50.3		mg/L		101	90 - 110

Lab Sample ID: 240-147486-8 MS
Matrix: Water
Analysis Batch: 483665

Client Sample ID: MW-16-08
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.2		2.50	3.86		mg/L		106	80 - 120
Sulfate	1.5		50.0	53.1		mg/L		103	80 - 120

Lab Sample ID: 240-147486-8 MSD
Matrix: Water
Analysis Batch: 483665

Client Sample ID: MW-16-08
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.2		2.50	3.94		mg/L		109	80 - 120	2	15
Sulfate	1.5		50.0	54.3		mg/L		106	80 - 120	2	15

Lab Sample ID: MB 240-483667/17
Matrix: Water
Analysis Batch: 483667

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			05/01/21 08:54	1
Fluoride	0.050	U	0.050	0.050	mg/L			05/01/21 08:54	1
Sulfate	1.0	U	1.0	1.0	mg/L			05/01/21 08:54	1

Lab Sample ID: LCS 240-483667/18
Matrix: Water
Analysis Batch: 483667

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	50.3		mg/L		101	90 - 110
Fluoride	2.50	2.60		mg/L		104	90 - 110
Sulfate	50.0	50.7		mg/L		101	90 - 110

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 240-147486-12 MS
Matrix: Water
Analysis Batch: 483667

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Fluoride	1.7		2.50	4.44		mg/L		109	80 - 120		
Sulfate	23		50.0	74.8		mg/L		103	80 - 120		

Lab Sample ID: 240-147486-12 MS
Matrix: Water
Analysis Batch: 483667

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	450		250	698		mg/L		100	80 - 120		

Lab Sample ID: 240-147486-12 MSD
Matrix: Water
Analysis Batch: 483667

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.7		2.50	4.49		mg/L		111	80 - 120	1	15
Sulfate	23		50.0	75.8		mg/L		105	80 - 120	1	15

Lab Sample ID: 240-147486-12 MSD
Matrix: Water
Analysis Batch: 483667

Client Sample ID: DUP-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	450		250	687		mg/L		95	80 - 120	2	15

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

Lab Sample ID: MB 240-481338/1
Matrix: Water
Analysis Batch: 481338

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			04/15/21 12:36	1

Lab Sample ID: LCS 240-481338/2
Matrix: Water
Analysis Batch: 481338

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			683	689		mg/L		101	80 - 120		

Metals

Prep Batch: 481290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147486-1	MW-16-01	Total Recoverable	Water	3005A	
240-147486-2	MW-16-02	Total Recoverable	Water	3005A	
240-147486-3	MW-16-03	Total Recoverable	Water	3005A	
240-147486-4	MW-16-04	Total Recoverable	Water	3005A	
240-147486-5	MW-16-05	Total Recoverable	Water	3005A	
240-147486-6	MW-16-06	Total Recoverable	Water	3005A	
240-147486-7	MW-16-07	Total Recoverable	Water	3005A	
240-147486-8	MW-16-08	Total Recoverable	Water	3005A	
240-147486-9	MW-16-09	Total Recoverable	Water	3005A	
240-147486-10	MW-16-10	Total Recoverable	Water	3005A	
240-147486-11	MW-16-11A	Total Recoverable	Water	3005A	
240-147486-12	DUP-01	Total Recoverable	Water	3005A	
240-147486-13	EB-01	Total Recoverable	Water	3005A	
MB 240-481290/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-481290/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-481290/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-147486-1 MS	MW-16-01	Total Recoverable	Water	3005A	
240-147486-1 MSD	MW-16-01	Total Recoverable	Water	3005A	

Analysis Batch: 481543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147486-1	MW-16-01	Total Recoverable	Water	6010B	481290
240-147486-2	MW-16-02	Total Recoverable	Water	6010B	481290
240-147486-3	MW-16-03	Total Recoverable	Water	6010B	481290
240-147486-4	MW-16-04	Total Recoverable	Water	6010B	481290
240-147486-5	MW-16-05	Total Recoverable	Water	6010B	481290
240-147486-6	MW-16-06	Total Recoverable	Water	6010B	481290
240-147486-7	MW-16-07	Total Recoverable	Water	6010B	481290
240-147486-8	MW-16-08	Total Recoverable	Water	6010B	481290
240-147486-9	MW-16-09	Total Recoverable	Water	6010B	481290
240-147486-10	MW-16-10	Total Recoverable	Water	6010B	481290
240-147486-11	MW-16-11A	Total Recoverable	Water	6010B	481290
240-147486-12	DUP-01	Total Recoverable	Water	6010B	481290
240-147486-13	EB-01	Total Recoverable	Water	6010B	481290
MB 240-481290/1-A	Method Blank	Total Recoverable	Water	6010B	481290
LCS 240-481290/2-A	Lab Control Sample	Total Recoverable	Water	6010B	481290
240-147486-1 MS	MW-16-01	Total Recoverable	Water	6010B	481290
240-147486-1 MSD	MW-16-01	Total Recoverable	Water	6010B	481290

Analysis Batch: 481756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147486-1	MW-16-01	Total Recoverable	Water	6020	481290
240-147486-2	MW-16-02	Total Recoverable	Water	6020	481290
240-147486-3	MW-16-03	Total Recoverable	Water	6020	481290
240-147486-4	MW-16-04	Total Recoverable	Water	6020	481290
240-147486-5	MW-16-05	Total Recoverable	Water	6020	481290
240-147486-6	MW-16-06	Total Recoverable	Water	6020	481290
240-147486-7	MW-16-07	Total Recoverable	Water	6020	481290
240-147486-8	MW-16-08	Total Recoverable	Water	6020	481290
240-147486-9	MW-16-09	Total Recoverable	Water	6020	481290
240-147486-10	MW-16-10	Total Recoverable	Water	6020	481290

Metals (Continued)

Analysis Batch: 481756 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147486-11	MW-16-11A	Total Recoverable	Water	6020	481290
240-147486-12	DUP-01	Total Recoverable	Water	6020	481290
240-147486-13	EB-01	Total Recoverable	Water	6020	481290
MB 240-481290/1-A	Method Blank	Total Recoverable	Water	6020	481290
LCS 240-481290/3-A	Lab Control Sample	Total Recoverable	Water	6020	481290

General Chemistry

Analysis Batch: 481338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147486-1	MW-16-01	Total/NA	Water	SM 2540C	
240-147486-2	MW-16-02	Total/NA	Water	SM 2540C	
240-147486-3	MW-16-03	Total/NA	Water	SM 2540C	
240-147486-4	MW-16-04	Total/NA	Water	SM 2540C	
240-147486-5	MW-16-05	Total/NA	Water	SM 2540C	
240-147486-6	MW-16-06	Total/NA	Water	SM 2540C	
240-147486-7	MW-16-07	Total/NA	Water	SM 2540C	
240-147486-8	MW-16-08	Total/NA	Water	SM 2540C	
240-147486-9	MW-16-09	Total/NA	Water	SM 2540C	
240-147486-10	MW-16-10	Total/NA	Water	SM 2540C	
240-147486-11	MW-16-11A	Total/NA	Water	SM 2540C	
240-147486-12	DUP-01	Total/NA	Water	SM 2540C	
240-147486-13	EB-01	Total/NA	Water	SM 2540C	
MB 240-481338/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-481338/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 483665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147486-1	MW-16-01	Total/NA	Water	9056A	
240-147486-1	MW-16-01	Total/NA	Water	9056A	
240-147486-2	MW-16-02	Total/NA	Water	9056A	
240-147486-2	MW-16-02	Total/NA	Water	9056A	
240-147486-3	MW-16-03	Total/NA	Water	9056A	
240-147486-3	MW-16-03	Total/NA	Water	9056A	
240-147486-4	MW-16-04	Total/NA	Water	9056A	
240-147486-4	MW-16-04	Total/NA	Water	9056A	
240-147486-5	MW-16-05	Total/NA	Water	9056A	
240-147486-5	MW-16-05	Total/NA	Water	9056A	
240-147486-6	MW-16-06	Total/NA	Water	9056A	
240-147486-6	MW-16-06	Total/NA	Water	9056A	
240-147486-7	MW-16-07	Total/NA	Water	9056A	
240-147486-7	MW-16-07	Total/NA	Water	9056A	
240-147486-8	MW-16-08	Total/NA	Water	9056A	
240-147486-8	MW-16-08	Total/NA	Water	9056A	
240-147486-9	MW-16-09	Total/NA	Water	9056A	
240-147486-9	MW-16-09	Total/NA	Water	9056A	
MB 240-483665/3	Method Blank	Total/NA	Water	9056A	
LCS 240-483665/4	Lab Control Sample	Total/NA	Water	9056A	
240-147486-8 MS	MW-16-08	Total/NA	Water	9056A	
240-147486-8 MSD	MW-16-08	Total/NA	Water	9056A	

QC Association Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

General Chemistry

Analysis Batch: 483667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-147486-10	MW-16-10	Total/NA	Water	9056A	
240-147486-10	MW-16-10	Total/NA	Water	9056A	
240-147486-11	MW-16-11A	Total/NA	Water	9056A	
240-147486-11	MW-16-11A	Total/NA	Water	9056A	
240-147486-12	DUP-01	Total/NA	Water	9056A	
240-147486-12	DUP-01	Total/NA	Water	9056A	
240-147486-13	EB-01	Total/NA	Water	9056A	
MB 240-483667/17	Method Blank	Total/NA	Water	9056A	
LCS 240-483667/18	Lab Control Sample	Total/NA	Water	9056A	
240-147486-12 MS	DUP-01	Total/NA	Water	9056A	
240-147486-12 MS	DUP-01	Total/NA	Water	9056A	
240-147486-12 MSD	DUP-01	Total/NA	Water	9056A	
240-147486-12 MSD	DUP-01	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-01

Lab Sample ID: 240-147486-1

Date Collected: 04/08/21 13:58

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 21:46	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 17:02	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483665	05/01/21 03:27	AGC	TAL CAN
Total/NA	Analysis	9056A		5	483665	05/01/21 03:47	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: MW-16-02

Lab Sample ID: 240-147486-2

Date Collected: 04/08/21 15:32

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 22:12	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 17:37	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483665	05/01/21 04:07	AGC	TAL CAN
Total/NA	Analysis	9056A		5	483665	05/01/21 04:27	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: MW-16-03

Lab Sample ID: 240-147486-3

Date Collected: 04/08/21 16:22

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 22:16	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 17:39	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483665	05/01/21 05:28	AGC	TAL CAN
Total/NA	Analysis	9056A		10	483665	05/01/21 05:48	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: MW-16-04

Lab Sample ID: 240-147486-4

Date Collected: 04/09/21 12:56

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 22:21	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 17:42	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483665	05/01/21 06:08	AGC	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-04

Date Collected: 04/09/21 12:56
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	483665	05/01/21 06:28	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: MW-16-05

Date Collected: 04/09/21 13:47
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 22:25	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 17:44	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483665	05/01/21 06:48	AGC	TAL CAN
Total/NA	Analysis	9056A		20	483665	05/01/21 07:08	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: MW-16-06

Date Collected: 04/09/21 13:19
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 22:30	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 17:47	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483665	05/01/21 07:28	AGC	TAL CAN
Total/NA	Analysis	9056A		20	483665	05/01/21 07:48	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: MW-16-07

Date Collected: 04/09/21 12:23
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 22:34	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 17:49	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483665	05/01/21 08:08	AGC	TAL CAN
Total/NA	Analysis	9056A		20	483665	05/01/21 08:29	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-08

Date Collected: 04/09/21 10:57
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 22:39	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 17:52	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483665	05/01/21 09:29	AGC	TAL CAN
Total/NA	Analysis	9056A		10	483665	05/01/21 10:29	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: MW-16-09

Date Collected: 04/09/21 14:59
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 22:43	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 17:59	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483665	05/01/21 11:29	AGC	TAL CAN
Total/NA	Analysis	9056A		10	483665	05/01/21 11:50	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: MW-16-10

Date Collected: 04/09/21 09:06
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 22:48	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 18:02	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483667	05/01/21 03:50	AGC	TAL CAN
Total/NA	Analysis	9056A		20	483667	05/01/21 04:12	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: MW-16-11A

Date Collected: 04/09/21 10:06
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 22:52	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 18:04	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483667	05/01/21 04:33	AGC	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-147486-1

Client Sample ID: MW-16-11A

Lab Sample ID: 240-147486-11

Date Collected: 04/09/21 10:06

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		20	483667	05/01/21 04:55	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: DUP-01

Lab Sample ID: 240-147486-12

Date Collected: 04/08/21 00:00

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 23:05	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 18:07	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483667	05/01/21 05:17	AGC	TAL CAN
Total/NA	Analysis	9056A		5	483667	05/01/21 06:22	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Client Sample ID: EB-01

Lab Sample ID: 240-147486-13

Date Collected: 04/08/21 00:00

Matrix: Water

Date Received: 04/14/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010B		1	481543	04/16/21 23:09	DSH	TAL CAN
Total Recoverable	Prep	3005A			481290	04/15/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	481756	04/19/21 18:09	DTN	TAL CAN
Total/NA	Analysis	9056A		1	483667	05/01/21 08:11	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	481338	04/15/21 12:36	AJ	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-147486-1
Project/Site: CCR DTE Belle River Power

Laboratory: Eurofins TestAmerica, 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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21 *
Kentucky (UST)	State	112225	02-23-21 *
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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

MICHIGAN
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Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton OH 44720
Phone 330-497-9396 Fax 330-497-0772

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-81502-21479.1
Client Contact: Chris Scieszka	Phone:	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin:	Page: Page 1 of 2
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: Yes No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 164686			
Email: CScieszka@trccompanies.com	WO #: 370029.0003.P1.T2			
Project Name: CRR- DTE Belle River Power	Project #: 24016463			
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)	2540C_Calcd, 9056A_28D	6010B, 6020	Total Number of containers	Special Instructions/Note
			Preservation Code:				N	D		
MW-16-01	4-8-21	1358	G	Water	N	N	X	X		
MW-16-02	4-8-21	1532		Water			X	X		
MW-16-03	4-8-21	1622		Water			X	X		
MW-16-04	4-9-21	1256		Water			X	X		
MW-16-05	4-9-21	1340		Water			X	X		
MW-16-06	4-9-21	1??		Water			X	X		
MW-16-07	4-9-21	1223		Water			X	X		
MW-16-08	4-9-21	1057		Water			X	X		
MW-16-09	4-9-21	1459		Water			X	X		
MW-16-10	4-9-21	0906		Water			X	X		
MW-16-11A	4-9-21	1006	↓	Water	↓	↓	X	X		

240-147486 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: [signature]	Date/Time: 4/9/21 1700	Company: TRC	Received by: TRC ST — 1700	Date/Time: 4/9/21 1700	Company: TRC
Relinquished by: D Stoller	Date/Time: 4/12/21 1:40	Company:	Received by: [signature]	Date/Time: 4/12/21 1340	Company: ETA
Relinquished by: [signature]	Date/Time: 4/12/21 1600	Company: ETA	Received by: COLD STORAGE	Date/Time: 4/12/21 16:18	Company: ETA
Custody Seals Intact: Yes No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Amanda Batchelder 4/13/21 1402 ETA Conn [signature] 4-14-21 800 ETA

Ver: 11/01/2020

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton OH 44720
Phone 330-497-9396 Fax 330-497-0772

MICHIGAN 190

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler	Lab PM: Brooks, Kris M	Carrier Tracking No(s)	COC No: 240-81502.21479.2
Client Contact: Chris Scieszka	Phone	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin	Page: Page 2 of 2
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: Yes No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: 164686			
Email: CScieszka@trccompanies.com	WO #: 370029.0003 P1 T2			
Project Name: CRR- DTE Belle River Power	Project #: 24016463			
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)	2540C_Calcd, 9056A_28D	6010B, 6020	Total Number of containers	Special Instructions/Note
			Preservation Code:				N	D		
DUP-01	4-8-21	—	G	Water	N	N	X	X	2	
EB-01	4-8-21			Water	N	N	X	X	2	
				Water						

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; Other:
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)

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
[signature]	4/9/21 1700	TRC	[signature]	4/9/21 1700	TRC
[signature]	4/12/21 1:40		[signature]	4/12/21 1340	GT
[signature]	4/12/21 1000	En	COLD STORAGE	4/13/21 16:18	ETA

Custody Seals Intact: Yes ✓No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

[signature] 4/13/21 1402 ETA comm[illegible] 4-14-21 800 ETA

Ver: 11/01/2020

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 147486**
Canton Facility

Client TRC Site Name _____ Cooler unpacked by: COMG.

Cooler Received on 4-14-21 Opened on 4-14-21

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-11 (CF **+0.1** °C) Observed Cooler Temp. 1.8 °C Corrected Cooler Temp. 1.9 °C
   IR GUN #IR-12 (CF **+0.2**°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)?		
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# **HC022887**
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	240-147486-B-1	Plastic 250ml - with Nitric Acid	<2			
MW-16-02	240-147486-B-2	Plastic 250ml - with Nitric Acid	<2			
MW-16-03	240-147486-B-3	Plastic 250ml - with Nitric Acid	<2			
MW-16-04	240-147486-B-4	Plastic 250ml - with Nitric Acid	<2			
MW-16-05	240-147486-B-5	Plastic 250ml - with Nitric Acid	<2			
MW-16-06	240-147486-B-6	Plastic 250ml - with Nitric Acid	<2			
MW-16-07	240-147486-B-7	Plastic 250ml - with Nitric Acid	<2			
MW-16-08	240-147486-B-8	Plastic 250ml - with Nitric Acid	<2			
MW-16-09	240-147486-B-9	Plastic 250ml - with Nitric Acid	<2			
MW-16-10	240-147486-B-10	Plastic 250ml - with Nitric Acid	<2			
MW-16-11A	240-147486-B-11	Plastic 250ml - with Nitric Acid	<2			
DUP-01	240-147486-B-12	Plastic 250ml - with Nitric Acid	<2			
EB-01	240-147486-B-13	Plastic 250ml - with Nitric Acid	<2			

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-149986-1
Client Project/Site: CCR DTE Belle River Power

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

Attn: Mr. Vincent Buening

Authorized for release by:
6/7/2021 4:17:27 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-149986-1

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: 240-149986-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-149986-1

Comments
No additional comments.

Receipt
The samples were received on 5/21/2021 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 analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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

Method Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-149986-1

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 TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-149986-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-149986-1	MW-16-01	Water	05/18/21 09:03	05/21/21 08:00	
240-149986-2	MW-16-10	Water	05/18/21 10:41	05/21/21 08:00	
240-149986-3	DUP-01	Water	05/18/21 00:00	05/21/21 08:00	
240-149986-4	DUP-02	Water	05/18/21 00:00	05/21/21 08:00	
240-149986-5	EB-01	Water	05/18/21 09:47	05/21/21 08:00	

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-149986-1

Client Sample ID: MW-16-01 — Lab Sample ID: 240-149986-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	12		5.0	5.0	mg/L	5		9056A	Total/NA

Client Sample ID: MW-16-10 — Lab Sample ID: 240-149986-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	27000		1000	1000	ug/L	1		6020	Total Recoverable

Client Sample ID: DUP-01 — Lab Sample ID: 240-149986-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	12		5.0	5.0	mg/L	5		9056A	Total/NA

Client Sample ID: DUP-02 — Lab Sample ID: 240-149986-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	28000		1000	1000	ug/L	1		6020	Total Recoverable

Client Sample ID: EB-01 — Lab Sample ID: 240-149986-5

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-149986-1

Client Sample ID: MW-16-01
Date Collected: 05/18/21 09:03
Date Received: 05/21/21 08:00

Lab Sample ID: 240-149986-1
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	12		5.0	5.0	mg/L			06/04/21 14:56	5

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-149986-1

Client Sample ID: MW-16-10
Date Collected: 05/18/21 10:41
Date Received: 05/21/21 08:00

Lab Sample ID: 240-149986-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	27000		1000	1000	ug/L		05/26/21 14:00	05/27/21 18:04	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-149986-1

Client Sample ID: DUP-01
Date Collected: 05/18/21 00:00
Date Received: 05/21/21 08:00

Lab Sample ID: 240-149986-3
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	12		5.0	5.0	mg/L			06/04/21 15:16	5

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-149986-1

Client Sample ID: DUP-02
Date Collected: 05/18/21 00:00
Date Received: 05/21/21 08:00

Lab Sample ID: 240-149986-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	28000		1000	1000	ug/L		05/26/21 14:00	05/27/21 18:16	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-149986-1

Client Sample ID: EB-01

Date Collected: 05/18/21 09:47
Date Received: 05/21/21 08:00

Lab Sample ID: 240-149986-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		05/26/21 14:00	05/27/21 18:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	mg/L			06/04/21 16:16	1

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-487623/1-A
Matrix: Water
Analysis Batch: 488009

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 487623

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		05/26/21 14:00	05/27/21 17:57	1

Lab Sample ID: LCS 240-487623/3-A
Matrix: Water
Analysis Batch: 488009

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 487623

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25000	24300		ug/L		97	80 - 120

Lab Sample ID: 240-149986-2 MS
Matrix: Water
Analysis Batch: 488009

Client Sample ID: MW-16-10
Prep Type: Total Recoverable
Prep Batch: 487623

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	27000		25000	52800		ug/L		101	75 - 125

Lab Sample ID: 240-149986-2 MSD
Matrix: Water
Analysis Batch: 488009

Client Sample ID: MW-16-10
Prep Type: Total Recoverable
Prep Batch: 487623

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	27000		25000	52600		ug/L		101	75 - 125	0	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-488930/3
Matrix: Water
Analysis Batch: 488930

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	mg/L			06/04/21 08:13	1

Lab Sample ID: LCS 240-488930/4
Matrix: Water
Analysis Batch: 488930

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	50.6		mg/L		101	90 - 110

QC Association Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-149986-1

Metals

Prep Batch: 487623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149986-2	MW-16-10	Total Recoverable	Water	3005A	
240-149986-4	DUP-02	Total Recoverable	Water	3005A	
240-149986-5	EB-01	Total Recoverable	Water	3005A	
MB 240-487623/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-487623/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-149986-2 MS	MW-16-10	Total Recoverable	Water	3005A	
240-149986-2 MSD	MW-16-10	Total Recoverable	Water	3005A	

Analysis Batch: 488009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149986-2	MW-16-10	Total Recoverable	Water	6020	487623
240-149986-4	DUP-02	Total Recoverable	Water	6020	487623
240-149986-5	EB-01	Total Recoverable	Water	6020	487623
MB 240-487623/1-A	Method Blank	Total Recoverable	Water	6020	487623
LCS 240-487623/3-A	Lab Control Sample	Total Recoverable	Water	6020	487623
240-149986-2 MS	MW-16-10	Total Recoverable	Water	6020	487623
240-149986-2 MSD	MW-16-10	Total Recoverable	Water	6020	487623

General Chemistry

Analysis Batch: 488930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-149986-1	MW-16-01	Total/NA	Water	9056A	
240-149986-3	DUP-01	Total/NA	Water	9056A	
240-149986-5	EB-01	Total/NA	Water	9056A	
MB 240-488930/3	Method Blank	Total/NA	Water	9056A	
LCS 240-488930/4	Lab Control Sample	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-149986-1

Client Sample ID: MW-16-01
Date Collected: 05/18/21 09:03
Date Received: 05/21/21 08:00

Lab Sample ID: 240-149986-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	488930	06/04/21 14:56	AGC	TAL CAN

Client Sample ID: MW-16-10
Date Collected: 05/18/21 10:41
Date Received: 05/21/21 08:00

Lab Sample ID: 240-149986-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			487623	05/26/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	488009	05/27/21 18:04	DTN	TAL CAN

Client Sample ID: DUP-01
Date Collected: 05/18/21 00:00
Date Received: 05/21/21 08:00

Lab Sample ID: 240-149986-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	488930	06/04/21 15:16	AGC	TAL CAN

Client Sample ID: DUP-02
Date Collected: 05/18/21 00:00
Date Received: 05/21/21 08:00

Lab Sample ID: 240-149986-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			487623	05/26/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	488009	05/27/21 18:16	DTN	TAL CAN

Client Sample ID: EB-01
Date Collected: 05/18/21 09:47
Date Received: 05/21/21 08:00

Lab Sample ID: 240-149986-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			487623	05/26/21 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020		1	488009	05/27/21 18:24	DTN	TAL CAN
Total/NA	Analysis	9056A		1	488930	06/04/21 16:16	AGC	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation.
Job ID: 240-149986-1
Project/Site: CCR DTE Belle River Power

Laboratory: Eurofins TestAmerica, 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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-21
Iowa	State	421	06-01-21 *
Kansas	NELAP	E-10336	04-30-21 *
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton OH 44720
Phone (330) 497-9396 Phone (330) 497-0772

MICHIGAN 190

Chain of Custody Record

eurofins

Client Information	Sampler: Jacob Kranz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-82346-31929 1
Client Contact: Mr Vincent Buening	Phone: 734-395-9804	E-Mail: Kris.Brooks@Eurofinset.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):			
State, Zip: MI 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971 7080(Tel) 313-971-9022(Fax)	PO #: TBD			
Email: vbuening@trccompanies.com	WO #: 370029.0000 P1 T2			
Project Name: ~~CCR DTE BRAP~~ ~~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)	6010B, 6020 Ca B, Fe D	6010B, 6020 Ca B, Fe N	2540C_Calcd TDS, 9056A_28D Chloride, Fluoride, Sulfate	6010B, 6020 - Ca	~~25406_Calcd~~	9056A_28D - Sulfate	Total Number of containers	Special Instructions/Note
			Preservation Code:											
MW-16 01	5-18-21	0903	G	Water	N	N						X		
MW-16-10	5-18-21	1041	G	Water	N	N				X				
DUP-01	5 18 21	—	G	Water	N	N						X		
DUP-02	5-18-21	—	G	Water	N	N				X				
EB 01	5-17-21	0947	G	Water	N	N				X		X		
				Water										
				Water										
				Water										
				Water										
				Water										

240-149986 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: 5-20-21 1342	Company TRC	Received by:
Relinquished by:	Date/Time: 5/20/21 1346	Company Eur	Received by: Date/Time: 5-21-21 0802 Company ETA
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 TestAmerica Canton Sample Receipt Form/Narrative **Login #** 149936
Canton Facility

Client TRC Environmental Site Name _____ Cooler unpacked by Colm G

Cooler Received on 5-21-21 Opened on 5-21-21

FedEx. 1st Grd Exp UPS FAS (Clipper) Client Drop Off TestAmerica Courier Other _____

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

TestAmerica 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-11 (CF +0.1 °C) Observed Cooler Temp. 1.1 °C Corrected Cooler Temp. 1.2 °C

IR GUN #IR-12 (CF +0.2°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)?	
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# **HC022887**
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-16-10	240-149986-A-2	Plastic 500ml - with Nitric Acid	<2			
DUP-02	240-149986-A-4	Plastic 500ml - with Nitric Acid	<2			
EB-01	240-149986-B-5	Plastic 500ml - with Nitric Acid	<2			

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ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-158080-1
Client Project/Site: CCR DTE Belle River Power

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

Attn: Mr. Vincent Buening

Authorized for release by:
11/1/2021 4:20:42 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
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: 240-158080-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-158080-1

Comments
No additional comments.

Receipt
The samples were received on 10/15/2021 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 0.5º C.

Metals
Method 6020: The method blank for 240-508683 contained Iron above the reporting limit (RL). This compound is considered a common laboratory contaminant. The associated samples was not re-analyzed because the concentration of the common lab contaminant in the method blank was less than 2 times the RL. MW-16-01 (240-158080-1), MW-16-02 (240-158080-2), MW-16-03 (240-158080-3), MW-16-04 (240-158080-4), MW-16-05 (240-158080-5), MW-16-06 (240-158080-6), MW-16-07 (240-158080-7), MW-16-08 (240-158080-8), MW-16-09 (240-158080-9), MW-16-10 (240-158080-10), MW-16-11A (240-158080-11), DUP-01 (240-158080-12) and EB-01 (240-158080-13)

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

General Chemistry
Method 9056A: The following samples were diluted due to the nature of the sample matrix: MW-16-06 (240-158080-6), MW-16-08 (240-158080-8) and MW-16-11A (240-158080-11). 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 Belle River Power

Job ID: 240-158080-1

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 TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-158080-1	MW-16-01	Water	10/12/21 11:10	10/15/21 08:00
240-158080-2	MW-16-02	Water	10/12/21 12:17	10/15/21 08:00
240-158080-3	MW-16-03	Water	10/12/21 14:15	10/15/21 08:00
240-158080-4	MW-16-04	Water	10/13/21 09:05	10/15/21 08:00
240-158080-5	MW-16-05	Water	10/13/21 10:45	10/15/21 08:00
240-158080-6	MW-16-06	Water	10/13/21 12:00	10/15/21 08:00
240-158080-7	MW-16-07	Water	10/13/21 12:28	10/15/21 08:00
240-158080-8	MW-16-08	Water	10/13/21 11:32	10/15/21 08:00
240-158080-9	MW-16-09	Water	10/12/21 15:24	10/15/21 08:00
240-158080-10	MW-16-10	Water	10/13/21 09:03	10/15/21 08:00
240-158080-11	MW-16-11A	Water	10/13/21 10:32	10/15/21 08:00
240-158080-12	DUP-01	Water	10/12/21 00:00	10/15/21 08:00
240-158080-13	EB-01	Water	10/12/21 14:00	10/15/21 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-01 — Lab Sample ID: 240-158080-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100	F1 F2	100	57	ug/L	1		6010B	Total Recoverable
Calcium	43000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	1100	B	100	100	ug/L	1		6020	Total Recoverable
Chloride	460		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.7		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	25		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1000		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02 — Lab Sample ID: 240-158080-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1200		100	57	ug/L	1		6010B	Total Recoverable
Calcium	56000	F1	1000	1000	ug/L	1		6020	Total Recoverable
Iron	1100	B	100	100	ug/L	1		6020	Total Recoverable
Chloride	360		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.2		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	5.1		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	720		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03 — Lab Sample ID: 240-158080-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1000		100	57	ug/L	1		6010B	Total Recoverable
Calcium	31000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	860	B	100	100	ug/L	1		6020	Total Recoverable
Chloride	580		10	10	mg/L	10		9056A	Total/NA
Fluoride	1.8		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1.7		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1100		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-04 — Lab Sample ID: 240-158080-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	990		100	57	ug/L	1		6010B	Total Recoverable
Calcium	46000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	1900	B	100	100	ug/L	1		6020	Total Recoverable
Chloride	490		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.7		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	28		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1100		20	20	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-05 — Lab Sample ID: 240-158080-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1700		100	57	ug/L	1		6010B	Total Recoverable
Calcium	34000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	2000	B	100	100	ug/L	1		6020	Total Recoverable
Chloride	1500		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.2		0.25	0.25	mg/L	5		9056A	Total/NA
Sulfate	7.9		5.0	5.0	mg/L	5		9056A	Total/NA
Total Dissolved Solids	2700		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-06 — Lab Sample ID: 240-158080-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1900		100	57	ug/L	1		6010B	Total Recoverable
Calcium	32000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	590	B	100	100	ug/L	1		6020	Total Recoverable
Chloride	1600		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.2		0.25	0.25	mg/L	5		9056A	Total/NA
Total Dissolved Solids	2400		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-07 — Lab Sample ID: 240-158080-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1900		100	57	ug/L	1		6010B	Total Recoverable
Calcium	37000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	3500	B	100	100	ug/L	1		6020	Total Recoverable
Chloride	1700		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.2		0.25	0.25	mg/L	5		9056A	Total/NA
Sulfate	42		5.0	5.0	mg/L	5		9056A	Total/NA
Total Dissolved Solids	3000		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-08 — Lab Sample ID: 240-158080-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1800		100	57	ug/L	1		6010B	Total Recoverable
Calcium	54000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	8300	B	100	100	ug/L	1		6020	Total Recoverable
Chloride	1800		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.2		0.25	0.25	mg/L	5		9056A	Total/NA
Total Dissolved Solids	3300		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-09 — Lab Sample ID: 240-158080-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1500		100	57	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16-09 (Continued) — Lab Sample ID: 240-158080-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	44000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	12000	B	100	100	ug/L	1		6020	Total Recoverable
Chloride	970		10	10	mg/L	10		9056A	Total/NA
Fluoride	1.5		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	13		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1700		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-10 — Lab Sample ID: 240-158080-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1900		100	57	ug/L	1		6010B	Total Recoverable
Calcium	30000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	4000	B	100	100	ug/L	1		6020	Total Recoverable
Chloride	1500		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.1		0.25	0.25	mg/L	5		9056A	Total/NA
Sulfate	72		5.0	5.0	mg/L	5		9056A	Total/NA
Total Dissolved Solids	3100		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-11A — Lab Sample ID: 240-158080-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1800		100	57	ug/L	1		6010B	Total Recoverable
Calcium	36000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	820	B	100	100	ug/L	1		6020	Total Recoverable
Chloride	1700		20	20	mg/L	20		9056A	Total/NA
Fluoride	1.0		0.25	0.25	mg/L	5		9056A	Total/NA
Total Dissolved Solids	2800		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01 — Lab Sample ID: 240-158080-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100	57	ug/L	1		6010B	Total Recoverable
Calcium	42000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	930	B	100	100	ug/L	1		6020	Total Recoverable
Chloride	460		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	1.7		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	23		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1000		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: EB-01 — Lab Sample ID: 240-158080-13

No Detections.

This Detection Summary does not include radiochemical test results.

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-01

Lab Sample ID: 240-158080-1

Date Collected: 10/12/21 11:10

Matrix: Water

Date Received: 10/15/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100	F1 F2	100	57	ug/L		10/18/21 14:00	10/20/21 15:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	43000		1000	1000	ug/L		10/18/21 14:00	10/20/21 15:06	1
Iron	1100	B	100	100	ug/L		10/18/21 14:00	10/20/21 15:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	460		5.0	5.0	mg/L			10/27/21 18:13	5
Fluoride	1.7		0.050	0.050	mg/L			10/27/21 17:53	1
Sulfate	25		1.0	1.0	mg/L			10/27/21 17:53	1
Total Dissolved Solids	1000		20	20	mg/L			10/18/21 07:28	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-02
Date Collected: 10/12/21 12:17
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1200		100	57	ug/L		10/18/21 14:00	10/20/21 15:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	56000	F1	1000	1000	ug/L		10/18/21 14:00	10/20/21 15:09	1
Iron	1100	B	100	100	ug/L		10/18/21 14:00	10/20/21 15:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	360		5.0	5.0	mg/L			10/27/21 19:33	5
Fluoride	1.2		0.050	0.050	mg/L			10/27/21 18:33	1
Sulfate	5.1		1.0	1.0	mg/L			10/27/21 18:33	1
Total Dissolved Solids	720		10	10	mg/L			10/18/21 07:28	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-03

Lab Sample ID: 240-158080-3

Date Collected: 10/12/21 14:15

Matrix: Water

Date Received: 10/15/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1000		100	57	ug/L		10/18/21 14:00	10/20/21 15:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	31000		1000	1000	ug/L		10/18/21 14:00	10/20/21 15:26	1
Iron	860	B	100	100	ug/L		10/18/21 14:00	10/20/21 15:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	580		10	10	mg/L			10/27/21 21:34	10
Fluoride	1.8		0.050	0.050	mg/L			10/27/21 21:14	1
Sulfate	1.7		1.0	1.0	mg/L			10/27/21 21:14	1
Total Dissolved Solids	1100		20	20	mg/L			10/18/21 07:28	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-04

Lab Sample ID: 240-158080-4

Date Collected: 10/13/21 09:05

Matrix: Water

Date Received: 10/15/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	990		100	57	ug/L		10/18/21 14:00	10/20/21 15:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	46000		1000	1000	ug/L		10/18/21 14:00	10/20/21 15:28	1
Iron	1900	B	100	100	ug/L		10/18/21 14:00	10/20/21 15:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	490		5.0	5.0	mg/L			10/27/21 22:15	5
Fluoride	1.7		0.050	0.050	mg/L			10/27/21 21:54	1
Sulfate	28		1.0	1.0	mg/L			10/27/21 21:54	1
Total Dissolved Solids	1100		20	20	mg/L			10/20/21 07:19	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-05

Lab Sample ID: 240-158080-5

Date Collected: 10/13/21 10:45

Matrix: Water

Date Received: 10/15/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1700		100	57	ug/L		10/18/21 14:00	10/20/21 16:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	34000		1000	1000	ug/L		10/18/21 14:00	10/20/21 15:31	1
Iron	2000	B	100	100	ug/L		10/18/21 14:00	10/20/21 15:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1500		20	20	mg/L			10/27/21 22:55	20
Fluoride	1.2		0.25	0.25	mg/L			10/27/21 22:35	5
Sulfate	7.9		5.0	5.0	mg/L			10/27/21 22:35	5
Total Dissolved Solids	2700		40	40	mg/L			10/20/21 07:19	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-06

Date Collected: 10/13/21 12:00
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1900		100	57	ug/L		10/18/21 14:00	10/20/21 16:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	32000		1000	1000	ug/L		10/18/21 14:00	10/20/21 15:33	1
Iron	590	B	100	100	ug/L		10/18/21 14:00	10/20/21 15:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1600		20	20	mg/L			10/27/21 23:35	20
Fluoride	1.2		0.25	0.25	mg/L			10/27/21 23:15	5
Sulfate	5.0	U	5.0	5.0	mg/L			10/27/21 23:15	5
Total Dissolved Solids	2400		50	50	mg/L			10/20/21 07:19	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-07

Lab Sample ID: 240-158080-7

Date Collected: 10/13/21 12:28

Matrix: Water

Date Received: 10/15/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1900		100	57	ug/L		10/18/21 14:00	10/20/21 16:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	37000		1000	1000	ug/L		10/18/21 14:00	10/20/21 15:36	1
Iron	3500	B	100	100	ug/L		10/18/21 14:00	10/20/21 15:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700		20	20	mg/L			10/28/21 00:15	20
Fluoride	1.2		0.25	0.25	mg/L			10/27/21 23:55	5
Sulfate	42		5.0	5.0	mg/L			10/27/21 23:55	5
Total Dissolved Solids	3000		50	50	mg/L			10/20/21 07:19	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-08

Date Collected: 10/13/21 11:32
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-8

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1800		100	57	ug/L		10/18/21 14:00	10/20/21 16:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	54000		1000	1000	ug/L		10/18/21 14:00	10/20/21 15:38	1
Iron	8300	B	100	100	ug/L		10/18/21 14:00	10/20/21 15:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800		20	20	mg/L			10/28/21 01:36	20
Fluoride	1.2		0.25	0.25	mg/L			10/28/21 01:16	5
Sulfate	5.0	U	5.0	5.0	mg/L			10/28/21 01:16	5
Total Dissolved Solids	3300		50	50	mg/L			10/20/21 07:19	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-09
Date Collected: 10/12/21 15:24
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-9
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1500		100	57	ug/L		10/18/21 14:00	10/20/21 16:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	44000		1000	1000	ug/L		10/18/21 14:00	10/20/21 15:41	1
Iron	12000	B	100	100	ug/L		10/18/21 14:00	10/20/21 15:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	970		10	10	mg/L			10/28/21 02:16	10
Fluoride	1.5		0.050	0.050	mg/L			10/28/21 01:56	1
Sulfate	13		1.0	1.0	mg/L			10/28/21 01:56	1
Total Dissolved Solids	1700		40	40	mg/L			10/18/21 07:28	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-10

Lab Sample ID: 240-158080-10

Date Collected: 10/13/21 09:03

Matrix: Water

Date Received: 10/15/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1900		100	57	ug/L		10/18/21 14:00	10/20/21 16:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	30000		1000	1000	ug/L		10/18/21 14:00	10/20/21 15:48	1
Iron	4000	B	100	100	ug/L		10/18/21 14:00	10/20/21 15:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1500		20	20	mg/L			10/28/21 02:56	20
Fluoride	1.1		0.25	0.25	mg/L			10/28/21 02:36	5
Sulfate	72		5.0	5.0	mg/L			10/28/21 02:36	5
Total Dissolved Solids	3100		50	50	mg/L			10/20/21 07:19	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-11A

Date Collected: 10/13/21 10:32
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-11

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1800		100	57	ug/L		10/18/21 14:00	10/20/21 16:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	36000		1000	1000	ug/L		10/18/21 14:00	10/20/21 15:50	1
Iron	820	B	100	100	ug/L		10/18/21 14:00	10/20/21 15:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700		20	20	mg/L			10/28/21 03:36	20
Fluoride	1.0		0.25	0.25	mg/L			10/28/21 03:16	5
Sulfate	5.0	U	5.0	5.0	mg/L			10/28/21 03:16	5
Total Dissolved Solids	2800		50	50	mg/L			10/20/21 07:19	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: DUP-01

Date Collected: 10/12/21 00:00
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-12

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		100	57	ug/L		10/18/21 14:00	10/20/21 16:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	42000		1000	1000	ug/L		10/18/21 14:00	10/20/21 15:53	1
Iron	930	B	100	100	ug/L		10/18/21 14:00	10/20/21 15:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	460		5.0	5.0	mg/L			10/28/21 04:17	5
Fluoride	1.7		0.050	0.050	mg/L			10/28/21 03:56	1
Sulfate	23		1.0	1.0	mg/L			10/28/21 03:56	1
Total Dissolved Solids	1000		20	20	mg/L			10/18/21 07:28	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: EB-01

Date Collected: 10/12/21 14:00
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-13

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	57	ug/L		10/18/21 14:00	10/20/21 16:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		10/18/21 14:00	10/20/21 15:55	1
Iron	100	U	100	100	ug/L		10/18/21 14:00	10/20/21 15:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			10/28/21 05:17	1
Fluoride	0.050	U	0.050	0.050	mg/L			10/28/21 05:17	1
Sulfate	1.0	U	1.0	1.0	mg/L			10/28/21 05:17	1
Total Dissolved Solids	10	U	10	10	mg/L			10/18/21 07:28	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-508683/1-A
Matrix: Water
Analysis Batch: 509204

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 508683

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	57	ug/L		10/18/21 14:00	10/20/21 15:03	1

Lab Sample ID: LCS 240-508683/2-A
Matrix: Water
Analysis Batch: 509204

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 508683

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	1010		ug/L		101	80 - 120

Lab Sample ID: 240-158080-1 MS
Matrix: Water
Analysis Batch: 509204

Client Sample ID: MW-16-01
Prep Type: Total Recoverable
Prep Batch: 508683

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1100	F1 F2	1000	1790	F1	ug/L		74	75 - 125

Lab Sample ID: 240-158080-1 MSD
Matrix: Water
Analysis Batch: 509204

Client Sample ID: MW-16-01
Prep Type: Total Recoverable
Prep Batch: 508683

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1100	F1 F2	2000	3400	F2	ug/L		117	75 - 125	62	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-508683/1-A
Matrix: Water
Analysis Batch: 509206

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 508683

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		10/18/21 14:00	10/20/21 15:01	1
Iron	107		100	100	ug/L		10/18/21 14:00	10/20/21 15:01	1

Lab Sample ID: LCS 240-508683/3-A
Matrix: Water
Analysis Batch: 509206

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 508683

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25000	24100		ug/L		96	80 - 120
Iron	5000	5040		ug/L		101	80 - 120

Lab Sample ID: 240-158080-2 MS
Matrix: Water
Analysis Batch: 509206

Client Sample ID: MW-16-02
Prep Type: Total Recoverable
Prep Batch: 508683

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	56000	F1	25000	77300		ug/L		85	75 - 125
Iron	1100	B	5000	6230		ug/L		104	75 - 125

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

Lab Sample ID: 240-158080-2 MSD
Matrix: Water
Analysis Batch: 509206

Client Sample ID: MW-16-02
Prep Type: Total Recoverable
Prep Batch: 508683

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	56000	F1	25000	67200	F1	ug/L		44	75 - 125	14	20
Iron	1100	B	5000	5370		ug/L		86	75 - 125	15	20

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-510004/3
Matrix: Water
Analysis Batch: 510004

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			10/27/21 17:12	1
Fluoride	0.050	U	0.050	0.050	mg/L			10/27/21 17:12	1
Sulfate	1.0	U	1.0	1.0	mg/L			10/27/21 17:12	1

Lab Sample ID: LCS 240-510004/4
Matrix: Water
Analysis Batch: 510004

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	50.0		mg/L		100	90 - 110
Fluoride	2.50	2.56		mg/L		102	90 - 110
Sulfate	50.0	50.5		mg/L		101	90 - 110

Lab Sample ID: 240-158080-2 MS
Matrix: Water
Analysis Batch: 510004

Client Sample ID: MW-16-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.2		2.50	3.83		mg/L		105	80 - 120
Sulfate	5.1		50.0	58.8		mg/L		107	80 - 120

Lab Sample ID: 240-158080-2 MS
Matrix: Water
Analysis Batch: 510004

Client Sample ID: MW-16-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	360		250	598		mg/L		96	80 - 120

Lab Sample ID: 240-158080-2 MSD
Matrix: Water
Analysis Batch: 510004

Client Sample ID: MW-16-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.2		2.50	3.88		mg/L		107	80 - 120	1	15
Sulfate	5.1		50.0	59.7		mg/L		109	80 - 120	2	15

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 240-158080-2 MSD
Matrix: Water
Analysis Batch: 510004

Client Sample ID: MW-16-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	360		250	596		mg/L		95	80 - 120	0	15

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

Lab Sample ID: MB 240-508608/1
Matrix: Water
Analysis Batch: 508608

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			10/18/21 07:28	1

Lab Sample ID: LCS 240-508608/2
Matrix: Water
Analysis Batch: 508608

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	506		mg/L		101	80 - 120		

Lab Sample ID: MB 240-509019/1
Matrix: Water
Analysis Batch: 509019

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			10/20/21 07:19	1

Lab Sample ID: LCS 240-509019/2
Matrix: Water
Analysis Batch: 509019

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	514		mg/L		103	80 - 120		

Metals

Prep Batch: 508683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158080-1	MW-16-01	Total Recoverable	Water	3005A	
240-158080-2	MW-16-02	Total Recoverable	Water	3005A	
240-158080-3	MW-16-03	Total Recoverable	Water	3005A	
240-158080-4	MW-16-04	Total Recoverable	Water	3005A	
240-158080-5	MW-16-05	Total Recoverable	Water	3005A	
240-158080-6	MW-16-06	Total Recoverable	Water	3005A	
240-158080-7	MW-16-07	Total Recoverable	Water	3005A	
240-158080-8	MW-16-08	Total Recoverable	Water	3005A	
240-158080-9	MW-16-09	Total Recoverable	Water	3005A	
240-158080-10	MW-16-10	Total Recoverable	Water	3005A	
240-158080-11	MW-16-11A	Total Recoverable	Water	3005A	
240-158080-12	DUP-01	Total Recoverable	Water	3005A	
240-158080-13	EB-01	Total Recoverable	Water	3005A	
MB 240-508683/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-508683/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-508683/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-158080-1 MS	MW-16-01	Total Recoverable	Water	3005A	
240-158080-1 MSD	MW-16-01	Total Recoverable	Water	3005A	
240-158080-2 MS	MW-16-02	Total Recoverable	Water	3005A	
240-158080-2 MSD	MW-16-02	Total Recoverable	Water	3005A	

Analysis Batch: 509204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158080-1	MW-16-01	Total Recoverable	Water	6010B	508683
240-158080-2	MW-16-02	Total Recoverable	Water	6010B	508683
240-158080-3	MW-16-03	Total Recoverable	Water	6010B	508683
240-158080-4	MW-16-04	Total Recoverable	Water	6010B	508683
240-158080-5	MW-16-05	Total Recoverable	Water	6010B	508683
240-158080-6	MW-16-06	Total Recoverable	Water	6010B	508683
240-158080-7	MW-16-07	Total Recoverable	Water	6010B	508683
240-158080-8	MW-16-08	Total Recoverable	Water	6010B	508683
240-158080-9	MW-16-09	Total Recoverable	Water	6010B	508683
240-158080-10	MW-16-10	Total Recoverable	Water	6010B	508683
240-158080-11	MW-16-11A	Total Recoverable	Water	6010B	508683
240-158080-12	DUP-01	Total Recoverable	Water	6010B	508683
240-158080-13	EB-01	Total Recoverable	Water	6010B	508683
MB 240-508683/1-A	Method Blank	Total Recoverable	Water	6010B	508683
LCS 240-508683/2-A	Lab Control Sample	Total Recoverable	Water	6010B	508683
240-158080-1 MS	MW-16-01	Total Recoverable	Water	6010B	508683
240-158080-1 MSD	MW-16-01	Total Recoverable	Water	6010B	508683

Analysis Batch: 509206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158080-1	MW-16-01	Total Recoverable	Water	6020	508683
240-158080-2	MW-16-02	Total Recoverable	Water	6020	508683
240-158080-3	MW-16-03	Total Recoverable	Water	6020	508683
240-158080-4	MW-16-04	Total Recoverable	Water	6020	508683
240-158080-5	MW-16-05	Total Recoverable	Water	6020	508683
240-158080-6	MW-16-06	Total Recoverable	Water	6020	508683
240-158080-7	MW-16-07	Total Recoverable	Water	6020	508683
240-158080-8	MW-16-08	Total Recoverable	Water	6020	508683

Metals (Continued)

Analysis Batch: 509206 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158080-9	MW-16-09	Total Recoverable	Water	6020	508683
240-158080-10	MW-16-10	Total Recoverable	Water	6020	508683
240-158080-11	MW-16-11A	Total Recoverable	Water	6020	508683
240-158080-12	DUP-01	Total Recoverable	Water	6020	508683
240-158080-13	EB-01	Total Recoverable	Water	6020	508683
MB 240-508683/1-A	Method Blank	Total Recoverable	Water	6020	508683
LCS 240-508683/3-A	Lab Control Sample	Total Recoverable	Water	6020	508683
240-158080-2 MS	MW-16-02	Total Recoverable	Water	6020	508683
240-158080-2 MSD	MW-16-02	Total Recoverable	Water	6020	508683

General Chemistry

Analysis Batch: 508608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158080-1	MW-16-01	Total/NA	Water	SM 2540C	
240-158080-2	MW-16-02	Total/NA	Water	SM 2540C	
240-158080-3	MW-16-03	Total/NA	Water	SM 2540C	
240-158080-9	MW-16-09	Total/NA	Water	SM 2540C	
240-158080-12	DUP-01	Total/NA	Water	SM 2540C	
240-158080-13	EB-01	Total/NA	Water	SM 2540C	
MB 240-508608/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-508608/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 509019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158080-4	MW-16-04	Total/NA	Water	SM 2540C	
240-158080-5	MW-16-05	Total/NA	Water	SM 2540C	
240-158080-6	MW-16-06	Total/NA	Water	SM 2540C	
240-158080-7	MW-16-07	Total/NA	Water	SM 2540C	
240-158080-8	MW-16-08	Total/NA	Water	SM 2540C	
240-158080-10	MW-16-10	Total/NA	Water	SM 2540C	
240-158080-11	MW-16-11A	Total/NA	Water	SM 2540C	
MB 240-509019/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-509019/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 510004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158080-1	MW-16-01	Total/NA	Water	9056A	
240-158080-1	MW-16-01	Total/NA	Water	9056A	
240-158080-2	MW-16-02	Total/NA	Water	9056A	
240-158080-2	MW-16-02	Total/NA	Water	9056A	
240-158080-3	MW-16-03	Total/NA	Water	9056A	
240-158080-3	MW-16-03	Total/NA	Water	9056A	
240-158080-4	MW-16-04	Total/NA	Water	9056A	
240-158080-4	MW-16-04	Total/NA	Water	9056A	
240-158080-5	MW-16-05	Total/NA	Water	9056A	
240-158080-5	MW-16-05	Total/NA	Water	9056A	
240-158080-6	MW-16-06	Total/NA	Water	9056A	
240-158080-6	MW-16-06	Total/NA	Water	9056A	
240-158080-7	MW-16-07	Total/NA	Water	9056A	
240-158080-7	MW-16-07	Total/NA	Water	9056A	

General Chemistry (Continued)

Analysis Batch: 510004 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158080-8	MW-16-08	Total/NA	Water	9056A	
240-158080-8	MW-16-08	Total/NA	Water	9056A	
240-158080-9	MW-16-09	Total/NA	Water	9056A	
240-158080-9	MW-16-09	Total/NA	Water	9056A	
240-158080-10	MW-16-10	Total/NA	Water	9056A	
240-158080-10	MW-16-10	Total/NA	Water	9056A	
240-158080-11	MW-16-11A	Total/NA	Water	9056A	
240-158080-11	MW-16-11A	Total/NA	Water	9056A	
240-158080-12	DUP-01	Total/NA	Water	9056A	
240-158080-12	DUP-01	Total/NA	Water	9056A	
240-158080-13	EB-01	Total/NA	Water	9056A	
MB 240-510004/3	Method Blank	Total/NA	Water	9056A	
LCS 240-510004/4	Lab Control Sample	Total/NA	Water	9056A	
240-158080-2 MS	MW-16-02	Total/NA	Water	9056A	
240-158080-2 MS	MW-16-02	Total/NA	Water	9056A	
240-158080-2 MSD	MW-16-02	Total/NA	Water	9056A	
240-158080-2 MSD	MW-16-02	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-01

Lab Sample ID: 240-158080-1

Date Collected: 10/12/21 11:10

Matrix: Water

Date Received: 10/15/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 15:12	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:06	AJC	TAL CAN
Total/NA	Analysis	9056A		1	510004	10/27/21 17:53	JWW	TAL CAN
Total/NA	Analysis	9056A		5	510004	10/27/21 18:13	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	508608	10/18/21 07:28	AJ	TAL CAN

Client Sample ID: MW-16-02

Lab Sample ID: 240-158080-2

Date Collected: 10/12/21 12:17

Matrix: Water

Date Received: 10/15/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 15:37	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:09	AJC	TAL CAN
Total/NA	Analysis	9056A		1	510004	10/27/21 18:33	JWW	TAL CAN
Total/NA	Analysis	9056A		5	510004	10/27/21 19:33	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	508608	10/18/21 07:28	AJ	TAL CAN

Client Sample ID: MW-16-03

Lab Sample ID: 240-158080-3

Date Collected: 10/12/21 14:15

Matrix: Water

Date Received: 10/15/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 15:53	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:26	AJC	TAL CAN
Total/NA	Analysis	9056A		1	510004	10/27/21 21:14	JWW	TAL CAN
Total/NA	Analysis	9056A		10	510004	10/27/21 21:34	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	508608	10/18/21 07:28	AJ	TAL CAN

Client Sample ID: MW-16-04

Lab Sample ID: 240-158080-4

Date Collected: 10/13/21 09:05

Matrix: Water

Date Received: 10/15/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 15:58	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:28	AJC	TAL CAN
Total/NA	Analysis	9056A		1	510004	10/27/21 21:54	JWW	TAL CAN

Client Sample ID: MW-16-04

Lab Sample ID: 240-158080-4

Date Collected: 10/13/21 09:05

Matrix: Water

Date Received: 10/15/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	510004	10/27/21 22:15	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509019	10/20/21 07:19	AJ	TAL CAN

Client Sample ID: MW-16-05

Lab Sample ID: 240-158080-5

Date Collected: 10/13/21 10:45

Matrix: Water

Date Received: 10/15/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 16:02	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:31	AJC	TAL CAN
Total/NA	Analysis	9056A		5	510004	10/27/21 22:35	JWW	TAL CAN
Total/NA	Analysis	9056A		20	510004	10/27/21 22:55	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509019	10/20/21 07:19	AJ	TAL CAN

Client Sample ID: MW-16-06

Lab Sample ID: 240-158080-6

Date Collected: 10/13/21 12:00

Matrix: Water

Date Received: 10/15/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 16:06	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:33	AJC	TAL CAN
Total/NA	Analysis	9056A		5	510004	10/27/21 23:15	JWW	TAL CAN
Total/NA	Analysis	9056A		20	510004	10/27/21 23:35	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509019	10/20/21 07:19	AJ	TAL CAN

Client Sample ID: MW-16-07

Lab Sample ID: 240-158080-7

Date Collected: 10/13/21 12:28

Matrix: Water

Date Received: 10/15/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 16:19	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:36	AJC	TAL CAN
Total/NA	Analysis	9056A		5	510004	10/27/21 23:55	JWW	TAL CAN
Total/NA	Analysis	9056A		20	510004	10/28/21 00:15	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509019	10/20/21 07:19	AJ	TAL CAN

Client Sample ID: MW-16-08

Lab Sample ID: 240-158080-8

Date Collected: 10/13/21 11:32

Matrix: Water

Date Received: 10/15/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 16:23	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:38	AJC	TAL CAN
Total/NA	Analysis	9056A		5	510004	10/28/21 01:16	JWW	TAL CAN
Total/NA	Analysis	9056A		20	510004	10/28/21 01:36	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509019	10/20/21 07:19	AJ	TAL CAN

Client Sample ID: MW-16-09

Lab Sample ID: 240-158080-9

Date Collected: 10/12/21 15:24

Matrix: Water

Date Received: 10/15/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 16:28	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:41	AJC	TAL CAN
Total/NA	Analysis	9056A		1	510004	10/28/21 01:56	JWW	TAL CAN
Total/NA	Analysis	9056A		10	510004	10/28/21 02:16	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	508608	10/18/21 07:28	AJ	TAL CAN

Client Sample ID: MW-16-10

Lab Sample ID: 240-158080-10

Date Collected: 10/13/21 09:03

Matrix: Water

Date Received: 10/15/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 16:32	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:48	AJC	TAL CAN
Total/NA	Analysis	9056A		5	510004	10/28/21 02:36	JWW	TAL CAN
Total/NA	Analysis	9056A		20	510004	10/28/21 02:56	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509019	10/20/21 07:19	AJ	TAL CAN

Client Sample ID: MW-16-11A

Lab Sample ID: 240-158080-11

Date Collected: 10/13/21 10:32

Matrix: Water

Date Received: 10/15/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 16:36	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:50	AJC	TAL CAN
Total/NA	Analysis	9056A		5	510004	10/28/21 03:16	JWW	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-158080-1

Client Sample ID: MW-16-11A

Date Collected: 10/13/21 10:32
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		20	510004	10/28/21 03:36	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	509019	10/20/21 07:19	AJ	TAL CAN

Client Sample ID: DUP-01

Date Collected: 10/12/21 00:00
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 16:41	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:53	AJC	TAL CAN
Total/NA	Analysis	9056A		1	510004	10/28/21 03:56	JWW	TAL CAN
Total/NA	Analysis	9056A		5	510004	10/28/21 04:17	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	508608	10/18/21 07:28	AJ	TAL CAN

Client Sample ID: EB-01

Date Collected: 10/12/21 14:00
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	509204	10/20/21 16:45	KLC	TAL CAN
Total Recoverable	Prep	3005A			508683	10/18/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	509206	10/20/21 15:55	AJC	TAL CAN
Total/NA	Analysis	9056A		1	510004	10/28/21 05:17	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	508608	10/18/21 07:28	AJ	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation.
Job ID: 240-158080-1
Project/Site: CCR DTE Belle River Power

Laboratory: Eurofins TestAmerica, 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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

0.4/0.5

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone (330) 497-9396 Phone (330) 497-0772

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler: Jake Krenz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-86592-33142.1
Client Contact: Jacob Krenz	Phone: 734-395-9804	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin:	Page: Page 1 of 2
Company: TRC Environmental Corporation.	PWSID:			Job #:

Address: 1540 Eisenhower Place	Due Date Requested:	Analysis Requested	Preservation Codes:
City: Ann Arbor	TAT Requested (days):		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)
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No		
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: TBD		
Email: JKrenz@trccompanies.com	WO #: 370029.0003 P1 T2		
Project Name: CCR DTE Belle River Power	Project #: 24016463		
Site: Michigan	SSOW#:		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)	2540C_Calcd TDS, 9056A_28D Chloride, Fluride, Sulfate	6010B Bo, 6020 Ca, Fe	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D		
MW-16-01	10-12-21	1110	G	Water	N	N	X	X		
MW-16-02	10-12-21	1217		Water	N	N	X	X		
MW-16-03	10-12-21	1415		Water	N	N	X	X		
MW-16-04	10-13-21	0905		Water	N	N	X	X		
MW-16-05		1045		Water	N	N	X	X		
MW-16-06		1200		Water	N	N	X	X		
MW-16-07		1228		Water	N	N	X	X		
MW-16-08		1132		Water	N	N	X	X		
MW-16-09	10-12-21	1524		Water	N	N	X	X		
MW-16-10	10-13-21	0903		Water	N	N	X	X		
MW-16-11A	10-13-21	1032		Water	N	N	X	X		

240-158080 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		10-14-21 / 1417	TRC		10/14/21 1420	ETA
2	Relinquished by:	10/14/21 1420	ETA	Received by:	10-15-21 8:00	ETA
3	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

0.4/0.5

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone (330) 497-9396 Phone (330) 497-0772

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler: Jake Krenz	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-86592-33142.2
Client Contact: Jacob Krenz	Phone: 734-395-9804	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin:	Page: Page 2 of 2
Company: TRC Environmental Corporation.	PWSID:	Analysis Requested		Job #:
Address: 1540 Eisenhower Place	Due Date 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)
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 #: TBD			
Email: JKrenz@trccompanies.com	WO #: 370029.0003 P1 T2			
Project Name: CCR DTE Belle River Power	Project #: 24016463			
Site: Michigan	SSOW#:			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)	2540C_Calcd TDS, 9056A_28D Chloride, Fluoride, Sulfate	6010B, 60206010B Bo, 6020 Ca, Fe	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D		
DUP-01	10-12-13	—	G	Water	N	N	X	X		
EB-01	10-12-13	1400	G	Water	N	N	X	X		
				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)

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 Krenz	10-14-21 / 1417	TRC	Libby Mr	10/14/21 1420	ETA
2	Libby Mr	10/14/21 1420	ETA	Mandy Block	10-15-21 8:00	CM
3						

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

11/1/2021

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 158080**
Canton Facility

Client TRC Site Name _____ Cooler unpacked by: Mandy Bloer

Cooler Received on 10-15-21 Opened on 10-15-21

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

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

TestAmerica 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-14 (CF +0.1 °C) Observed Cooler Temp. 0.4 °C Corrected Cooler Temp. 0.5 °C
   IR GUN #IR-15 (CF +0.2°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)?		
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: _____

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ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-161244-1
Client Project/Site: CCR DTE Belle River Power

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

Attn: Mr. Vincent Buening

Authorized for release by:
12/16/2021 8:25:09 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

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

Case Narrative

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

Job ID: 240-161244-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-161244-1

Comments
No additional comments.

Receipt
The samples were received on 12/10/2021 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 0.7º C.

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

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

Method Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	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 TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-161244-1	MW-16-09_2021126	Water	12/06/21 11:05	12/10/21 08:00
240-161244-2	DUP-01_2021126	Water	12/06/21 00:00	12/10/21 08:00
240-161244-3	MW-16-08_2021127	Water	12/07/21 09:25	12/10/21 08:00
240-161244-4	DUP-02_2021127	Water	12/07/21 00:00	12/10/21 08:00
240-161244-5	EB-01_2021127	Water	12/07/21 09:30	12/10/21 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

Client Sample ID: MW-16-09_2021126 — Lab Sample ID: 240-161244-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	45000		1000	1000	ug/L	1		6020	Total Recoverable

Client Sample ID: DUP-01_2021126 — Lab Sample ID: 240-161244-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	45000		1000	1000	ug/L	1		6020	Total Recoverable

Client Sample ID: MW-16-08_2021127 — Lab Sample ID: 240-161244-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	3200		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-02_2021127 — Lab Sample ID: 240-161244-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	3200		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: EB-01_2021127 — Lab Sample ID: 240-161244-5

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

Client Sample ID: MW-16-09_2021126
Date Collected: 12/06/21 11:05
Date Received: 12/10/21 08:00

Lab Sample ID: 240-161244-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	45000		1000	1000	ug/L		12/13/21 14:00	12/14/21 16:25	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

Client Sample ID: DUP-01_2021126
Date Collected: 12/06/21 00:00
Date Received: 12/10/21 08:00

Lab Sample ID: 240-161244-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	45000		1000	1000	ug/L		12/13/21 14:00	12/14/21 16:27	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

Client Sample ID: MW-16-08_2021127
Date Collected: 12/07/21 09:25
Date Received: 12/10/21 08:00

Lab Sample ID: 240-161244-3
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3200		50	50	mg/L			12/13/21 09:50	1

Client Sample Results

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

Client Sample ID: DUP-02_2021127
Date Collected: 12/07/21 00:00
Date Received: 12/10/21 08:00

Lab Sample ID: 240-161244-4
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3200		50	50	mg/L			12/13/21 09:50	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

Client Sample ID: EB-01_2021127
Date Collected: 12/07/21 09:30
Date Received: 12/10/21 08:00

Lab Sample ID: 240-161244-5
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			12/13/21 09:50	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-516526/1-A
Matrix: Water
Analysis Batch: 516825

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 516526

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	1000	U	1000	1000	ug/L		12/13/21 14:00	12/14/21 16:08	1

Lab Sample ID: LCS 240-516526/2-A
Matrix: Water
Analysis Batch: 516825

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 516526

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25000	24900		ug/L		100	80 - 120

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

Lab Sample ID: MB 240-516527/1
Matrix: Water
Analysis Batch: 516527

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			12/13/21 09:50	1

Lab Sample ID: LCS 240-516527/2
Matrix: Water
Analysis Batch: 516527

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	150	139		mg/L		93	80 - 120

QC Association Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

Metals

Prep Batch: 516526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-161244-1	MW-16-09_2021126	Total Recoverable	Water	3005A	
240-161244-2	DUP-01_2021126	Total Recoverable	Water	3005A	
MB 240-516526/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-516526/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 516825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-161244-1	MW-16-09_2021126	Total Recoverable	Water	6020	516526
240-161244-2	DUP-01_2021126	Total Recoverable	Water	6020	516526
MB 240-516526/1-A	Method Blank	Total Recoverable	Water	6020	516526
LCS 240-516526/2-A	Lab Control Sample	Total Recoverable	Water	6020	516526

General Chemistry

Analysis Batch: 516527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-161244-3	MW-16-08_2021127	Total/NA	Water	SM 2540C	
240-161244-4	DUP-02_2021127	Total/NA	Water	SM 2540C	
240-161244-5	EB-01_2021127	Total/NA	Water	SM 2540C	
MB 240-516527/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-516527/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE Belle River Power

Job ID: 240-161244-1

Client Sample ID: MW-16-09_2021126

Lab Sample ID: 240-161244-1
Matrix: Water
Date Collected: 12/06/21 11:05
Date Received: 12/10/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			516526	12/13/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	516825	12/14/21 16:25	DSH	TAL CAN

Client Sample ID: DUP-01_2021126

Lab Sample ID: 240-161244-2
Matrix: Water
Date Collected: 12/06/21 00:00
Date Received: 12/10/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			516526	12/13/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	516825	12/14/21 16:27	DSH	TAL CAN

Client Sample ID: MW-16-08_2021127

Lab Sample ID: 240-161244-3
Matrix: Water
Date Collected: 12/07/21 09:25
Date Received: 12/10/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	516527	12/13/21 09:50	KMS	TAL CAN

Client Sample ID: DUP-02_2021127

Lab Sample ID: 240-161244-4
Matrix: Water
Date Collected: 12/07/21 00:00
Date Received: 12/10/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	516527	12/13/21 09:50	KMS	TAL CAN

Client Sample ID: EB-01_2021127

Lab Sample ID: 240-161244-5
Matrix: Water
Date Collected: 12/07/21 09:30
Date Received: 12/10/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	516527	12/13/21 09:50	KMS	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: TRC Environmental Corporation.
Job ID: 240-161244-1
Project/Site: CCR DTE Belle River Power

Laboratory: Eurofins TestAmerica, 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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone: 330-497-9396 Fax: 330-497-0772

0-6107

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: 240-89260-33862.1
Client Contact: Mr. Vincent Buening	Phone:	E-Mail: Kris.Brooks@Eurofinset.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): 3 day			
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: TBD			
Email: vbuening@trccompanies.com	WO #: 370029.0003 P1 T2			
Project Name: CCR DTE Belle River Power	Project #: 24016463			
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)	2540C_Calcd - TDS	6020 - (MOD) Metals - Ca	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D		
MW-16-09_20211126	12.6.21	1105	G	Water	N	N		X	1	
DUP-01_20211126			G	Water	N	N		X	1	
MW-16-08_20211127	12.7.21	0925	G	Water	N	N	X		1	
DUP-02_20211127			G	Water	N	N	X		1	
EB-01_20211127	12.7.21	0930	G	Water	N	N	X	X	1	

240-161244 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	Andrew Whaley	12.7.21 1140	TRC	TRC Storage	12.7.21 1140	TRC
2		12/9/21 1030	TRC		12/9 10:30	ETA
3		12/9/21 13:50	ETA		12-10-21 800	ETA

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 162444**
Canton Facility

Client IRC Site Name _____ Cooler unpacked by: Nancy Lorge

Cooler Received on 12-10-21 Opened on 12-10-21

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-14 (CF +0.1 °C) Observed Cooler Temp. 0.6 °C Corrected Cooler Temp. 0.7 °C

IR GUN #IR-15 (CF +0.2°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)?
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:

Did not receive HNO3 volume for EB-01-202127. Unable to log for metals.

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: _____

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-09_2021126	240-161244-A-1	Plastic 250ml - with Nitric Acid	<2			
DUP-01_2021126	240-161244-A-2	Plastic 250ml - with Nitric Acid	<2			

Appendix B
Data Quality Reviews

Laboratory Data Quality Review
Groundwater Monitoring Event April 2021 (Detection Monitoring)
DTE Electric Company Belle River Power Plant (DTE BRPP)

Groundwater samples were collected by TRC for the April 2021 sampling event for the Bottom Ash Basins and Diversion Basin at the DTE BRPP. Samples were analyzed for anions, total recoverable metals, and total dissolved solids by Eurofins-Test America Laboratories, Inc. (Eurofins-TA), located in North Canton, Ohio. The laboratory analytical results are reported in laboratory report 240-147486-1.

During the April 2021 sampling event, a groundwater sample was collected from each of the following wells:

Bottom Ash Basins:

- MW-16-01
- MW-16-02
- MW-16-03
- MW-16-04
- MW-16-09

Diversion Basin:

- MW-16-05
- MW-16-06
- MW-16-07
- MW-16-08
- MW-16-10
- MW-16-11A

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.

The analytical data were reviewed using the USEPA National Functional Guidelines for Inorganic Superfund Data Review (USEPA, 2017). 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

- There was one equipment blank submitted with this dataset (EB-01). Chloride was detected at 1.7 mg/L in this equipment blank. However, chloride was detected at concentrations greater than five times the blank concentration in the associated wells; thus, there was no impact on data usability.
- Target analytes were not detected in the method blanks.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS and MSD analyses were performed on sample MW-16-01 for total recoverable boron, sample MW-16-08 for fluoride and sulfate, and sample DUP-01 for chloride, fluoride, and sulfate; recoveries and relative percent differences (RPDs) were within the acceptance limits.
- DUP-01 corresponds with MW-16-01; RPDs between the parent and duplicate sample were within the QC limits.

Laboratory Data Quality Review
Groundwater Monitoring Event May 2021 (Detection Monitoring)
DTE Electric Company Belle River Power Plant (DTE BRPP)

Groundwater samples were collected by TRC for the May 2021 sampling event for the Bottom Ash Basins and Diversion Basin at the DTE BRPP. Samples were analyzed for sulfate and total recoverable calcium by Eurofins-Test America Laboratories, Inc. (Eurofins-TA), located in North Canton, Ohio. The laboratory analytical results are reported in laboratory report 240-149986-1.

During the May 2021 sampling event, a groundwater sample was collected from each of the following wells:

Bottom Ash Basins:

- MW-16-01

Diversion Basin:

- MW-16-10

Each 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.

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, equipment blanks, and field blanks. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures. Field and equipment blanks are used to assess potential contamination arising from field procedures;
- Data for laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs), when performed. The LCSs and/or LCSDs are used to assess the accuracy of the analytical method using a clean matrix;
- Percent recoveries for matrix spike (MS) and matrix spike duplicates (MSD), when performed on project samples. Percent recoveries are calculated for each analyte spiked and used to assess bias due to sample matrix effects;

- Data for laboratory duplicates, when performed on project samples. The laboratory duplicates are replicate analyses of one sample and are used to assess the precision of the analytical method;
- 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). Total recoverable calcium and sulfate were not detected in the equipment blank.
- Target analytes were not detected in the method blanks.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were performed on sample MW-16-10 for total recoverable calcium; the percent recoveries (%Rs) and relative percent difference (RPD) were acceptable.
- DUP-01 corresponds with MW-16-01 for sulfate and DUP-02 corresponds with MW-16-10 for total recoverable calcium; RPDs between the parent and duplicate sample were within the QC limits.

Laboratory Data Quality Review
Groundwater Monitoring Event October 2021 (Detection Monitoring)
DTE Electric Company Belle River Power Plant (DTE BRPP)

Groundwater samples were collected by TRC for the October 2021 sampling event for the Bottom Ash Basins and Diversion Basin at the DTE BRPP. Samples were analyzed for anions, total recoverable metals, and total dissolved solids by Eurofins-Test America Laboratories, Inc. (Eurofins-TA), located in North Canton, Ohio. The laboratory analytical results are reported in laboratory report 240-158080-1.

During the October 2021 sampling event, a groundwater sample was collected from each of the following wells:

Bottom Ash Basins:

- MW-16-01
- MW-16-02
- MW-16-03
- MW-16-04
- MW-16-09

Diversion Basin:

- MW-16-05
- MW-16-06
- MW-16-07
- MW-16-08
- MW-16-10
- MW-16-11A

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), 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

- Target analytes were not detected in the equipment blank
- Target analytes were not detected in the method blanks with the exception of iron which was detected in MB-240-5086831/-A at 107 ug/L. However, iron was either non-detect or detected at concentrations greater than five times the method blank concentration in the associated samples; thus, there was no impact on data usability.
- 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 and MW-16-02 for total recoverable calcium and iron and anions; the percent recoveries and relative percent differences (RPDs) were within criteria with the following exceptions.
  - The MS/MSD RPD for boron in sample MW-16-01 was outside of criteria (62%) and the recovery of boron in the MS (74%) was below the control limits. Potential uncertainty exists for the results for boron in all groundwater samples collected during this event, as summarized in the attached table, Appendix B.

  - The recovery of calcium was outside of the control limits in the MSD analysis performed on sample MW-102. The result for calcium in the parent sample was >4x the spike concentration; therefore, the MS/MSD recoveries are not applicable.

- 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 RLs for sulfate in samples MW-16-06, MW-16-08, and MW-16-11A (5.0 mg/L) were above the project-specified RL (1 mg/L) due to a 5-fold dilution likely performed due to elevated concentrations of chloride.

Laboratory Data Quality Review
Groundwater Monitoring Event December 2021 (Detection Monitoring)
DTE Electric Company Belle River Power Plant (DTE BRPP)

Groundwater samples were collected by TRC for the December 2021 sampling event for the Bottom Ash Basins and Diversion Basin at the DTE BRPP. Samples were analyzed for total calcium and total dissolved solids by Eurofins-Test America Laboratories, Inc. (Eurofins-TA), located in North Canton, Ohio. The laboratory analytical results are reported in laboratory report 240-1161244-1.

During the December 2021 sampling event, a groundwater sample was collected from each of the following wells:

Bottom Ash Basins:

- MW-16-09

Diversion Basin:

- MW-16-08

Each sample was analyzed for the following constituents:

Analyte Group	Method
Total Recoverable Calcium	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), 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). Target analytes were not detected in the equipment blank.
- 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 data set.
- DUP-02 corresponds with MW-16-08 and DUP-01 corresponds with MW-16-09; the relative percent differences between the parent and duplicate samples were within the QC limits.
- The nondetect RLs for total dissolved solids in samples MW-16-08 and DUP-02 (50 mg/L) were above the project-specified RL (10 mg/L). Total dissolved solids were detected in both MW-16-08 and DUP-02; therefore, data usability is not affected.

Appendix C
Prediction Limit Update

1540 Eisenhower Pl.
Ann Arbor, MI 48108

T 734.971.7080
TRCcompanies.com

Technical Memorandum

Date:	December 15, 2021
To:	Chris Scieszka, DTE Electric Company
From:	Vince Buening, TRC Sarah Holmstrom, TRC Kristin Lowery, TRC
Project No.:	413591.0003.0000 Phase 1 Task 1
Subject:	Prediction Limit Update – DTE Electric Company, Belle River Power Plant Bottom Ash Basins

Statistical background limits for the DTE Electric Company (DTE Electric) Belle River Power Plant (BRPP) Bottom Ash Basins (BABs) coal combustion residual (CCR) unit were initially established in the January 15, 2018 Technical Memorandum titled "Background Statistical Evaluation" pursuant to the United States Environmental Protection Agency's (U.S. EPA's) Resource Conservation and Recovery Act (RCRA) Federal Final Rule for Hazardous and Solid Waste Management System Disposal of Coal Combustion Residuals from Electric Utilities (herein after "the CCR Rule") promulgated on April 17, 2015, as amended. As described in the initial statistical limit calculation, background was established under a constrained schedule that captured limited natural temporal trends in groundwater quality. In addition, DTE Electric has since established the Hydrogeological Monitoring Plan for the DTE Electric Company Belle River Power Plant Bottom Ash Basins and Diversion Basin Coal Combustion Residuals Units (HMP) (TRC, August 26, 2020; Revised December 8, 2020), to provide a means to comply with applicable monitoring requirements described in the Part 115 of the Natural Resources and Environmental Protection Act, PA 451 of 1994, as amended (Part 115) and the CCR Rule. The HMP was approved by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) on December 18, 2020.

As such, DTE Electric is updating the background statistical limits for the BRPP BABs to include the additional rounds of semiannual monitoring data collected subsequent to the initial statistical limit calculation in 2017. This memorandum presents the updated background statistical limits derived for the BRPP BABs in accordance with the HMP.

Per the HMP, the groundwater monitoring system for the BRPP BABs consists of the following locations for detection monitoring:

- MW-16-01
- MW-16-02
- MW-16-03
- MW-16-04
- MW-16-09

And, per the HMP, statistical analysis is performed for the following detection monitoring parameters:

- Boron
- Calcium
- Chloride
- Fluoride
- Iron
- pH
- Sulfate
- Total Dissolved Solids (TDS)

Due to the limited implementation timeline of the CCR Rule, background data was collected during sampling events spaced one to two months apart to allow the minimum of eight sampling events to be completed before October 17, 2017. The short duration of the background sampling events limits the ability of the statistical analysis to capture the natural temporal variations in the groundwater quality at the BRPP BABs. This limited temporal variability can only be corrected with the collection of additional groundwater data, and the inclusion of the additional data in the background data set updated in the future, as long as data continue to show no impacts from the CCR unit. As a result of site-specific geologic conditions presented in the 2017, 2018, 2019, and 2020 Annual Reports (TRC, January 2018, January 2019, January 2020, and January 2021), downward migration of CCR leachate is not expected due to the presence of a natural geologic barrier (more than 80 feet of native clay-rich soil) that provides protection from potential migration of contaminants, and groundwater data continue to show no impacts from the CCR unit. Therefore, the seven additional rounds of detection monitoring data and the verification sample results[1] have been incorporated into the background dataset and the prediction limit calculations have been updated using data collected from August 2016 through September 2020 as detailed below, with the exception of iron. Iron was recently added to the monitoring program to align with Part 115. Background limits for iron will be calculated once a minimum of eight background data points have been collected.

The background data for the BRPP BABs were evaluated in accordance with the *Groundwater Statistical Evaluation Plan* (Stats Plan) (TRC, October 2017, Revised December 2020). Background data were evaluated in ChemStat™ statistical software. ChemStat™ is a software tool that is commercially available for performing statistical evaluation consistent with procedures outlined in U.S. EPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities (Unified Guidance; UG). Within the ChemStat™ statistical program (and the UG), prediction limits (PLs) were selected to perform the statistical calculation for background limits. Use of PLs is recommended by the UG to provide high statistical power and is an acceptable approach for intrawell detection monitoring under the CCR Rule. PLs were calculated for each of the constituents included in Appendix III of the CCR Rule (total boron, total calcium, chloride, fluoride, pH, sulfate, and total dissolved solids). The following narrative describes the methods employed and the results obtained and the ChemStat™ output files are included as an attachment.

The set of background wells utilized for BRPP BABs includes MW-16-01 through MW-16-04 and MW-16-09. The background evaluation included the following steps:

- Review of data quality checklists for the baseline/background data sets for CCR Appendix III constituents;

[1] Verification sampling results used to confirm or deny potential statistically significant increases (SSIs) have been averaged with the compliance sample results for statistical limit calculation.

- Graphical representation of the baseline data as time versus concentration (T v. C) by well/constituent pair;
- Outlier testing of individual data points that appear from the graphical representations as potential outliers;
- Evaluation of percentage of non-detects for each baseline/background well-constituent (w/c) pair;
- Distribution of the data; and
- Calculation of the upper PLs for each cumulative baseline/background data set (upper and lower PLs were calculated for field pH).

The results of these evaluations are presented and discussed below.

Data Quality

Data from each sampling round were evaluated for completeness, overall quality and usability, method-specified sample holding times, precision and accuracy, and potential sample contamination. The review was completed using the following quality control (QC) information which at a minimum included chain-of-custody forms, investigative sample results including blind field duplicates, and, as provided by the laboratory, method blanks, laboratory control spikes, laboratory duplicates. The data were found to be complete and usable for the purposes of the CCR monitoring program.

Time versus Concentration Graphs

The time versus concentration (T v. C) graphs (Attachment A) show potential or suspect outliers for calcium at MW-16-02 and MW-16-03 on 3/17/2020.

While variations in results are present, the graphs show consistent baseline data and do not suggest that the data sets, as a whole, likely have overall trending or seasonality.

Outlier Testing

Outlier removal from the background data set is summarized in Table 1. Probability plots (Attachment A) were used to further evaluate the potential outliers in calcium data for MW-16-02 and MW-16-03 that were identified in the T v. C graphs (Attachment A). In general, probability plots of the data residuals for MW-16-02 and MW-16-03 show that calcium data collected on 3/17/2020 were from a different distribution than the remaining data. Prior to outlier removal, calcium for MW-16-02 and MW-16-03 exhibited a non-normal distribution. The data sets exhibited a normal distribution after the removal of these outliers. As such, calcium data collected from monitoring wells MW-16-02 and MW-16-03 on 3/17/2021 were removed from the background data set used to calculate the statistical limits.

Distribution of the Data Sets

ChemStat™ was utilized to evaluate each data set for normality. If the skewness coefficient was calculated to be between negative one and one, then the data were assumed to be approximately normally distributed. If the skewness coefficient was calculated as greater than one (or less than negative one) then the calculation was performed on the natural log (Ln) of the data. If the Ln of the data still determined that the data appeared to be skewed, then the Shapiro-Wilk test of normality (Shapiro-Wilk) was performed. The Shapiro-Wilk statistic was calculated on both non-transformed

data, and the Ln-transformed data. If the Shapiro-Wilk statistic indicated that normal distributional assumptions were not valid, then the parameter was considered a candidate for non-parametric statistical evaluation. The data distributions are summarized in Table 2.

Prediction Limits

Table 2 presents the calculated PLs for the background/baseline data sets. For normal and lognormal distributions, PLs are calculated for 95 percent confidence using parametric methods. For non-normal background datasets, a nonparametric PL is utilized, resulting in the highest value from the background dataset as the PL. The achieved confidence levels for nonparametric prediction limits depend entirely on the number of background data points, which are shown in the ChemStat™ outputs. Verification resampling (1 of 2) is recommended per the Stats Plan and UG to achieve performance standards specified in the CCR Rule.

Attachments

Table 1 – Summary of Outlier Evaluation
Table 2 – Summary of Descriptive Statistics and Prediction Limit Calculations
Attachment A – ChemStat™ Prediction Limit Outputs

Tables

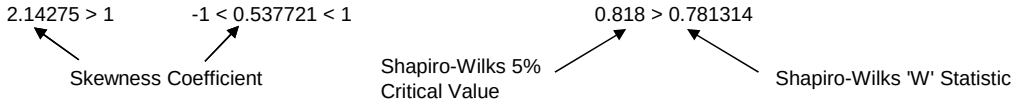
Table 1
Summary of Outlier Evaluation
Background Statistical Evaluation
DTE Electric Company – Belle River Power Plant Bottom Ash Basins

Parameter	Units	Monitoring Well	Sample Date	Data Outlier	Basis for Removal of Outlier
Calcium	ug/L	MW-16-02	03/17/20	88,000	Anomalously high concentration.
		MW-16-03	03/17/20	52,000	Anomalously high concentration.

Table 2
Summary of Descriptive Statistics and Prediction Limit Calculations
Background Statistical Evaluation
DTE Electric Company – Belle River Power Plant Bottom Ash Basins

Monitoring Well	Skewness Test		Shapiro-Wilks Test (5% Critical Value)		Outliers Removed	Prediction Limit Test	Prediction Limit
	Un-Transformed Data	Natural Log Transformed Data	Un-Transformed Data	Natural Log Transformed Data			
Appendix III							
Boron (ug/L)							
MW-16-01	-1 < 0.621873 < 1	--	--	--	N	Parametric	1,300
MW-16-02	-1 < -0.464941 < 1	--	--	--	N	Parametric	1,300
MW-16-03	-1 < -0.166914 < 1	--	--	--	N	Parametric	1,200
MW-16-04	-1 < -0.677068 < 1	--	--	--	N	Parametric	1,200
MW-16-09	-1 < 0.90413 < 1	--	--	--	N	Parametric	1,900
Calcium (ug/L)							
MW-16-01	-1 < 0.390138 < 1	--	--	--	N	Parametric	44,000
MW-16-02	-1 < -0.258781 < 1	--	--	--	Y	Parametric	58,000
MW-16-03	-1 < -0.469505 < 1	--	--	--	Y	Parametric	35,000
MW-16-04	-1 < 0.183976 < 1	--	--	--	N	Parametric	60,000
MW-16-09	-1 < -0.20099 < 1	--	--	--	N	Parametric	42,000
Chloride (mg/L)							
MW-16-01	-1 < 0.392382 < 1	--	--	--	N	Parametric	510
MW-16-02	-1 < 0.372635 < 1	--	--	--	N	Parametric	390
MW-16-03	1 < 1.76589	1 < 1.48293	0.887 > 0.812235	0.887 > 0.857399	N	Non-Parametric	800
MW-16-04	-1 < -0.356252 < 1	--	--	--	N	Parametric	520
MW-16-09	-1 < 0.601865 < 1	--	--	--	N	Parametric	1,100
Fluoride (mg/L)							
MW-16-01	-1 < -0.982462 < 1	--	--	--	N	Parametric	1.9
MW-16-02	-1 < -0.626994 < 1	--	--	--	N	Parametric	1.3
MW-16-03	-1 < -0.628539 < 1	--	--	--	N	Parametric	1.9
MW-16-04	-1.05207 < -1	-1.1716 < -1	0.892 > 0.803547	0.892 > 0.792157	N	Non-Parametric	1.8
MW-16-09	-1 < -0.927704 < 1	--	--	--	N	Parametric	1.7

Notes:

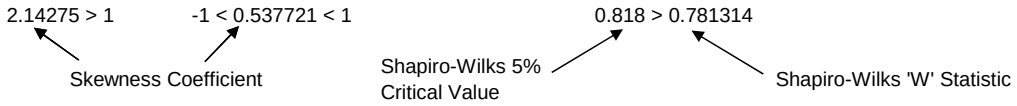


ug/L = micrograms per liter
mg/L = milligrams per liter
SU = standard units

Table 2
Summary of Descriptive Statistics and Prediction Limit Calculations
Background Statistical Evaluation
DTE Electric Company – Belle River Power Plant Bottom Ash Basins

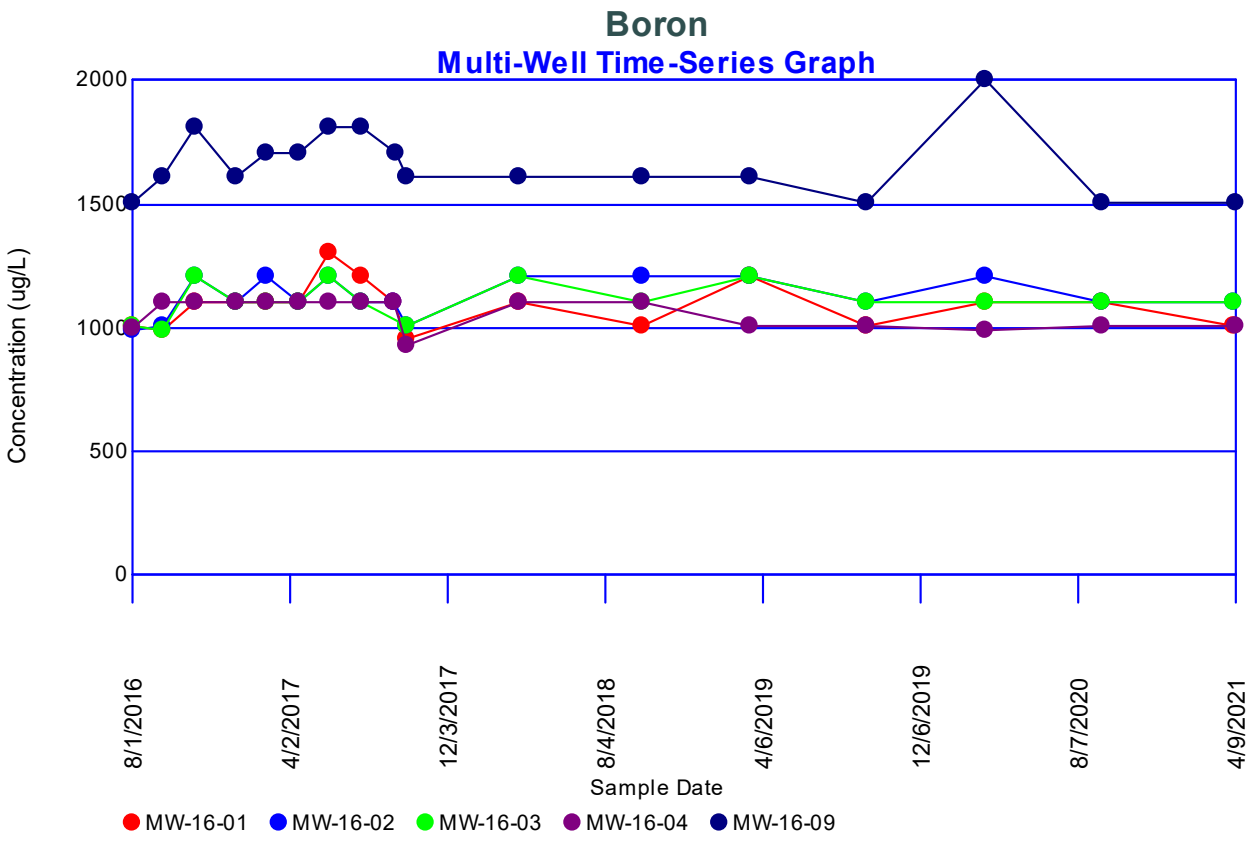
Monitoring Well	Skewness Test		Shapiro-Wilks Test (5% Critical Value)		Outliers Removed	Prediction Limit Test	Prediction Limit
	Un-Transformed Data	Natural Log Transformed Data	Un-Transformed Data	Natural Log Transformed Data			
pH, Field (SU)							
MW-16-01	-1.0639 < -1	-1.20624 < -1	0.892 > 0.866579	0.892 > 0.853838	N	Non-Parametric	7.0 - 8.1
MW-16-02	-1 < -0.221591 < 1	--	--	--	N	Parametric	7.3 - 8.0
MW-16-03	-1 < 0.0266865 < 1	--	--	--	N	Parametric	7.5 - 8.2
MW-16-04	-1 < 0.721089 < 1	--	--	--	N	Parametric	7.6 - 8.2
MW-16-09	-1 < 0.183273 < 1	--	--	--	N	Parametric	7.7 - 8.6
Sulfate (mg/L)							
MW-16-01	1 < 1.62978	-1 < 0.459781 < 1	--	--	N	Parametric	14
MW-16-02	-1 < 0.986028 < 1	--	--	--	N	Parametric	15
MW-16-03	1 < 12.2351	1 < 4.11712	0.887 > 0.795612	0.887 < 0.943562	N	Parametric	5.9
MW-16-04	1 < 1.84853	-1.3191 < -1	0.892 > 0.787382	0.892 > 0.878701	N	Non-Parametric	36
MW-16-09	-1 < 0.423823 < 1	--	--	--	N	Parametric	37
Total Dissolved Solids (mg/L)							
MW-16-01	-1.12054 < -1	-1.19877 < -1	0.892 > 0.871811	0.892 > 0.860328	N	Non-Parametric	970
MW-16-02	1 < 1.91474	1 < 1.69462	0.892 > 0.79031	0.892 > 0.82139	N	Non-Parametric	910
MW-16-03	-1.18763 < -1	-1.19154 < -1	0.887 > 0.57203	0.887 > 0.573174	N	Non-Parametric	1,100
MW-16-04	1 < 1.22374	1 < 1.11029	0.892 > 0.843436	0.892 > 0.86138	N	Non-Parametric	1,100
MW-16-09	-1 < -0.486698 < 1	--	--	--	N	Parametric	2,000

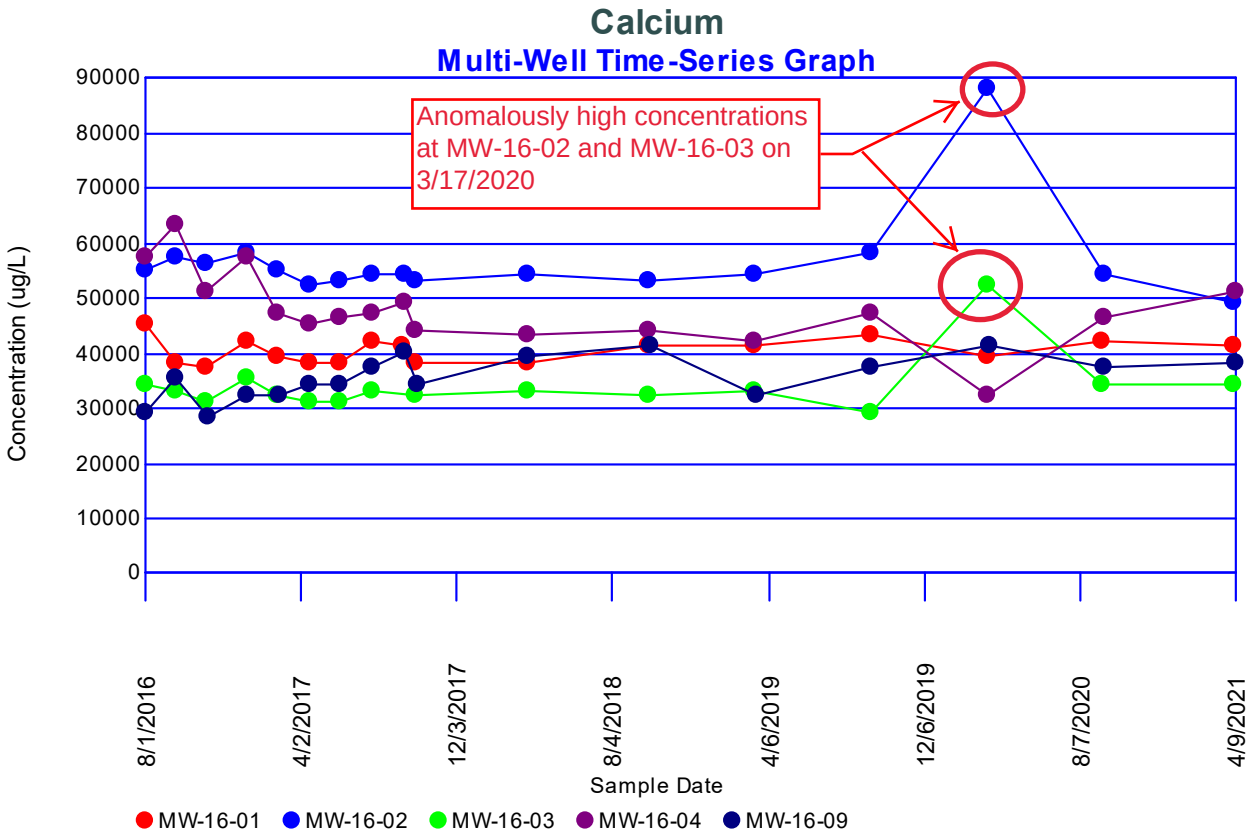
Notes:



ug/L = micrograms per liter
mg/L = milligrams per liter
SU = standard units

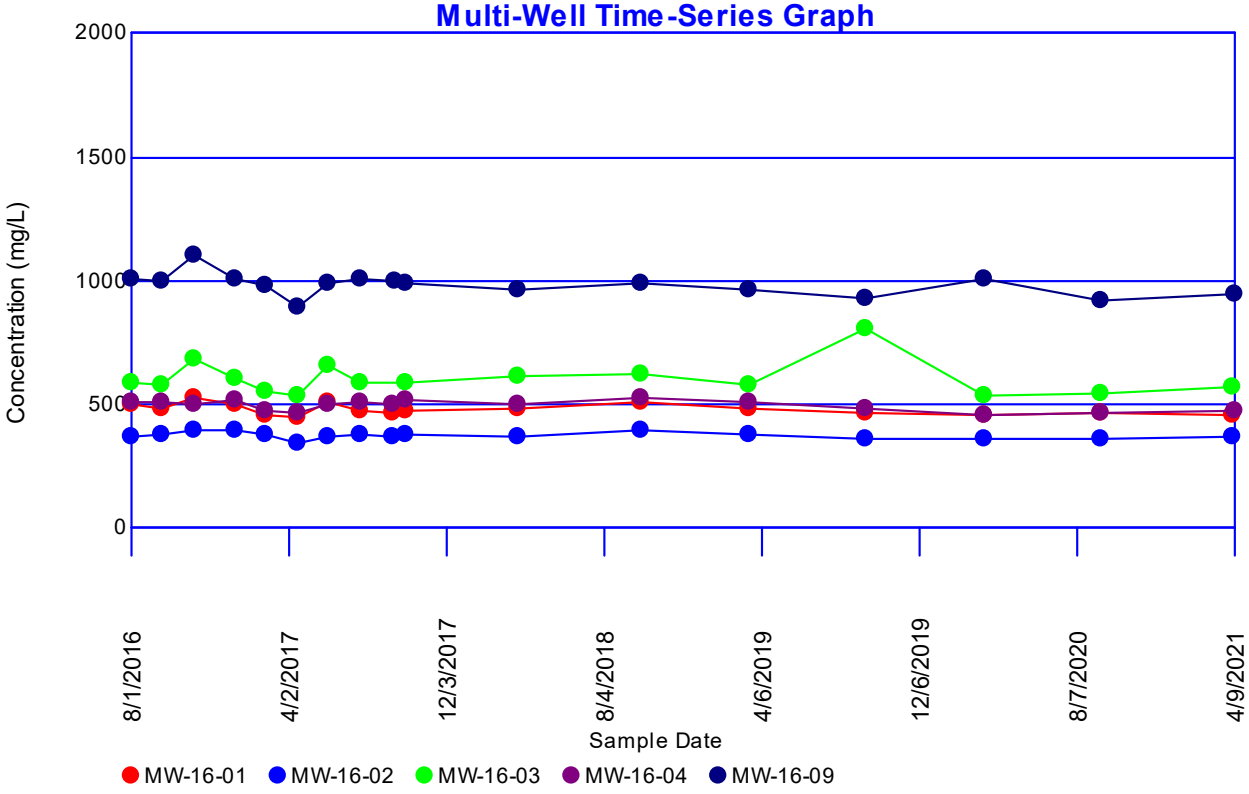
Attachment A
ChemStat™ Prediction Limit Outputs


Boron
Multi-Well Time-Series Graph
Concentration (ug/L)
2000
1500
1000
500
0
8/1/2016
4/2/2017
12/3/2017
8/4/2018
4/6/2019
12/6/2019
8/7/2020
4/9/2021
Sample Date
MW-16-01
MW-16-02
MW-16-03
MW-16-04
MW-16-09


Calcium
Multi-Well Time-Series Graph
Anomalously high concentrations at MW-16-02 and MW-16-03 on 3/17/2020
Concentration (ug/L)
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
8/1/2016
4/2/2017
12/3/2017
8/4/2018
4/6/2019
12/6/2019
8/7/2020
4/9/2021
Sample Date
MW-16-01
MW-16-02
MW-16-03
MW-16-04
MW-16-09

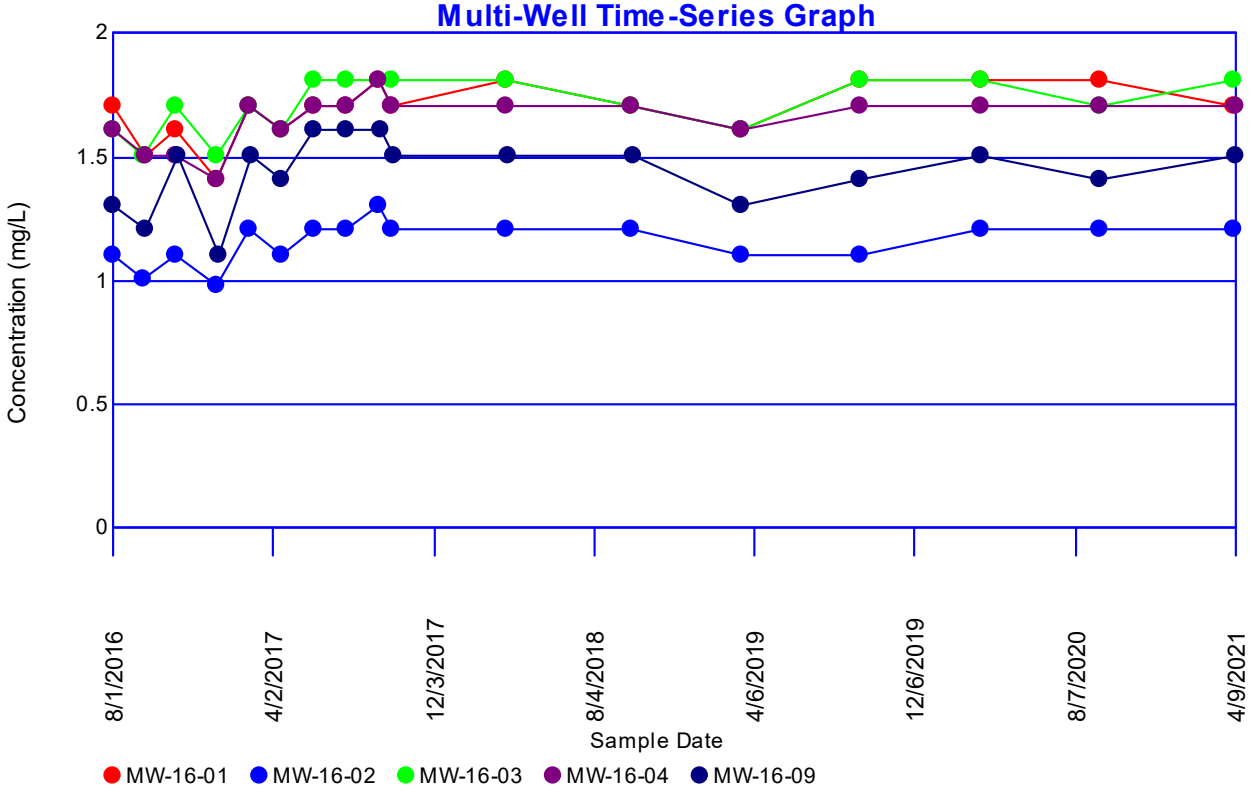
Chloride

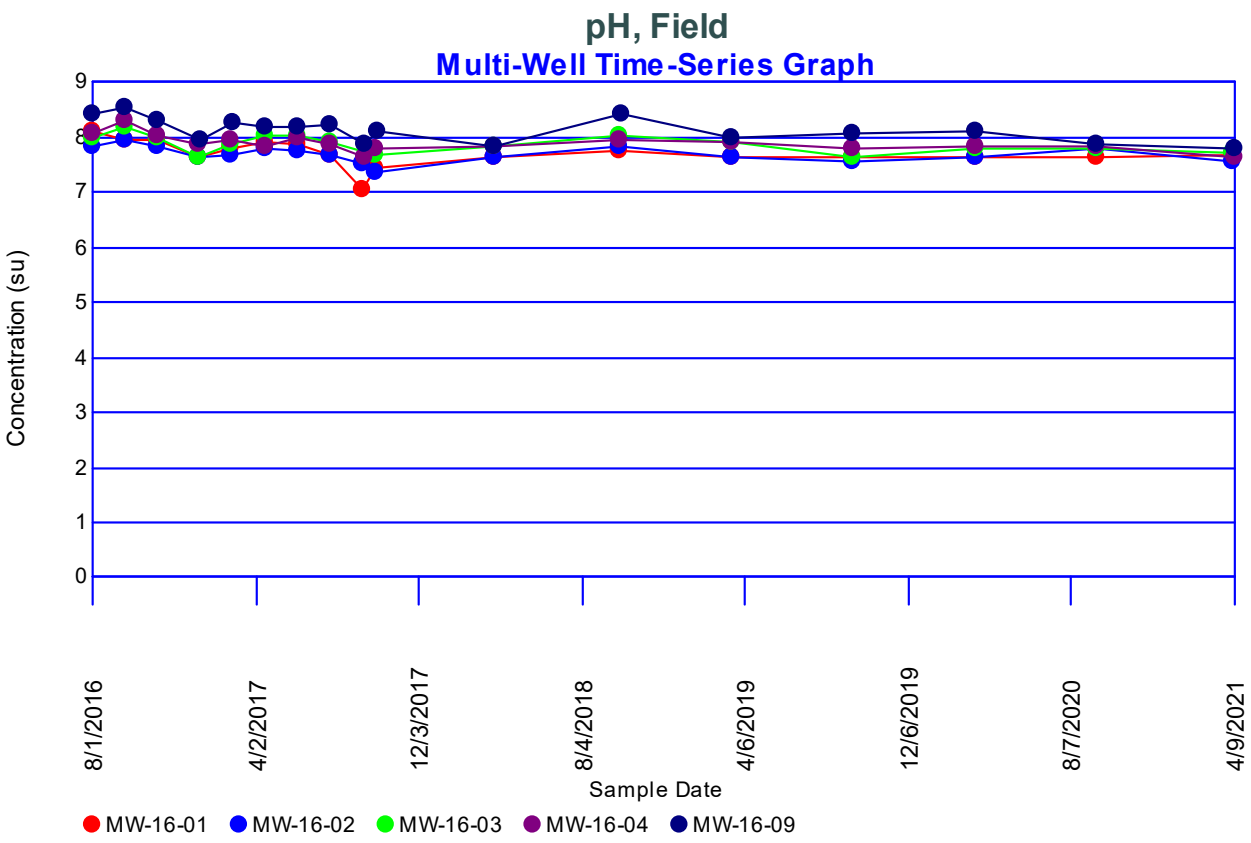
Multi-Well Time-Series Graph



Fluoride

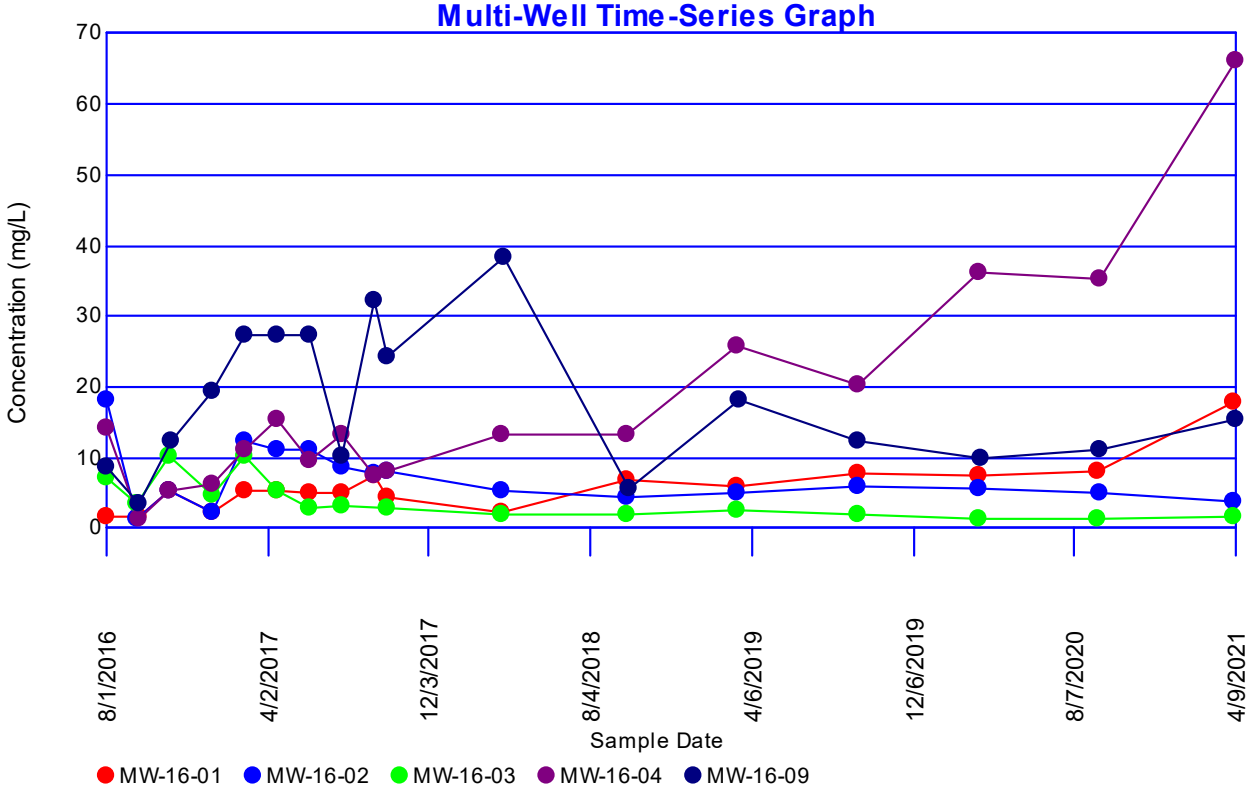
Multi-Well Time-Series Graph

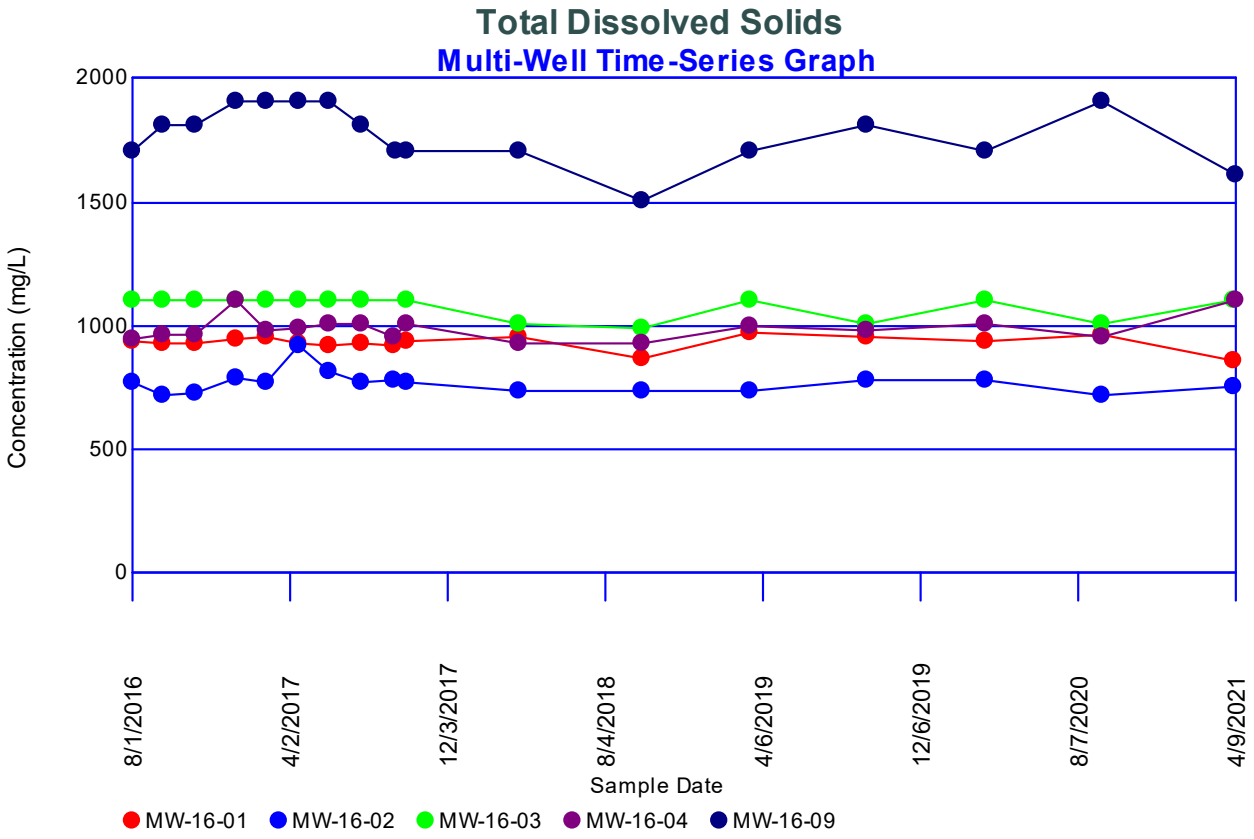


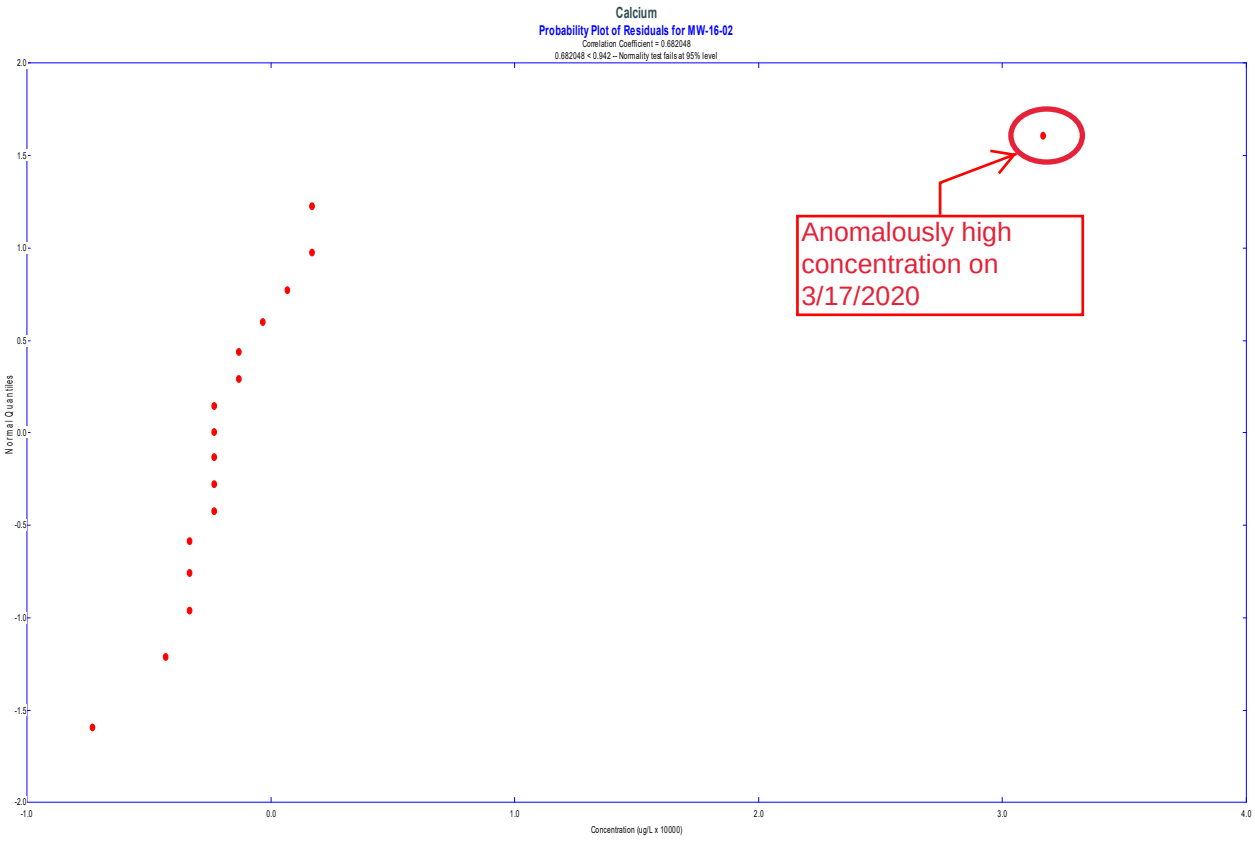

pH, Field
Multi-Well Time-Series Graph
Concentration (su)
9
8
7
6
5
4
3
2
1
0
8/1/2016
4/2/2017
12/3/2017
8/4/2018
4/6/2019
12/6/2019
8/7/2020
4/9/2021
Sample Date
MW-16-01
MW-16-02
MW-16-03
MW-16-04
MW-16-09

Sulfate

Multi-Well Time-Series Graph




Total Dissolved Solids
Multi-Well Time-Series Graph
Concentration (mg/L)
2000
1500
1000
500
0
8/1/2016
4/2/2017
12/3/2017
8/4/2018
4/6/2019
12/6/2019
8/7/2020
4/9/2021
Sample Date
MW-16-01
MW-16-02
MW-16-03
MW-16-04
MW-16-09


Calcium
Probability Plot of Residuals for MW-16-02
Correlation Coefficient = 0.682048
0.682048 < 0.942 -- Normality test fails at 95% level
Normal Quantiles
Concentration (ug/L x 10000)
Anomalously high concentration on 3/17/2020

Dixon's Test for Outliers

Parameter: Calcium

Location: MW-16-02

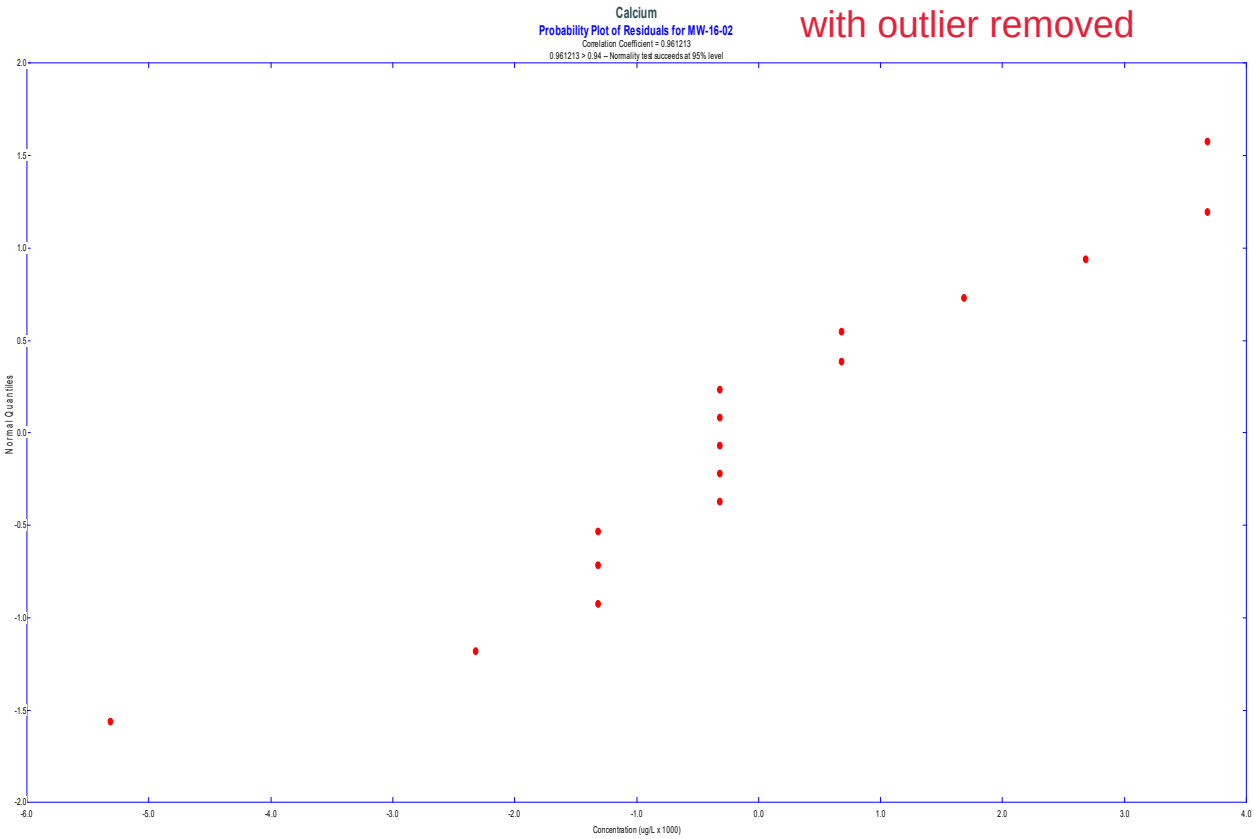
Original Data (Not Transformed)

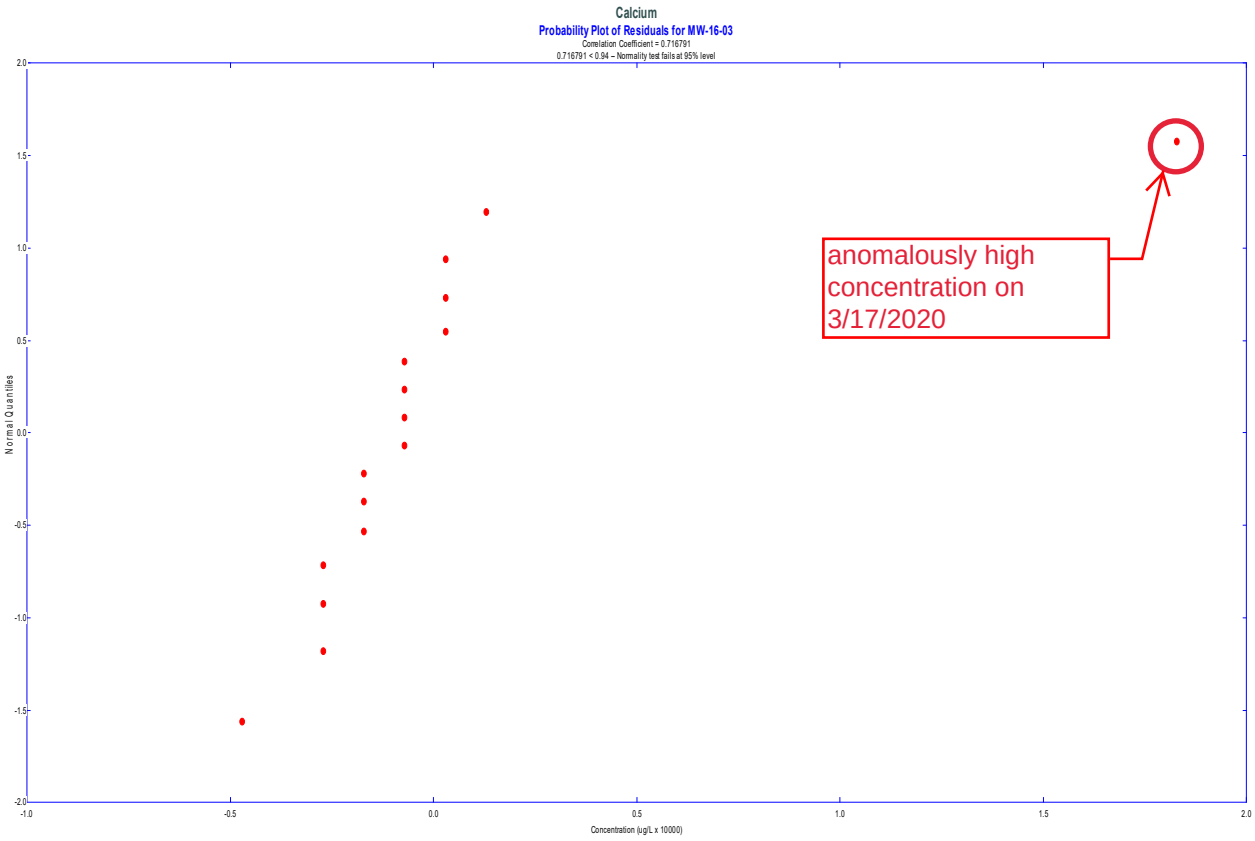
Non-Detects Replaced with Detection Limit

For 17 Measurements...
1% Level of Significance

Iteration	Highest	Lowest	Critical	Outlier
1	0.857143	0.444444	0.577	88000
2	0.2	0.5	0.595	None

Loc.	Date	Conc.	Outlier
MW-16-02	8/2/2016	55000	FALSE
	9/19/2016	57000	FALSE
	11/7/2016	56000	FALSE
	1/9/2017	58000	FALSE
	2/27/2017	55000	FALSE
	4/17/2017	52000	FALSE
	6/5/2017	53000	FALSE
	7/24/2017	54000	FALSE
	9/12/2017	54000	FALSE
	10/2/2017	53000	FALSE
	3/26/2018	54000	FALSE
	10/1/2018	53000	FALSE
	3/18/2019	54000	FALSE
	9/16/2019	58000	FALSE
	3/17/2020	**88000**	**TRUE**
	9/15/2020	54000	FALSE
	4/8/2021	49000	FALSE


Calcium
Probability Plot of Residuals for MW-16-02
Correlation Coefficient = 0.961213
0.961213 > 0.94 – Normality test succeeds at 95% level
with outlier removed
Normal Quantiles
Concentration (ug/L x 1000)
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-6.0
-5.0
-4.0
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0
4.0


Calcium
Probability Plot of Residuals for MW-16-03
Correlation Coefficient = 0.716791
0.716791 < 0.94 – Normality test fails at 95% level
Normal Quantiles
Concentration (ug/L x 10000)
anomalously high concentration on 3/17/2020

Dixon's Test for Outliers

Parameter: Calcium

Location: MW-16-03

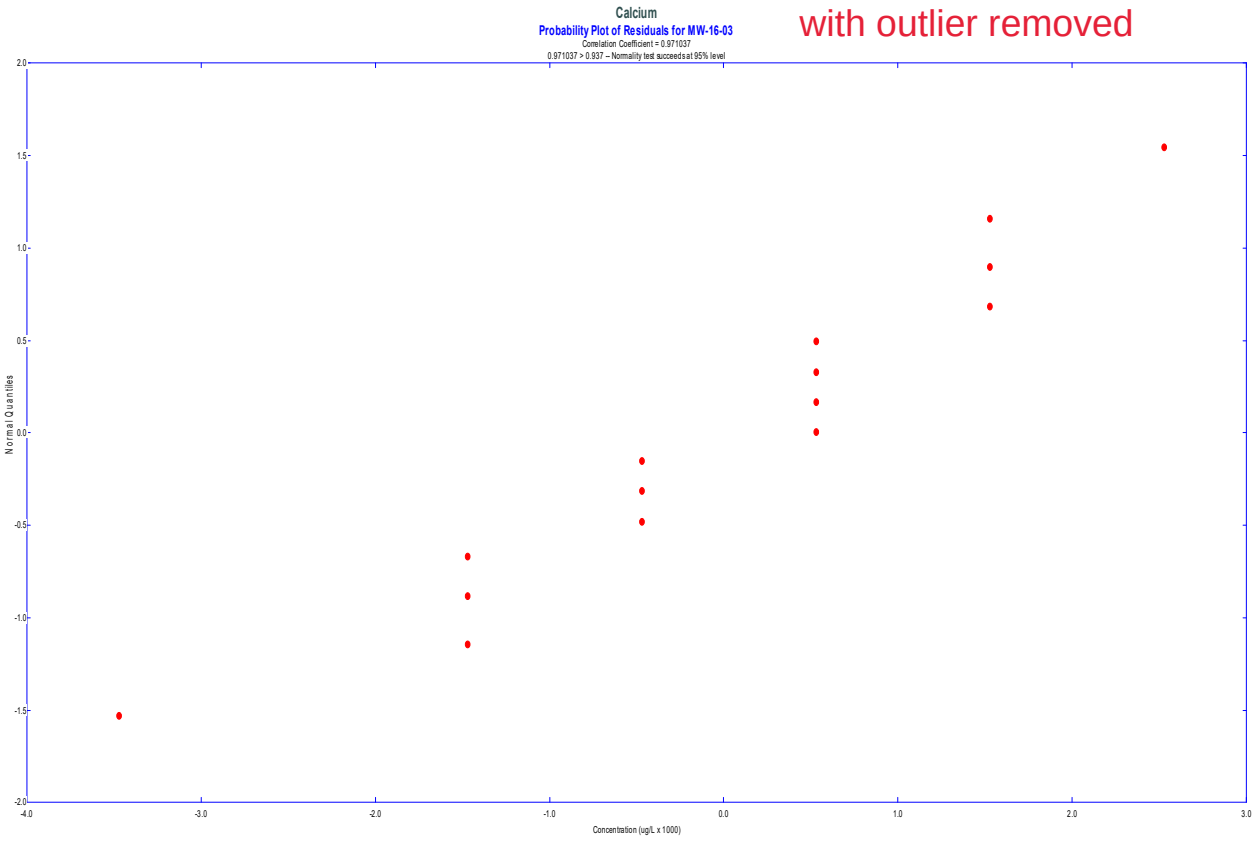
Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

For 16 Measurements...
1% Level of Significance

Iteration	Highest	Lowest	Critical	Outlier
1	0.857143	0.4	0.595	52000
2	0.25	0.4	0.616	None

Loc.	Date	Conc.	Outlier
MW-16-03	8/2/2016	34000	FALSE
	9/19/2016	33000	FALSE
	11/7/2016	31000	FALSE
	1/9/2017	35000	FALSE
	2/27/2017	32000	FALSE
	4/17/2017	31000	FALSE
	6/5/2017	31000	FALSE
	7/24/2017	33000	FALSE
	10/2/2017	32000	FALSE
	3/26/2018	33000	FALSE
	10/1/2018	32000	FALSE
	3/18/2019	33000	FALSE
	9/16/2019 ~	29000	FALSE
	3/17/2020	**52000**	**TRUE**
	9/14/2020	34000	FALSE
	4/8/2021	34000	FALSE



with outlier removed

Skewness Coefficient

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	1084.12	91.0397	0.621873
MW-16-02	17	1122.35	77.4217	-0.464941
MW-16-03	16	1105	70.2377	-0.166914
MW-16-04	17	1052.35	61.3931	-0.677068
MW-16-09	17	1652.94	137.467	0.90413

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	1204.52	245.364	**1.42832**

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-01

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/1/2016	1000
	9/20/2016	980
	11/7/2016	1100
	1/9/2017	1100 B
	2/27/2017	1100
	4/17/2017	1100
	6/5/2017	1300 B
	7/24/2017	1200
	9/11/2017	1100
	10/2/2017	950
	3/26/2018	1100
	10/1/2018	1000
	3/18/2019	1200
	9/16/2019	1000
	3/17/2020	1100
	9/14/2020	1100

From 16 baseline samples
Baseline mean = 1089.38
Baseline std Dev = 91.3213

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/8/2021	1	1000	[0, 1254.39]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	980
	9/19/2016	1000
	11/7/2016	1200
	1/9/2017	1100 B
	2/27/2017	1200
	4/17/2017	1100
	6/5/2017	1200 B
	7/24/2017	1100
	9/12/2017	1100
	10/2/2017	1000
	3/26/2018	1200
	10/1/2018	1200
	3/18/2019	1200
	9/16/2019	1100
	3/17/2020	1200
	9/15/2020	1100

From 16 baseline samples
Baseline mean = 1123.75
Baseline std Dev = 79.7392

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/8/2021	1	1100	[0, 1267.84]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-03

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	1000
	9/19/2016	980
	11/7/2016	1200
	1/9/2017	1100 B
	2/27/2017	1100
	4/17/2017	1100
	6/5/2017	1200 B
	7/24/2017	1100
	10/2/2017	1000
	3/26/2018	1200
	10/1/2018	1100
	3/18/2019	1200
	9/16/2019	1100
	3/17/2020	1100
	9/14/2020	1100

From 15 baseline samples
Baseline mean = 1105.33
Baseline std Dev = 72.6898

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/8/2021	1	1100	[0, 1237.56]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-04

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	990
	9/20/2016	1100
	11/7/2016	1100
	1/9/2017	1100 B
	2/27/2017	1100
	4/18/2017	1100
	6/5/2017	1100 B
	7/24/2017	1100
	9/13/2017	1100
	10/2/2017	920
	3/26/2018	1100
	10/1/2018	1100
	3/18/2019	1000
	9/16/2019	1000
	3/17/2020	980
	9/15/2020	1000

From 16 baseline samples
Baseline mean = 1055.63
Baseline std Dev = 61.8567

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/9/2021	1	1000	[0, 1167.4]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-09

Parameter: Boron

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	1500
	9/20/2016	1600
	11/9/2016	1800
	1/10/2017	1600 B
	2/28/2017	1700
	4/17/2017	1700
	6/5/2017	1800 B
	7/25/2017	1800
	9/14/2017	1700
	10/3/2017	1600
	3/27/2018	1600
	10/4/2018	1600
	3/20/2019	1600
	9/17/2019	1500
	3/19/2020	2000
	9/15/2020	1500

From 16 baseline samples
Baseline mean = 1662.5
Baseline std Dev = 136.015

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/9/2021	1	1500	[0, 1908.28]	FALSE

Skewness Coefficient

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	40176.5	2242.64	0.390138
MW-16-02	16	54312.5	2272.11	-0.258781
MW-16-03	15	32466.7	1552.26	-0.469505
MW-16-04	17	47705.9	6953.1	0.183976
MW-16-09	17	35294.1	3933.27	-0.20099

All Locations

Obs.	Mean	Std. Dev.	Skewness
82	42073.2	8871.9	0.424859

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-01

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/1/2016	45000
	9/20/2016	38000
	11/7/2016	37000
	1/9/2017	42000
	2/27/2017	39000
	4/17/2017	38000
	6/5/2017	38000
	7/24/2017	42000
	9/11/2017	41000
	10/2/2017	38000
	3/26/2018	38000
	10/1/2018	41000
	3/18/2019	41000
	9/16/2019	43000
	3/17/2020	39000
	9/14/2020	42000

From 16 baseline samples
Baseline mean = 40125
Baseline std Dev = 2305.79

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/8/2021	1	41000	[0, 44291.6]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	55000
	9/19/2016	57000
	11/7/2016	56000
	1/9/2017	58000
	2/27/2017	55000
	4/17/2017	52000
	6/5/2017	53000
	7/24/2017	54000
	9/12/2017	54000
	10/2/2017	53000
	3/26/2018	54000
	10/1/2018	53000
	3/18/2019	54000
	9/16/2019	58000
	9/15/2020	54000

From 15 baseline samples
Baseline mean = 54666.7
Baseline std Dev = 1838.74

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/8/2021	1	49000	[0, 58011.5]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-03

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	34000
	9/19/2016	33000
	11/7/2016	31000
	1/9/2017	35000
	2/27/2017	32000
	4/17/2017	31000
	6/5/2017	31000
	7/24/2017	33000
	10/2/2017	32000
	3/26/2018	33000
	10/1/2018	32000
	3/18/2019	33000
	9/16/2019 ~	29000
	9/14/2020	34000

From 14 baseline samples
Baseline mean = 32357.1
Baseline std Dev = 1549.55

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 14 (background observations) - 1
t(0.95, 14) = 1.77093

Date	Samples	Mean	Interval	Significant
4/8/2021	1	34000	[0, 35197.6]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-04

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	57000
	9/20/2016	63000
	11/7/2016	51000
	1/9/2017	57000
	2/27/2017	47000
	4/18/2017	45000
	6/5/2017	46000
	7/24/2017	47000
	9/13/2017	49000
	10/2/2017	44000
	3/26/2018	43000
	10/1/2018	44000
	3/18/2019	42000
	9/16/2019	47000
	3/17/2020	32000
	9/15/2020	46000

From 16 baseline samples
Baseline mean = 47500
Baseline std Dev = 7127.41

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/9/2021	1	51000	[0, 60379.3]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-09

Parameter: Calcium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	29000
	9/20/2016	35000
	11/9/2016	28000
	1/10/2017	32000
	2/28/2017	32000
	4/17/2017	34000
	6/5/2017	34000
	7/25/2017	37000
	9/14/2017	40000
	10/3/2017	34000
	3/27/2018	39000
	10/4/2018	41000
	3/20/2019	32000
	9/17/2019	37000
	3/19/2020	41000
	9/15/2020	37000

From 16 baseline samples
Baseline mean = 35125
Baseline std Dev = 3997.92

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/9/2021	1	38000	[0, 42349.2]	FALSE

Skewness Coefficient

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	473.529	21.7776	0.392382
MW-16-02	17	365.294	14.6277	0.372635
MW-16-03	16	596.875	68.1879	**1.76589**
MW-16-04	17	487.647	19.8524	-0.356252
MW-16-09	17	974.706	46.6527	0.601865

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	579.405	216.663	**1.06984**

Skewness Coefficient

Parameter: Chloride

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	6.15923	0.0456715	0.31196
MW-16-02	17	5.89995	0.0398127	0.294603
MW-16-03	16	6.38621	0.105598	**1.48293**
MW-16-04	17	6.1888	0.0410521	-0.417541
MW-16-09	17	6.88107	0.0473838	0.38469

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	6.30206	0.336801	0.700105

Shapiro-Wilks Test of Normality

Parameter: Chloride

Location: MW-16-03

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	530	800	270	0.5056	136.512
2	530	680	150	0.329	49.35
3	540	650	110	0.2521	27.731
4	550	620	70	0.1939	13.573
5	560	610	50	0.1447	7.235
6	570	600	30	0.1005	3.015
7	570	580	10	0.0593	0.593
8	580	580	0	0.0196	0
9	580	580	0		
10	580	570	-10		
11	600	570	-30		
12	610	560	-50		
13	620	550	-70		
14	650	540	-110		
15	680	530	-150		
16	800	530	-270		

Sum of b values = 238.009

Sample Standard Deviation = 68.1879

W Statistic = 0.812235

5% Critical value of 0.887 exceeds 0.812235

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.812235

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Chloride

Location: MW-16-03

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	6.27288	6.68461	0.411735	0.5056	0.208173
2	6.27288	6.52209	0.249216	0.329	0.081992
3	6.29157	6.47697	0.185403	0.2521	0.0467402
4	6.30992	6.42972	0.119801	0.1939	0.0232295
5	6.32794	6.41346	0.0855222	0.1447	0.0123751
6	6.34564	6.39693	0.0512933	0.1005	0.00515498
7	6.34564	6.36303	0.0173917	0.0593	0.00103133
8	6.36303	6.36303	0	0.0196	0
9	6.36303	6.36303	0		
10	6.36303	6.34564	-0.0173917		
11	6.39693	6.34564	-0.0512933		
12	6.41346	6.32794	-0.0855222		
13	6.42972	6.30992	-0.119801		
14	6.47697	6.29157	-0.185403		
15	6.52209	6.27288	-0.249216		
16	6.68461	6.27288	-0.411735		

Sum of b values = 0.378696

Sample Standard Deviation = 0.105598

W Statistic = 0.857399

5% Critical value of 0.887 exceeds 0.857399

Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 is less than 0.857399

Data is normally distributed at 99% level of significance

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-01

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/1/2016	490
	9/20/2016	480
	11/7/2016	520
	1/9/2017	490
	2/27/2017	450
	4/17/2017	440
	6/5/2017	500
	7/24/2017	470
	9/11/2017	460
	10/2/2017	470
	3/26/2018	480
	10/1/2018	500
	3/18/2019	480
	9/16/2019	460
	3/17/2020	450
	9/14/2020	460

From 16 baseline samples
Baseline mean = 475
Baseline std Dev = 21.6025

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/8/2021	1	450	[0, 514.036]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	360
	9/19/2016	370
	11/7/2016	390
	1/9/2017	390
	2/27/2017	370
	4/17/2017	340
	6/5/2017	360
	7/24/2017	370
	9/12/2017	360
	10/2/2017	370
	3/26/2018	360
	10/1/2018	390
	3/18/2019	370
	9/16/2019	350
	3/17/2020	350
	9/15/2020	350

From 16 baseline samples
Baseline mean = 365.625
Baseline std Dev = 15.0416

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/8/2021	1	360	[0, 392.805]	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-03

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 800
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/2/2016	580
	9/19/2016	570
	11/7/2016	680
	1/9/2017	600
	2/27/2017	550
	4/17/2017	530
	6/5/2017	650
	7/24/2017	580
	10/2/2017	580
	3/26/2018	610
	10/1/2018	620
	3/18/2019	570
	9/16/2019 ~	800
	3/17/2020	530
	9/14/2020	540

Date	Count	Mean	Significant
4/8/2021	1	560	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-04

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	500
	9/20/2016	500
	11/7/2016	490
	1/9/2017	510
	2/27/2017	470
	4/18/2017	460
	6/5/2017	490
	7/24/2017	500
	9/13/2017	490
	10/2/2017	510
	3/26/2018	490
	10/1/2018	520
	3/18/2019	500
	9/16/2019	480
	3/17/2020	450
	9/15/2020	460

From 16 baseline samples
Baseline mean = 488.75
Baseline std Dev = 19.9583

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/9/2021	1	470	[0, 524.815]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-09

Parameter: Chloride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	1000
	9/20/2016	990
	11/9/2016	1100
	1/10/2017	1000
	2/28/2017	970
	4/17/2017	890
	6/5/2017	980
	7/25/2017	1000
	9/14/2017	990
	10/3/2017	980
	3/27/2018	960
	10/4/2018	980
	3/20/2019	960
	9/17/2019	920
	3/19/2020	1000
	9/15/2020	910

From 16 baseline samples
Baseline mean = 976.875
Baseline std Dev = 47.289

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/9/2021	1	940	[0, 1062.33]	FALSE

Skewness Coefficient

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	1.68235	0.113111	-0.982462
MW-16-02	17	1.15118	0.0838065	-0.626994
MW-16-03	16	1.7	0.109545	-0.628539
MW-16-04	17	1.64706	0.100733	**-1.05207**
MW-16-09	17	1.43529	0.141161	-0.927704

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	1.52107	0.236786	-0.658101

Skewness Coefficient

Parameter: Fluoride

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	0.517958	0.0698188	**-1.13862**
MW-16-02	17	0.138197	0.0748666	-0.78968
MW-16-03	16	0.528623	0.0659105	-0.695101
MW-16-04	17	0.497146	0.0633755	**-1.1716**
MW-16-09	17	0.356473	0.103958	**-1.12232**

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	0.406239	0.167398	-0.858548

Shapiro-Wilks Test of Normality

Parameter: Fluoride

Location: MW-16-04

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 17 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.4	1.8	0.4	0.4968	0.19872
2	1.5	1.7	0.2	0.3273	0.06546
3	1.5	1.7	0.2	0.254	0.0508
4	1.6	1.7	0.1	0.1988	0.01988
5	1.6	1.7	0.1	0.1524	0.01524
6	1.6	1.7	0.1	0.1109	0.01109
7	1.7	1.7	0	0.0725	0
8	1.7	1.7	0	0.0359	0
9	1.7	1.7	0		
10	1.7	1.7	0		
11	1.7	1.7	0		
12	1.7	1.6	-0.1		
13	1.7	1.6	-0.1		
14	1.7	1.6	-0.1		
15	1.7	1.5	-0.2		
16	1.7	1.5	-0.2		
17	1.8	1.4	-0.4		

Sum of b values = 0.36119

Sample Standard Deviation = 0.100733

W Statistic = 0.803547

5% Critical value of 0.892 exceeds 0.803547

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.803547

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Fluoride

Location: MW-16-04

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 17 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.336472	0.587787	0.251314	0.4968	0.124853
2	0.405465	0.530628	0.125163	0.3273	0.0409659
3	0.405465	0.530628	0.125163	0.254	0.0317914
4	0.470004	0.530628	0.0606246	0.1988	0.0120522
5	0.470004	0.530628	0.0606246	0.1524	0.00923919
6	0.470004	0.530628	0.0606246	0.1109	0.00672327
7	0.530628	0.530628	0	0.0725	0
8	0.530628	0.530628	0	0.0359	0
9	0.530628	0.530628	0		
10	0.530628	0.530628	0		
11	0.530628	0.530628	0		
12	0.530628	0.470004	-0.0606246		
13	0.530628	0.470004	-0.0606246		
14	0.530628	0.470004	-0.0606246		
15	0.530628	0.405465	-0.125163		
16	0.530628	0.405465	-0.125163		
17	0.587787	0.336472	-0.251314		

Sum of b values = 0.225625

Sample Standard Deviation = 0.0633755

W Statistic = 0.792157

5% Critical value of 0.892 exceeds 0.792157

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.792157

Evidence of non-normality at 99% level of significance

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-01

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/1/2016	1.7
	9/20/2016	1.5
	11/7/2016	1.6
	1/9/2017	1.4
	2/27/2017	1.7
	4/17/2017	1.6
	6/5/2017	1.7
	7/24/2017	1.7
	9/11/2017	1.8
	10/2/2017	1.7
	3/26/2018	1.8
	10/1/2018	1.7
	3/18/2019	1.6
	9/16/2019	1.8
	3/17/2020	1.8
	9/14/2020	1.8

From 16 baseline samples
Baseline mean = 1.68125
Baseline std Dev = 0.116726

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/8/2021	1	1.7	[0, 1.89217]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	1.1
	9/19/2016	1
	11/7/2016	1.1
	1/9/2017	0.97
	2/27/2017	1.2
	4/17/2017	1.1
	6/5/2017	1.2
	7/24/2017	1.2
	9/12/2017	1.3
	10/2/2017	1.2
	3/26/2018	1.2
	10/1/2018	1.2
	3/18/2019	1.1
	9/16/2019	1.1
	3/17/2020	1.2
	9/15/2020	1.2

From 16 baseline samples
Baseline mean = 1.14812
Baseline std Dev = 0.085574

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/8/2021	1	1.2	[0, 1.30276]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-03

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	1.6
	9/19/2016	1.5
	11/7/2016	1.7
	1/9/2017	1.5
	2/27/2017	1.7
	4/17/2017	1.6
	6/5/2017	1.8
	7/24/2017	1.8
	10/2/2017	1.8
	3/26/2018	1.8
	10/1/2018	1.7
	3/18/2019	1.6
	9/16/2019	1.8
	3/17/2020	1.8
	9/14/2020	1.7

From 15 baseline samples
Baseline mean = 1.69333
Baseline std Dev = 0.109978

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/8/2021	1	1.8	[0, 1.89339]	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-04

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 1.8
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/2/2016	1.6
	9/20/2016	1.5
	11/7/2016	1.5
	1/9/2017	1.4
	2/27/2017	1.7
	4/18/2017	1.6
	6/5/2017	1.7
	7/24/2017	1.7
	9/13/2017	1.8
	10/2/2017	1.7
	3/26/2018	1.7
	10/1/2018	1.7
	3/18/2019	1.6
	9/16/2019	1.7
	3/17/2020	1.7

Date	Count	Mean	Significant
4/9/2021	1	1.7	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-09

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	1.3
	9/20/2016	1.2
	11/9/2016	1.5
	1/10/2017	1.1
	2/28/2017	1.5
	4/17/2017	1.4
	6/5/2017	1.6
	7/25/2017	1.6
	9/14/2017	1.6
	10/3/2017	1.5
	3/27/2018	1.5
	10/4/2018	1.5
	3/20/2019	1.3
	9/17/2019	1.4
	3/19/2020	1.5
	9/15/2020	1.4

From 16 baseline samples
Baseline mean = 1.43125
Baseline std Dev = 0.14477

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/9/2021	1	1.5	[0, 1.69285]	FALSE

Skewness Coefficient

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	7.67618	0.23697	**-1.0639**
MW-16-02	17	7.65559	0.1465	-0.221591
MW-16-03	16	7.8525	0.159729	0.0266865
MW-16-04	17	7.85706	0.159286	0.721089
MW-16-09	17	8.09235	0.224514	0.183273

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	7.82643	0.244111	0.130085

Skewness Coefficient

Parameter: pH, Field

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	2.03766	0.031425	**-1.20624**
MW-16-02	17	2.03526	0.0191834	-0.271258
MW-16-03	16	2.06064	0.0203426	-0.00734694
MW-16-04	17	2.06122	0.0201433	0.636706
MW-16-09	17	2.09056	0.0276918	0.142117

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	2.05703	0.0311827	-0.0235028

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-01

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 17 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	7	8.08	1.08	0.4968	0.536544
2	7.425	7.92	0.495	0.3273	0.162014
3	7.61	7.91	0.3	0.254	0.0762
4	7.62	7.88	0.26	0.1988	0.051688
5	7.62	7.84	0.22	0.1524	0.033528
6	7.62	7.76	0.14	0.1109	0.015526
7	7.62	7.71	0.09	0.0725	0.006525
8	7.62	7.63	0.01	0.0359	0.000359
9	7.63	7.63	0		
10	7.63	7.62	-0.01		
11	7.71	7.62	-0.09		
12	7.76	7.62	-0.14		
13	7.84	7.62	-0.22		
14	7.88	7.62	-0.26		
15	7.91	7.61	-0.3		
16	7.92	7.425	-0.495		
17	8.08	7	-1.08		

Sum of b values = 0.882383

Sample Standard Deviation = 0.23697

W Statistic = 0.866579

5% Critical value of 0.892 exceeds 0.866579

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 is less than 0.866579

Data is normally distributed at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-01

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 17 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1.94591	2.08939	0.143482	0.4968	0.0712817
2	2.00485	2.06939	0.0645385	0.3273	0.0211235
3	2.02946	2.06813	0.0386646	0.254	0.00982081
4	2.03078	2.06433	0.0335515	0.1988	0.00667004
5	2.03078	2.05924	0.0284625	0.1524	0.00433768
6	2.03078	2.04898	0.018206	0.1109	0.00201904
7	2.03078	2.04252	0.0117418	0.0725	0.000851282
8	2.03078	2.03209	0.00131148	0.0359	4.7082e-005
9	2.03209	2.03209	0		
10	2.03209	2.03078	-0.00131148		
11	2.04252	2.03078	-0.0117418		
12	2.04898	2.03078	-0.018206		
13	2.05924	2.03078	-0.0284625		
14	2.06433	2.03078	-0.0335515		
15	2.06813	2.02946	-0.0386646		
16	2.06939	2.00485	-0.0645385		
17	2.08939	1.94591	-0.143482		

Sum of b values = 0.116151

Sample Standard Deviation = 0.031425

W Statistic = 0.853838

5% Critical value of 0.892 exceeds 0.853838

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 is less than 0.853838

Data is normally distributed at 99% level of significance

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-01

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 8.08
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/1/2016	8.08
	9/20/2016	7.92
	11/7/2016	7.91
	1/9/2017	7.62
	2/27/2017	7.76
	4/17/2017	7.88
	6/5/2017	7.84
	7/24/2017	7.63
	9/11/2017	7
	10/2/2017 ~	7.425
	3/26/2018	7.62
	10/1/2018	7.71
	3/18/2019	7.62
	9/16/2019	7.62
	3/17/2020	7.61

Date	Count	Mean	Significant
4/8/2021	1	7.63	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% Two-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	7.79
	9/19/2016	7.93
	11/7/2016	7.8
	1/9/2017	7.62
	2/27/2017	7.64
	4/17/2017	7.78
	6/5/2017	7.71
	7/24/2017	7.64
	9/12/2017	7.47
	10/2/2017 ~	7.335
	3/26/2018	7.62
	10/1/2018	7.81
	3/18/2019	7.59
	9/16/2019	7.54
	3/17/2020	7.59
	9/15/2020	7.75

From 16 baseline samples
Baseline mean = 7.66344
Baseline std Dev = 0.147566

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1)/2 = 97.5 %
t is Percentile of Student's T-Test (0.95/1/2) = 0.975
Degrees of Freedom = 16 (background observations) - 1
t(0.975, 16) = 2.13145

Date	Samples	Mean	Interval	Significant
4/8/2021	1	7.53	[7.34, 7.99]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-03

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% Two-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	7.97
	9/19/2016	8.16
	11/7/2016	7.95
	1/9/2017	7.6
	2/27/2017	7.83
	4/17/2017	8.01
	6/5/2017	8.01
	7/24/2017	7.89
	10/2/2017	7.66
	3/26/2018	7.82
	10/1/2018	7.99
	3/18/2019	7.89
	9/16/2019	7.62
	3/17/2020	7.76
	9/14/2020	7.78

From 15 baseline samples
Baseline mean = 7.86267
Baseline std Dev = 0.159887

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1)/2 = 97.5 %
t is Percentile of Student's T-Test (0.95/1/2) = 0.975
Degrees of Freedom = 15 (background observations) - 1
t(0.975, 15) = 2.14479

Date	Samples	Mean	Interval	Significant
4/8/2021	1	7.7	[7.51, 8.22]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-04

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% Two-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	8.02
	9/20/2016	8.28
	11/7/2016	7.99
	1/9/2017	7.86
	2/27/2017	7.91
	4/18/2017	7.81
	6/5/2017	7.95
	7/24/2017	7.85
	9/13/2017	7.6
	10/2/2017	7.78
	3/26/2018	7.79
	10/1/2018	7.92
	3/18/2019	7.87
	9/16/2019	7.76
	3/17/2020	7.79
	9/15/2020	7.8

From 16 baseline samples
Baseline mean = 7.87375
Baseline std Dev = 0.148363

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1)/2 = 97.5 %
t is Percentile of Student's T-Test (0.95/1/2) = 0.975
Degrees of Freedom = 16 (background observations) - 1
t(0.975, 16) = 2.13145

Date	Samples	Mean	Interval	Significant
4/9/2021	1	7.59	[7.55, 8.2]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-09

Parameter: pH, Field

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% Two-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	8.41
	9/20/2016	8.51
	11/9/2016	8.26
	1/10/2017	7.91
	2/28/2017	8.22
	4/17/2017	8.15
	6/5/2017	8.16
	7/26/2017	8.2
	9/14/2017	7.83
	10/3/2017	8.08
	3/27/2018	7.8
	10/4/2018	8.38
	3/20/2019	7.95
	9/17/2019	8.02
	3/19/2020	8.08
	9/15/2020	7.86

From 16 baseline samples
Baseline mean = 8.11375
Baseline std Dev = 0.213225

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1)/2 = 97.5 %
t is Percentile of Student's T-Test (0.95/1/2) = 0.975
Degrees of Freedom = 16 (background observations) - 1
t(0.975, 16) = 2.13145

Date	Samples	Mean	Interval	Significant
4/9/2021	1	7.75	[7.65, 8.58]	FALSE

Skewness Coefficient

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	5.17059	3.91899	**1.82668**
MW-16-02	17	6.66471	4.38591	0.986028
MW-16-03	16	2.80625	1.75213	0.793467
MW-16-04	17	17.5	15.8765	**1.84853**
MW-16-09	17	17.2765	10.3164	0.423823

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	9.96786	10.7576	**2.44893**

Skewness Coefficient

Parameter: Sulfate

Original Data (Not Transformed)

Aitchison's Adjustment

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	4.72941	4.33903	**1.62978**
MW-16-02	17	6.48824	4.61477	**1.02518**
MW-16-03	16	1.9625	1.89169	**12.2351**
MW-16-04	17	17.4706	15.9104	**1.84914**
MW-16-09	17	16.9824	10.7504	0.524022

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	9.61667	11.0179	**2.38998**

Skewness Coefficient

Parameter: Sulfate

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	1.41326	0.695102	0.168359
MW-16-02	17	1.6455	0.832922	**-1.17517**
MW-16-03	16	0.814893	0.741961	-0.723404
MW-16-04	17	2.47068	1.06061	**-1.3191**
MW-16-09	17	2.64512	0.705517	-0.490053

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	1.80959	1.04885	-0.280969

Skewness Coefficient

Parameter: Sulfate

Natural Logarithm Transformation

Aitchison's Adjustment

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	1.25156	0.885197	0.459781
MW-16-02	17	1.63237	0.810537	-0.18263
MW-16-03	16	0.643088	0.593539	**4.11712**
MW-16-04	17	2.51146	0.937566	-0.747506
MW-16-09	17	2.55045	0.926543	0.0342697

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	1.73058	1.10264	0.311157

Shapiro-Wilks Test of Normality

Parameter: Sulfate

Location: MW-16-03

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Aitchison's Adjustment

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1	10	9	0.5056	4.5504
2	1	10	9	0.329	2.961
3	1.4	6.9	5.5	0.2521	1.38655
4	1.6	5	3.4	0.1939	0.65926
5	1.7	4.4	2.7	0.1447	0.39069
6	1.7	3.3	1.6	0.1005	0.1608
7	2.4	2.8	0.4	0.0593	0.02372
8	2.5	2.7	0.2	0.0196	0.00392
9	2.7	2.5	-0.2		
10	2.8	2.4	-0.4		
11	3.3	1.7	-1.6		
12	4.4	1.7	-2.7		
13	5	1.6	-3.4		
14	6.9	1.4	-5.5		
15	10	1	-9		
16	10	1	-9		

Sum of b values = 10.1363
Sample Standard Deviation = 2.93417
W Statistic = 0.795612

5% Critical value of 0.887 exceeds 0.795612
Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.795612
Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Sulfate

Location: MW-16-03

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Aitchison's Adjustment

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0	2.30259	2.30259	0.5056	1.16419
2	0	2.30259	2.30259	0.329	0.75755
3	0.336472	1.93152	1.59505	0.2521	0.402112
4	0.470004	1.60944	1.13943	0.1939	0.220936
5	0.530628	1.4816	0.950976	0.1447	0.137606
6	0.530628	1.19392	0.663294	0.1005	0.0666611
7	0.875469	1.02962	0.154151	0.0593	0.00914114
8	0.916291	0.993252	0.076961	0.0196	0.00150844
9	0.993252	0.916291	-0.076961		
10	1.02962	0.875469	-0.154151		
11	1.19392	0.530628	-0.663294		
12	1.4816	0.530628	-0.950976		
13	1.60944	0.470004	-1.13943		
14	1.93152	0.336472	-1.59505		
15	2.30259	0	-2.30259		
16	2.30259	0	-2.30259		

Sum of b values = 2.7597
Sample Standard Deviation = 0.733553
W Statistic = 0.943562

5% Critical value of 0.887 is less than 0.943562
Data is normally distributed at 95% level of significance

1% Critical value of 0.844 is less than 0.943562
Data is normally distributed at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Sulfate

Location: MW-16-04

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 17 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.5	66	65.5	0.4968	32.5404
2	5.1	36	30.9	0.3273	10.1136
3	6	35	29	0.254	7.366
4	7.2	25.5	18.3	0.1988	3.63804
5	7.9	20	12.1	0.1524	1.84404
6	9.3	15	5.7	0.1109	0.63213
7	11	14	3	0.0725	0.2175
8	13	13	0	0.0359	0
9	13	13	0		
10	13	13	0		
11	14	11	-3		
12	15	9.3	-5.7		
13	20	7.9	-12.1		
14	25.5	7.2	-18.3		
15	35	6	-29		
16	36	5.1	-30.9		
17	66	0.5	-65.5		

Sum of b values = 56.3517
Sample Standard Deviation = 15.8765
W Statistic = 0.787382

5% Critical value of 0.892 exceeds 0.787382
Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.787382
Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Sulfate

Location: MW-16-04

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 17 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.693147	4.18965	4.8828	0.4968	2.42578
2	1.62924	3.58352	1.95428	0.3273	0.639635
3	1.79176	3.55535	1.76359	0.254	0.447952
4	1.97408	3.23868	1.2646	0.1988	0.251402
5	2.06686	2.99573	0.92887	0.1524	0.14156
6	2.23001	2.70805	0.478036	0.1109	0.0530142
7	2.3979	2.63906	0.241162	0.0725	0.0174842
8	2.56495	2.56495	0	0.0359	0
9	2.56495	2.56495	0		
10	2.56495	2.56495	0		
11	2.63906	2.3979	-0.241162		
12	2.70805	2.23001	-0.478036		
13	2.99573	2.06686	-0.92887		
14	3.23868	1.97408	-1.2646		
15	3.55535	1.79176	-1.76359		
16	3.58352	1.62924	-1.95428		
17	4.18965	-0.693147	-4.8828		

Sum of b values = 3.97682

Sample Standard Deviation = 1.06061

W Statistic = 0.878701

5% Critical value of 0.892 exceeds 0.878701

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 is less than 0.878701

Data is normally distributed at 99% level of significance

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-01

Parameter: Sulfate

Natural Logarithm Transformation

Aitchison's Adjustment

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/1/2016	0.405465
	9/20/2016	0.405465
	11/7/2016	ND<1.60944 U
	1/9/2017	0.641854 F1
	2/27/2017	ND<1.60944 U
	4/17/2017	ND<1.60944 U
	6/5/2017	1.52606
	7/24/2017	1.56862
	9/11/2017	1.97408
	10/2/2017	1.43508
	3/26/2018	0.741937
	10/1/2018	1.90211
	3/18/2019	1.75786
	9/16/2019	2.0149
	3/17/2020	1.97408
	9/14/2020	2.06686

From 16 baseline samples
Baseline mean = 1.1509
Baseline std Dev = 0.807502

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/8/2021	1	2.8622	[0, 2.61006]	TRUE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-02

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	18
	9/19/2016	ND<0.5 U
	11/7/2016	ND<2.5 U
	1/9/2017	2
	2/27/2017	12
	4/17/2017	11
	6/5/2017	11
	7/24/2017	8.3
	9/12/2017	7.6
	10/2/2017	7.7
	3/26/2018	4.9
	10/1/2018	4
	3/18/2019	4.8
	9/16/2019	5.8
	3/17/2020	5.2
	9/15/2020	4.6

From 16 baseline samples
Baseline mean = 6.86875
Baseline std Dev = 4.44563

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/8/2021	1	3.4	[0, 14.902]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-03

Parameter: Sulfate

Natural Logarithm Transformation

Aitchison's Adjustment

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	1.93152
	9/19/2016	1.19392
	11/7/2016	ND<2.30259 U
	1/9/2017	1.4816
	2/27/2017	ND<2.30259 U
	4/17/2017	ND<1.60944 U
	6/5/2017	0.993252
	7/24/2017	1.02962
	10/2/2017	0.916291
	3/26/2018	0.530628
	10/1/2018	0.470004
	3/18/2019	0.875469
	9/16/2019	0.530628
	3/17/2020	ND<0 U
	9/14/2020	ND<0

From 15 baseline samples
Baseline mean = 0.663529
Baseline std Dev = 0.608514

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 15 (background observations) - 1
t(0.95, 15) = 1.76131

Date	Samples	Mean	Interval	Significant
4/8/2021	1	0.336472	[0, 1.77046]	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-04

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 6.66667%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 36
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/2/2016	14
	9/20/2016	ND<0.5 U
	11/7/2016	5.1
	1/9/2017	6
	2/27/2017	11
	4/18/2017	15
	6/5/2017	9.3
	7/24/2017	13
	9/13/2017	7.2
	10/2/2017	7.9
	3/26/2018	13
	10/1/2018	13
	3/18/2019 ~	25.5
	9/16/2019	20
	3/17/2020	36

Date	Count	Mean	Significant
4/9/2021	1	66	TRUE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-09

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	8.4
	9/20/2016	3.3
	11/9/2016	12
	1/10/2017	19
	2/28/2017	27
	4/17/2017	27
	6/5/2017	27
	7/25/2017	ND<5 U
	9/14/2017	32
	10/3/2017	24
	3/27/2018	38
	10/4/2018	5.5
	3/20/2019	18
	9/17/2019	12
	3/19/2020	9.5
	9/15/2020	11

From 16 baseline samples
Baseline mean = 17.4187
Baseline std Dev = 10.6375

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/9/2021	1	15	[0, 36.6407]	FALSE

Skewness Coefficient

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	924.412	31.0183	**-1.12054**
MW-16-02	17	760.588	46.8336	**1.91474**
MW-16-03	16	1073.75	47.1699	**-1.18763**
MW-16-04	17	982.941	51.206	**1.22374**
MW-16-09	17	1764.71	116.946	-0.486698

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	1101.61	357.065	**1.20443**

Skewness Coefficient

Parameter: Total Dissolved Solids

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

Skewness > 1 indicates positively skewed data
Skewness < -1 indicates negatively skewed data

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	17	6.82861	0.0342219	**-1.19877**
MW-16-02	17	6.63242	0.0585801	**1.69462**
MW-16-03	16	6.97798	0.0451095	**-1.19154**
MW-16-04	17	6.88932	0.0506722	**1.11029**
MW-16-09	17	7.47362	0.0676208	-0.632044

All Locations

Obs.	Mean	Std. Dev.	Skewness
84	6.96018	0.288553	0.859689

Shapiro-Wilks Test of Normality

Parameter: Total Dissolved Solids

Location: MW-16-01

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 17 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	850	965	115	0.4968	57.132
2	860	960	100	0.3273	32.73
3	910	950	40	0.254	10.16
4	910	950	40	0.1988	7.952
5	920	950	30	0.1524	4.572
6	920	940	20	0.1109	2.218
7	920	930	10	0.0725	0.725
8	920	930	10	0.0359	0.359
9	930	930	0		
10	930	920	-10		
11	930	920	-10		
12	940	920	-20		
13	950	920	-30		
14	950	910	-40		
15	950	910	-40		
16	960	860	-100		
17	965	850	-115		

Sum of b values = 115.848
Sample Standard Deviation = 31.0183
W Statistic = 0.871811

5% Critical value of 0.892 exceeds 0.871811
Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 is less than 0.871811
Data is normally distributed at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Total Dissolved Solids

Location: MW-16-01

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 17 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	6.74524	6.87213	0.126892	0.4968	0.0630398
2	6.75693	6.86693	0.110001	0.3273	0.0360033
3	6.81344	6.85646	0.0430174	0.254	0.0109264
4	6.81344	6.85646	0.0430174	0.1988	0.00855186
5	6.82437	6.85646	0.0320883	0.1524	0.00489026
6	6.82437	6.84588	0.0215062	0.1109	0.00238504
7	6.82437	6.83518	0.0108109	0.0725	0.000783791
8	6.82437	6.83518	0.0108109	0.0359	0.000388112
9	6.83518	6.83518	0		
10	6.83518	6.82437	-0.0108109		
11	6.83518	6.82437	-0.0108109		
12	6.84588	6.82437	-0.0215062		
13	6.85646	6.82437	-0.0320883		
14	6.85646	6.81344	-0.0430174		
15	6.85646	6.81344	-0.0430174		
16	6.86693	6.75693	-0.110001		
17	6.87213	6.74524	-0.126892		

Sum of b values = 0.126969

Sample Standard Deviation = 0.0342219

W Statistic = 0.860328

5% Critical value of 0.892 exceeds 0.860328

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 is less than 0.860328

Data is normally distributed at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Total Dissolved Solids

Location: MW-16-02

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 17 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	710	910	200	0.4968	99.36
2	710	810	100	0.3273	32.73
3	720	780	60	0.254	15.24
4	730	770	40	0.1988	7.952
5	730	770	40	0.1524	6.096
6	730	770	40	0.1109	4.436
7	750	760	10	0.0725	0.725
8	760	760	0	0.0359	0
9	760	760	0		
10	760	760	0		
11	760	750	-10		
12	770	730	-40		
13	770	730	-40		
14	770	730	-40		
15	780	720	-60		
16	810	710	-100		
17	910	710	-200		

Sum of b values = 166.539
Sample Standard Deviation = 46.8336
W Statistic = 0.79031

5% Critical value of 0.892 exceeds 0.79031
Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.79031
Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Total Dissolved Solids

Location: MW-16-02

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 17 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	6.56526	6.81344	0.24818	0.4968	0.123296
2	6.56526	6.69703	0.131769	0.3273	0.0431281
3	6.57925	6.65929	0.0800427	0.254	0.0203308
4	6.59304	6.64639	0.053346	0.1988	0.0106052
5	6.59304	6.64639	0.053346	0.1524	0.00812993
6	6.59304	6.64639	0.053346	0.1109	0.00591607
7	6.62007	6.63332	0.0132452	0.0725	0.000960279
8	6.63332	6.63332	0	0.0359	0
9	6.63332	6.63332	0		
10	6.63332	6.63332	0		
11	6.63332	6.62007	-0.0132452		
12	6.64639	6.59304	-0.053346		
13	6.64639	6.59304	-0.053346		
14	6.64639	6.59304	-0.053346		
15	6.65929	6.57925	-0.0800427		
16	6.69703	6.56526	-0.131769		
17	6.81344	6.56526	-0.24818		

Sum of b values = 0.212366

Sample Standard Deviation = 0.0585801

W Statistic = 0.82139

5% Critical value of 0.892 exceeds 0.82139

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.82139

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Total Dissolved Solids

Location: MW-16-03

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	980	1100	120	0.5056	60.672
2	1000	1100	100	0.329	32.9
3	1000	1100	100	0.2521	25.21
4	1000	1100	100	0.1939	19.39
5	1100	1100	0	0.1447	0
6	1100	1100	0	0.1005	0
7	1100	1100	0	0.0593	0
8	1100	1100	0	0.0196	0
9	1100	1100	0		
10	1100	1100	0		
11	1100	1100	0		
12	1100	1100	0		
13	1100	1000	-100		
14	1100	1000	-100		
15	1100	1000	-100		
16	1100	980	-120		

Sum of b values = 138.172
Sample Standard Deviation = 47.1699
W Statistic = 0.57203

5% Critical value of 0.887 exceeds 0.57203
Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.57203
Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Total Dissolved Solids

Location: MW-16-03

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 16 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	6.88755	7.00307	0.115513	0.5056	0.0584033
2	6.90776	7.00307	0.0953102	0.329	0.031357
3	6.90776	7.00307	0.0953102	0.2521	0.0240277
4	6.90776	7.00307	0.0953102	0.1939	0.0184806
5	7.00307	7.00307	0	0.1447	0
6	7.00307	7.00307	0	0.1005	0
7	7.00307	7.00307	0	0.0593	0
8	7.00307	7.00307	0	0.0196	0
9	7.00307	7.00307	0		
10	7.00307	7.00307	0		
11	7.00307	7.00307	0		
12	7.00307	7.00307	0		
13	7.00307	6.90776	-0.0953102		
14	7.00307	6.90776	-0.0953102		
15	7.00307	6.90776	-0.0953102		
16	7.00307	6.88755	-0.115513		

Sum of b values = 0.132269
Sample Standard Deviation = 0.0451095
W Statistic = 0.573174

5% Critical value of 0.887 exceeds 0.573174
Evidence of non-normality at 95% level of significance

1% Critical value of 0.844 exceeds 0.573174
Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Total Dissolved Solids

Location: MW-16-04

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 8 for 17 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	920	1100	180	0.4968	89.424
2	920	1100	180	0.3273	58.914
3	940	1000	60	0.254	15.24
4	950	1000	50	0.1988	9.94
5	950	1000	50	0.1524	7.62
6	960	1000	40	0.1109	4.436
7	960	990	30	0.0725	2.175
8	970	980	10	0.0359	0.359
9	970	970	0		
10	980	970	-10		
11	990	960	-30		
12	1000	960	-40		
13	1000	950	-50		
14	1000	950	-50		
15	1000	940	-60		
16	1100	920	-180		
17	1100	920	-180		

Sum of b values = 188.108

Sample Standard Deviation = 51.206

W Statistic = 0.843436

5% Critical value of 0.892 exceeds 0.843436

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.843436

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Total Dissolved Solids

Location: MW-16-04

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 8 for 17 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	6.82437	7.00307	0.178692	0.4968	0.0887741
2	6.82437	7.00307	0.178692	0.3273	0.0584858
3	6.84588	6.90776	0.0618754	0.254	0.0157164
4	6.85646	6.90776	0.0512933	0.1988	0.0101971
5	6.85646	6.90776	0.0512933	0.1524	0.0078171
6	6.86693	6.90776	0.040822	0.1109	0.00452716
7	6.86693	6.8977	0.0307717	0.0725	0.00223095
8	6.8773	6.88755	0.0102565	0.0359	0.000368208
9	6.8773	6.8773	0		
10	6.88755	6.8773	-0.0102565		
11	6.8977	6.86693	-0.0307717		
12	6.90776	6.86693	-0.040822		
13	6.90776	6.85646	-0.0512933		
14	6.90776	6.85646	-0.0512933		
15	6.90776	6.84588	-0.0618754		
16	7.00307	6.82437	-0.178692		
17	7.00307	6.82437	-0.178692		

Sum of b values = 0.188117
Sample Standard Deviation = 0.0506722
W Statistic = 0.86138

5% Critical value of 0.892 exceeds 0.86138
Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 is less than 0.86138
Data is normally distributed at 99% level of significance

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-01

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 965
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/1/2016	930
	9/20/2016	920
	11/7/2016	920
	1/9/2017	940
	2/27/2017	950
	4/17/2017	920
	6/5/2017	910
	7/24/2017	920
	9/11/2017	910
	10/2/2017	930
	3/26/2018	950
	10/1/2018	860
	3/18/2019 ~	965
	9/16/2019	950
	3/17/2020	930

Date	Count	Mean	Significant
4/8/2021	1	850	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-02

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 910
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/2/2016	760
	9/19/2016	710
	11/7/2016	720
	1/9/2017	780
	2/27/2017	760
	4/17/2017	910
	6/5/2017	810
	7/24/2017	760
	9/12/2017	770
	10/2/2017	760
	3/26/2018	730
	10/1/2018	730
	3/18/2019	730 H
	9/16/2019	770
	3/17/2020	770

Date	Count	Mean	Significant
4/8/2021	1	750	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-03

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 1100
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/2/2016	1100
	9/19/2016	1100
	11/7/2016	1100
	1/9/2017	1100
	2/27/2017	1100
	4/17/2017	1100
	6/5/2017	1100
	7/24/2017	1100
	10/2/2017	1100
	3/26/2018	1000
	10/1/2018	980
	3/18/2019	1100
	9/16/2019	1000
	3/17/2020	1100
	9/14/2020	1000

Date	Count	Mean	Significant
4/8/2021	1	1100	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-04

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 15
Maximum Baseline Concentration = 1100
Confidence Level = 93.8%
False Positive Rate = 6.2%

Baseline Measurements	Date	Value
	8/2/2016	940
	9/20/2016	960
	11/7/2016	960
	1/9/2017	1100
	2/27/2017	970
	4/18/2017	980
	6/5/2017	1000
	7/24/2017	1000
	9/13/2017	950
	10/2/2017	1000
	3/26/2018	920
	10/1/2018	920
	3/18/2019	990
	9/16/2019	970
	3/17/2020	1000

Date	Count	Mean	Significant
4/9/2021	1	1100	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-09

Parameter: Total Dissolved Solids

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Intra-Well Unified Guid. Formula 95% One-Sided Comparison

Baseline Samples	Date	Result
	8/2/2016	1700
	9/20/2016	1800
	11/9/2016	1800
	1/10/2017	1900
	2/28/2017	1900
	4/17/2017	1900
	6/5/2017	1900
	7/25/2017	1800
	9/14/2017	1700
	10/3/2017	1700
	3/27/2018	1700
	10/4/2018	1500
	3/20/2019	1700
	9/17/2019	1800
	3/19/2020	1700
	9/15/2020	1900

From 16 baseline samples
Baseline mean = 1775
Baseline std Dev = 112.546

For 1 recent sampling event(s)
Actual confidence level is 1.0 - (0.05/1) = 95 %
t is Percentile of Student's T-Test (0.95/1) = 0.95
Degrees of Freedom = 16 (background observations) - 1
t(0.95, 16) = 1.75305

Date	Samples	Mean	Interval	Significant
4/9/2021	1	1600	[0, 1978.37]	FALSE

Appendix D
Alternative Source Demonstration, First Semiannual 2021 Groundwater Sampling Event

1540 Eisenhower Pl.
Ann Arbor, MI 48108

T 734.971.7080
TRCcompanies.com

August 16, 2021

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

Subject: Alternative Source Demonstration, First Semiannual 2021 Groundwater Sampling Event
Belle River Power Plant Bottom Ash Basins Coal Combustion Residual Unit
4505 King Road, China Township, Michigan

Dear Ms. Carnagie:

TRC was retained by DTE Electric Company (DTE Electric) to conduct routine groundwater monitoring activities at the Belle River Power Plant (BRPP) CCR Bottom Ash Basins (BABs) coal combustion residual (CCR) unit (the Site), located in St Clair County, Michigan. Routine groundwater monitoring at the BRPP BABs CCR unit is conducted in accordance with the Michigan Department of Environment, Great Lakes, and Energy (EGLE) approved *Hydrogeological Monitoring Plan* for the Site (BRPP BABs and DB HMP) (TRC, August 26, 2020; Revised December 8, 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 *First Semiannual 2021 Groundwater Monitoring Report* for the Site (TRC, July 2021), the statistical evaluation of the April 2021 detection monitoring indicator parameters indicated potential statistically significant increases (SSIs) for sulfate at MW-16-01 (23 milligrams per liter (mg/L) with a prediction limit (PL) of 8.1 mg/L) and pH at MW-16-09 (7.5 standard units (SUs) with a PL range of 7.7 to 8.7 SUs). Verification resampling for the April 2021 event was conducted on May 18, 2021 by TRC personnel. The verification result for pH at MW-16-09 (8.0 SUs) was within the PL range (7.7 to 8.7 SUs), consequently the initial potential SSI for pH at MW-16-09 is not confirmed. Therefore, in accordance with the *Groundwater Statistical Evaluation Plan – Belle River Power Plant Coal Combustion Residual Bottom Ash Basins* (Stats Plan) (TRC, October 2017, Revised December 2020b) and the *USEPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance) (USEPA, 2009), the initial exceedance is not statistically significant, and no SSI will be recorded for pH at MW-16-09. The verification result for sulfate at MW-16-01 (12 mg/L) was above the PL (8.1 mg/L); therefore, the initial SSI for sulfate at MW-16-01 is confirmed (Table 1).

In accordance with §257.94(e)(2) and the BRPP BABs and DB 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 potential SSI for sulfate at MW-16-01 identified in the April 2021 detection monitoring event.

Background

The BRPP is located in China Township in St. Clair County, Michigan. The site location is shown in Figure 1. The BRPP was constructed in the early 1980s with plant operations beginning in 1984. The property has been used continuously as a coal fired power plant since Detroit Edison Company (now DTE Electric) began power plant operations and is generally constructed over a natural clay rich soil base. The BABs have been in use with the BRPP since it began operation and have collected CCR bottom ash that is periodically cleaned out and either sold for beneficial reuse or disposed of at the Range Road Landfill (RRLF).

The BRPP BABs are two adjacent physical sedimentation basins that are slightly raised CCR surface impoundments referred to as the North and South BABs, located north of the BRPP. These are considered one CCR unit. The BABs receive sluiced bottom ash and other process flow water from the power plant. Discharge water from each BAB gravity flows over an outlet weir to a conveyance network of ditches and pipes, then flows into the diversion basin (DB) CCR unit, which is monitored as a separate CCR unit in accordance with the CCR Rule.

The BRPP BABs CCR unit is located approximately one-mile west of the St. Clair River. The BRPP BABs CCR unit is underlain by more than 130 feet of unconsolidated sediments, with the lower confining Bedford Shale generally encountered at 135 to 145 feet below ground surface (bgs). In general, the BRPP BABs CCR unit is initially underlain by at least 90 to as much as 136 feet of laterally extensive low hydraulic conductivity silty clay-rich deposits. The depth to the top of the confined sand-rich uppermost aquifer encountered immediately beneath the silty clay-rich deposits varies up to 46 feet within the monitoring well network and rapidly thins to the south and east of the BABs and pinches out (e.g., no longer present) to the southeast. Consequently, the uppermost aquifer is not laterally contiguous across the entire BRPP BABs CCR unit, and is not present in the southeastern corner of the BABs.

Given the horizontally expansive clay with substantial vertical thickness that isolates the uppermost aquifer from the BRPP BABs CCR unit, the heterogeneity of the glacial deposits (with the top of the uppermost aquifer elevation across the BABs, where present, varying up to 46 feet vertically), the no flow boundary where no sand or gravel is present in the southeastern portion of the BABs CCR unit area, and the apparent lack of hydraulic interconnectedness of the uppermost aquifer encountered at the BABs in some areas, it is not appropriate to infer horizontal flow direction or gradients across the BRPP BABs CCR unit.

The detection monitoring well network for the BABs CCR unit currently consists of five monitoring wells that are screened in the uppermost aquifer. As discussed in the Stats Plan, intrawell statistical methods for the BABs CCR unit 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 presence of no flow boundary on the southeast 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). Monitoring wells MW-16-01 through MW-16-04 and MW-16-09 are located around the north, east and south perimeter of the BABs and provide data on both background and downgradient groundwater quality that has not been affected by the CCR unit

(total of five background/downgradient monitoring wells). The monitoring well locations are shown in Figure 2. The *Groundwater Monitoring System Summary Report – DTE Electric Company Belle River Power Plant Bottom Ash Basins and Diversion Basin Coal Combustion Residual Units* (TRC, October 2017, Revised December 2020a) (Appendix A of the BRPP BABs and DB HMP) details the groundwater monitoring system and the geology/ hydrogeology.

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. 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 May 18, 2021 by TRC personnel. Groundwater samples were collected for sulfate at monitoring well MW-16-01 and field parameters including pH were collected at MW-16-09 in accordance with the *CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company Belle River Power Plant Bottom Ash Basins and Diversion Basin* (QAPP) (TRC, July 2016; revised August 2017 and December 2020). A summary of the groundwater data collected during the verification resampling event is provided on Table 1.

The verification resampling confirmed the sulfate exceedance at MW-16-01 (12 mg/L with a PL of 8.1 mg/L) and did not confirm the pH exceedance at MW-16-09 (8.0 SUs with a PL range of 7.7 to 8.7 SUs). The following discussion presents the ASD for the confirmed prediction limit exceedance for sulfate at MW-16-01.

Sulfate at MW-16-01: The sulfate concentrations at MW-16-01, shown graphically as data points greater than the prediction limit in Figure 3, are the result of natural variability in groundwater quality at the site and not the result of a release from the BRPP BABs CCR unit. Multiple lines of evidence are provided in support of this conclusion and are as follows:

- **Spatial variability in groundwater quality** – After 8 background sampling events, the prediction limits for sulfate calculated for each of the 5 monitoring wells range from 8.1 mg/L to 40 mg/L. This variability in groundwater quality across the site, shows that the sulfate concentrations vary spatially throughout the uppermost aquifer and shows the confirmed sulfate SSI at MW-16-01 (based on detections of 23 and 12 mg/L, respectively), is attributable to spatial variability rather than the CCR unit. In addition, the concentrations of sulfate detected within all the BRPP BABs CCR unit monitoring wells in the first semiannual 2021 groundwater sampling event at the Site are well below the applicable federal National Secondary Drinking Water Regulation standard and the Michigan Part 201 drinking water criteria of 250 mg/L.
- **Insufficient background sampling timeline to account for long-term trends** – Variability in sulfate concentrations observed in the groundwater at BRPP during the background sampling events provides evidence of the heterogeneity of this constituent in groundwater. The short duration of the background sampling events limits the ability of the statistical analysis to capture the natural temporal trends in the groundwater quality at the BRPP.

- **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 suggests a source other than CCR leachate for the observed sulfate SSI at this location.
- **Time of travel analysis** – The clay formation immediately beneath the BRPP BABs 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 8 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 BRPP BABs CCR unit through a minimum of 82 feet of clay, to the underlying upper aquifer, yields approximately 1,300 years of travel time (TRC, October 2017; Revised December 2020a). The BRPP BABs CCR unit began accepting coal ash in approximately 1984, so, based on this analysis, there is no potential for indicator parameters to have migrated to the upper aquifer.

Conclusions and Recommendations

The information provided in this report serves as the ASD for the DTE Electric BRPP BABs CCR unit, was prepared in accordance with 40 CFR 257.94(e)(2) of the CCR Rule and the BRPP BABs and DB HMP, and demonstrates that the sulfate SSI determined based on the first semiannual detection monitoring event performed in 2021 is not due to a release of CCR leachate into the groundwater. Therefore, based on the information provided in this ASD, DTE Electric will continue detection monitoring as per 40 CFR 257.94 and the BRPP BABs and DB HMP at the BRPP BABs CCR unit.

Signatures and Certifications

Engineer Certification Statement

I hereby certify that the alternative source demonstration presented within this document for the BRPP BAB CCR unit has been prepared to meet the requirements of Title 40 CFR §257.94(e)(2) of the Federal CCR Rule and the December 8, 2020 *Hydrogeological Monitoring Plan for the DTE Electric Company Belle River Power Plant Bottom Ash Basins and Diversion Basin Coal Combustion Residual Units* (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 HMP.

Name: David B. McKenzie, P.E.	Expiration Date: October 31, 2021	
Company: TRC Engineers Michigan, Inc.	Date: August 16, 2021	Stamp

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 Groundwater Detection Parameter Results to Background Limits – April and May 2021

Figure 1 Site Location Map
Figure 2 Site Plan
Figure 3 MW-16-01 Sulfate Time Series Plot
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'
Figure 8 Generalized Geologic Cross Section D-D'

Appendix A References

cc: Christopher P. Scieszka, DTE Electric Company

Table

Table 1
Comparison of Groundwater Detection Parameter Results to Background Limits – April and May 2021
Belle River Power Plant BABs – RCRA CCR Monitoring Program
China Township, Michigan

Sample Location:		MW-16-01			MW-16-02		MW-16-03		MW-16-04		MW-16-09		
Sample Date:		4/8/2021	5/18/2021	PL	4/8/2021	PL	4/8/2021	PL	4/9/2021	PL	4/9/2021	5/18/2021	PL
Constituent	Unit	Data			Data		Data		Data		Data		
Appendix III													
Boron	ug/L	1,000	--	1,300	1,100	1,300	1,100	1,300	1,000	1,100	1,500	--	1,900
Calcium	ug/L	41,000	--	45,000	49,000	59,000	34,000	36,000	51,000	64,000	38,000	--	41,000
Chloride	mg/L	450	--	530	360	400	560	690	470	520	940	--	1,100
Fluoride	mg/L	1.7	--	1.9	1.2	1.3	1.8	1.9	1.7	1.9	1.5	--	1.8
pH, Field	SU	7.6	--	7.6 - 8.1	7.5	7.4 - 8.0	7.7	7.5 - 8.3	7.6	7.5 - 8.4	**7.5**	8.0	7.7 - 8.7
Sulfate	mg/L	**23**	**12**	8.1	3.4	20	1.4	14	**66**[(1)]	18	15	--	40
Total Dissolved Solids	mg/L	850	--	950	750	890	1,100	1,100	1,100	1,100	1,600	--	2,000
Part 115 Parameters			--										
Iron	ug/L	840	--	n<8	740	n<8	750	n<8	1,500	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.

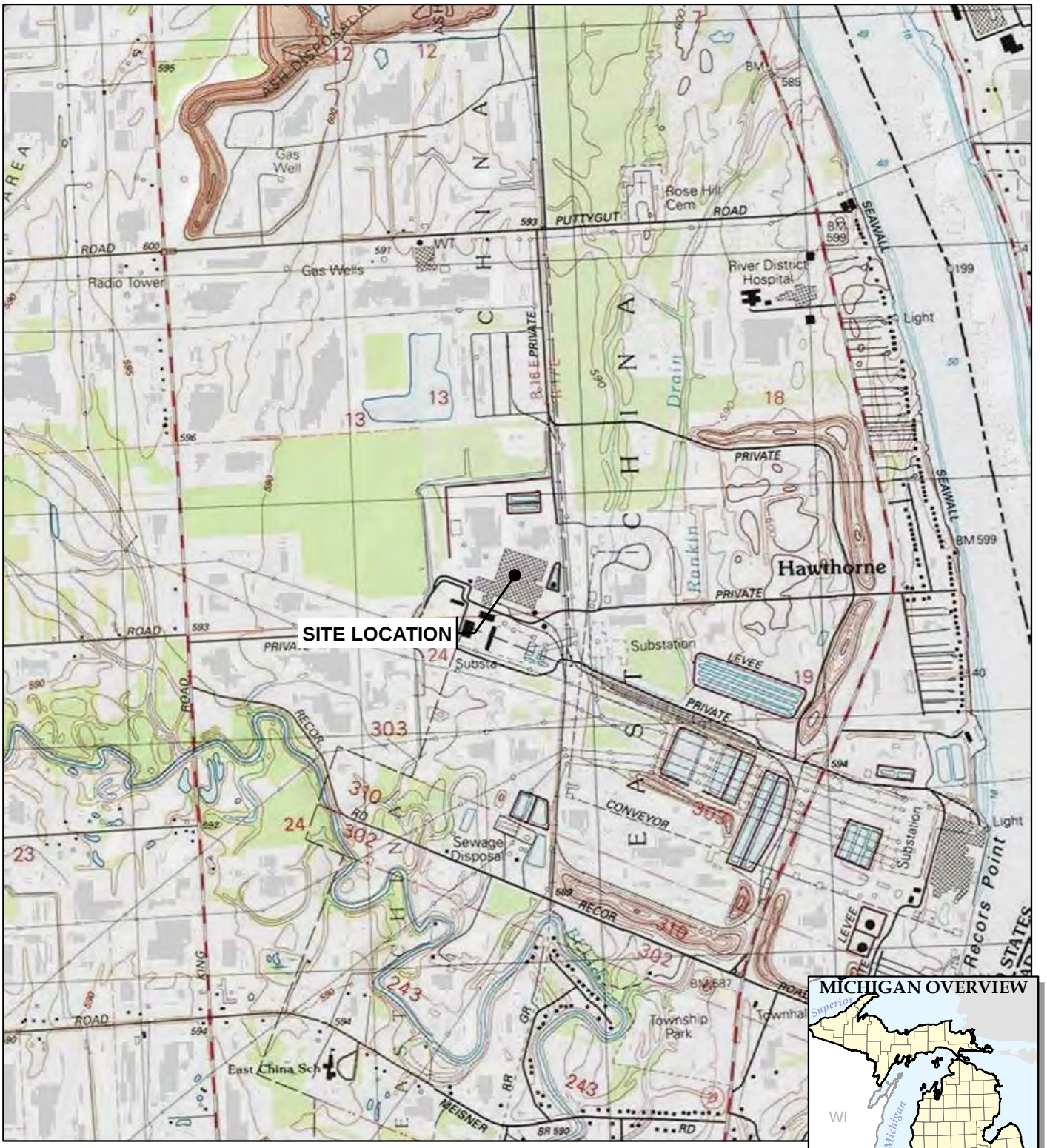
All metals were analyzed as total unless otherwise specified.

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

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

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

Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

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

0 2,000 4,000
FEET

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TRC - GIS

PROJECT:

DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT
4505 KING ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:

SITE LOCATION MAP

DRAWN BY:	A. ADAIR
CHECKED BY:	K. REMINGA
APPROVED BY:	V. BUENING
DATE:	JULY 2021
PROJ. NO.:	413591.0003
FILE:	413591-0003-008.mxd

FIGURE 1

\\employees\gis\madison_gis_data\Projects\DTE\CCR_Sites\2017_265996\413591-0003-008.mxd -- Saved By: AADAIR on 7/27/2021, 10:26:39 AM

LEGEND

- SOIL BORING
- MONITORING WELL
- DECOMMISSIONED MONITORING WELL

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO. & PARTNERS, (3/24/2019).
2. WELL LOCATIONS SURVEYED IN MARCH, APRIL, JUNE 2016, AND JUNE 2017 BY BMJ ENGINEERS & SURVEYORS, INC.

0 200 400 Feet

1 " = 200 '

1:2,400

PROJECT:
DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT BOTTOM ASH BASIN
4505 KING ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
SITE PLAN

DRAWN BY:	A. ADAIR	PROJ NO.:	413591.0003
CHECKED BY:	K. REMINGA		
APPROVED BY:	V. BUENING		**FIGURE 2**
DATE:	JULY 2021		

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FILE NO.: 413591-0003-009.mxd

TRC - GIS
Plot Date: 7/27/2021, 10:29:15 AM by AADAIR -- LAYOUT: ANSI B(11"x17")
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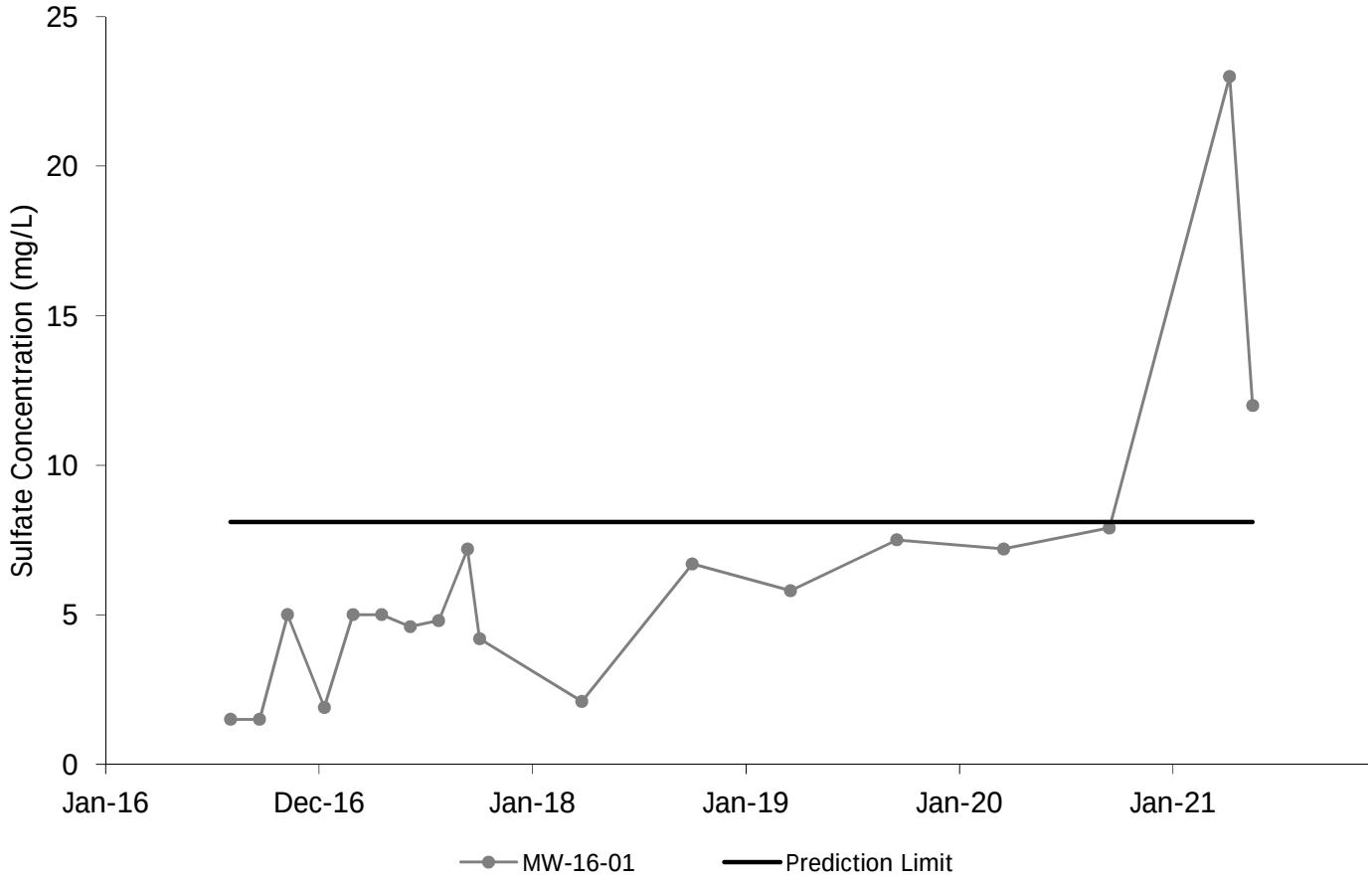
Map Rotation: 0

Figure 3
MW-16-01 Sulfate Time Series Plot
Belle River Power Plant Bottom Ash Basins - RCRA CCR Monitoring Program



LEGEND

- SOIL BORING
- MONITORING WELL
- DECOMMISSIONED MONITORING WELL
- CROSS SECTIONS

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, (3/23/2019).
2. WELL LOCATIONS SURVEYED IN MARCH, APRIL AND JUNE 2016 AND JUNE 2017 BY BMJ ENGINEERS & SURVEYORS, INC.
3. NO SAND, GRAVEL OR OTHER SATURATED ZONE WAS ENCOUNTERED ABOVE THE SHALE BEDROCK IN THIS LOCATION. THEREFORE, AN AQUIFER WAS NOT ENCOUNTERED AND A MONITORING WELL WAS NOT INSTALLED.

N

0 200 400 Feet

1 " = 200 '

1:2,400

PROJECT:
DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT BOTTOM ASH BASIN
4505 KING ROAD
CHINA TOWNSHIP, MICHIGAN

TITLE:
CROSS SECTION LOCATOR MAP

DRAWN BY:	A. ADAIR	PROJ NO.:	370029.0003
CHECKED BY:	K. CRATSENBURG		
APPROVED BY:	V. BUENING		**FIGURE 4**
DATE:	DECEMBER 2020		

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FILE NO.: 370029-0003-003.mxd

TRC - GIS
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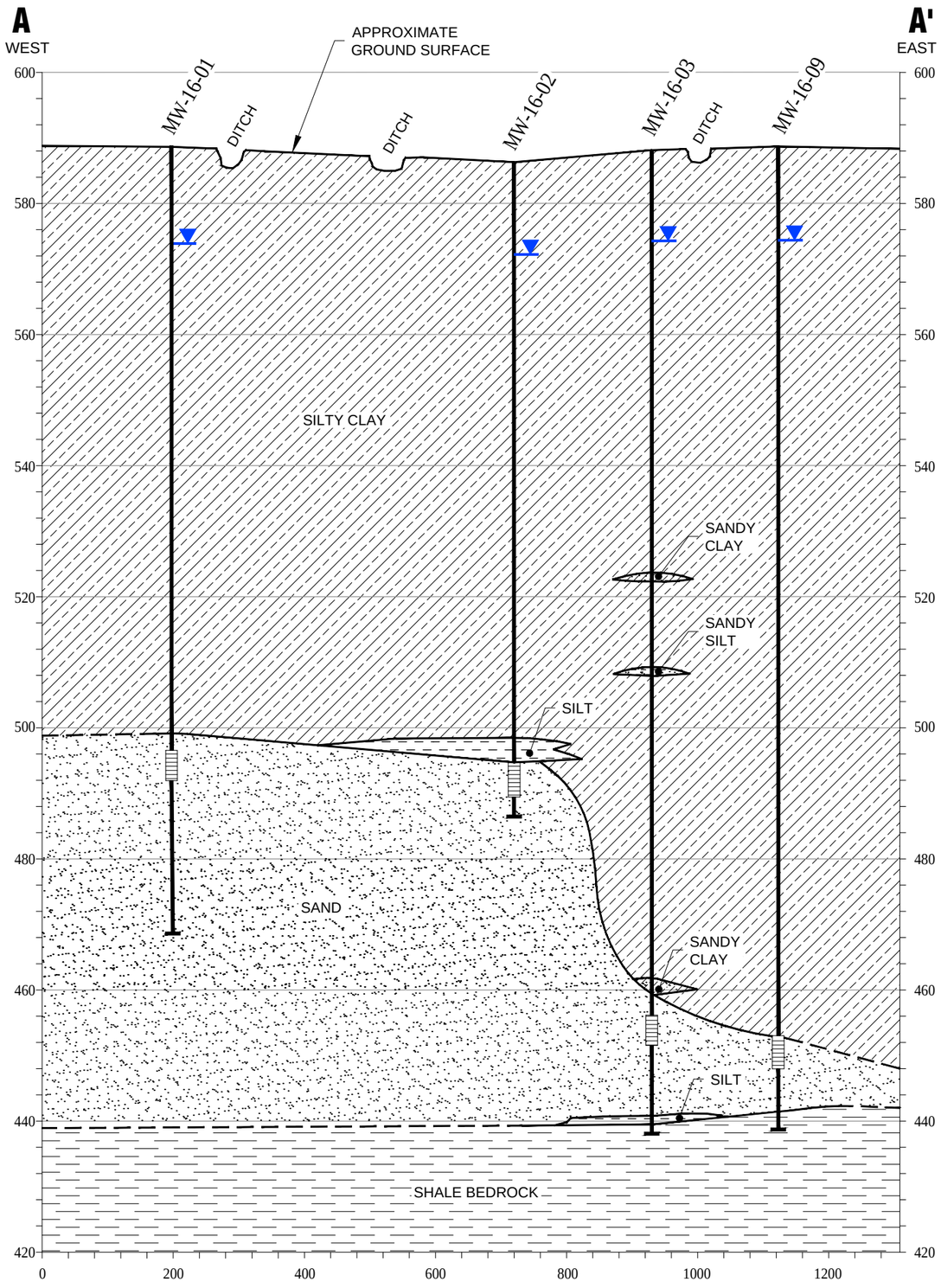
Map Rotation: 0
Plot Date: 12/1/2020, 20:27:22 PM by AHORRIE -- LAYOUT: ANSI B(11"x17")
Path: E:\DTE\CCR_Sites\2017_265996\370029-0003-003.mxd

GENERALIZED GEOLOGIC CROSS-SECTION A-A'



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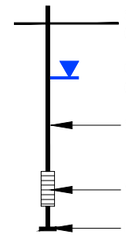
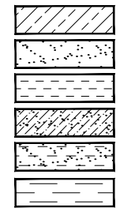
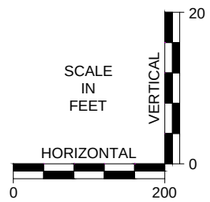


Lithology Key





PROJECT:
DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT
CHINA TOWNSHIP, MICHIGAN

TITLE:
GENERALIZED GEOLOGIC CROSS-SECTION A-A'

DRAWN BY:	D.STEHLE	PROJ NO.:	370029.0003.01.01
CHECKED BY:	S.HOLMSTROM		
APPROVED BY:	V.BUENING		**FIGURE 5**
DATE:	JULY 2020		

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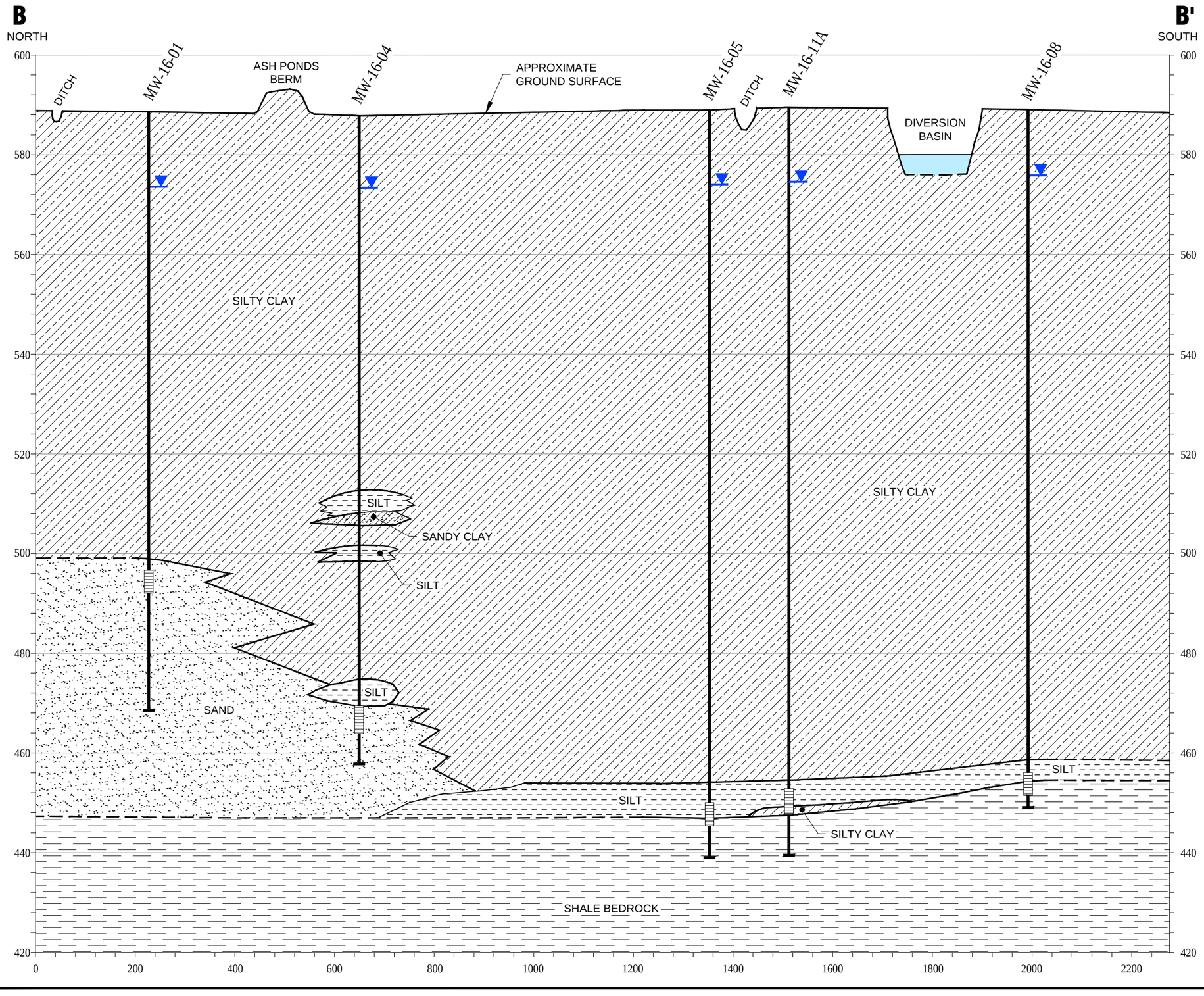
FILE NO.: 370029.0003.01.01.04-05.dwg

GENERALIZED GEOLOGIC CROSS-SECTION B-B'



LEGEND

- STRATEGRAPHIC BOUNDARY (DASHED WHERE INFERRED)
- GROUNDWATER ELEVATION (COLLECTED 02/27/2017)
- SOIL BORING
- WELL SCREEN INTERVAL
- END OF BORING

Lithology Key

- SILTY CLAY
- SAND
- SILT
- SANDY CLAY
- SHALE BEDROCK

SCALE IN FEET
VERTICAL: 20 / 0
HORIZONTAL: 0 / 200

PROJECT:
DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT
CHINA TOWNSHIP, MICHIGAN

TITLE:
GENERALIZED GEOLOGIC CROSS-SECTION B-B'

DRAWN BY:	D.STEHLE	PROJ NO.:	370029.0003.01.01
CHECKED BY:	S.HOLMSTROM		
APPROVED BY:	V.BUENING		**FIGURE 6**
DATE:	JULY 2020		

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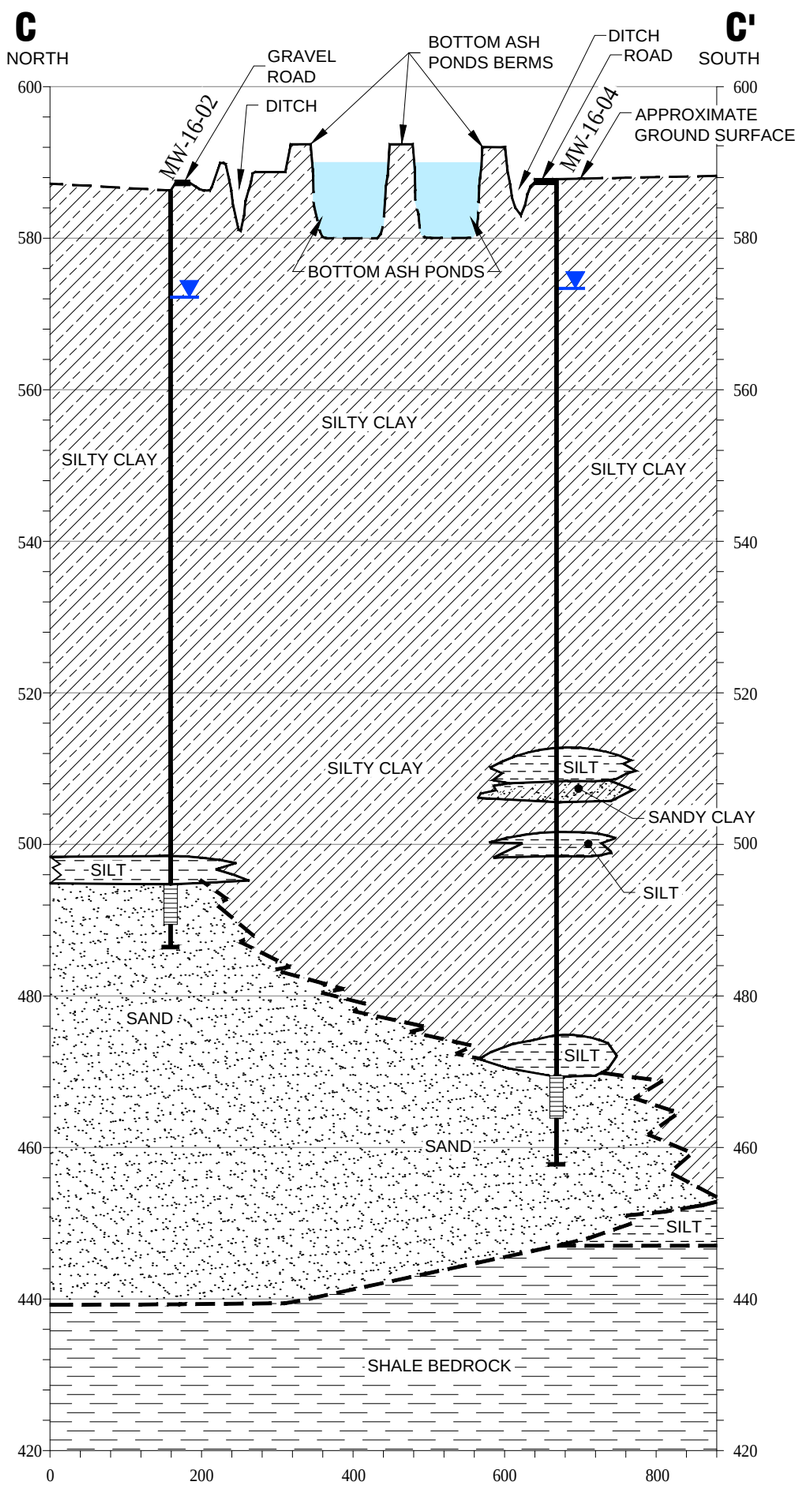
FILE NO.: 370029.0003.01.01.04-05.dwg

GENERALIZED GEOLOGIC CROSS-SECTION C-C'



LEGEND

- STRATEGRAPHIC BOUNDARY (DASHED WHERE INFERRED)
- GROUNDWATER ELEVATION (COLLECTED 02/27/2017)
- SOIL BORING
- WELL SCREEN INTERVAL
- END OF BORING

Lithology Key

- SILTY CLAY
- SAND
- SILT
- SANDY CLAY
- SHALE BEDROCK
- WATER

SCALE IN FEET
VERTICAL: 20, 0
HORIZONTAL: 0, 200

PROJECT:
DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT
CHINA TOWNSHIP, MICHIGAN

TITLE:
GENERALIZED GEOLOGIC CROSS-SECTION C-C'

DRAWN BY:	D.STEHLE	PROJ NO.:	370029.0003.01.01
CHECKED BY:	K.CRATSENBURG		
APPROVED BY:	K.CRATSENBURG		**FIGURE 7**
DATE:	NOVEMBER 2020		

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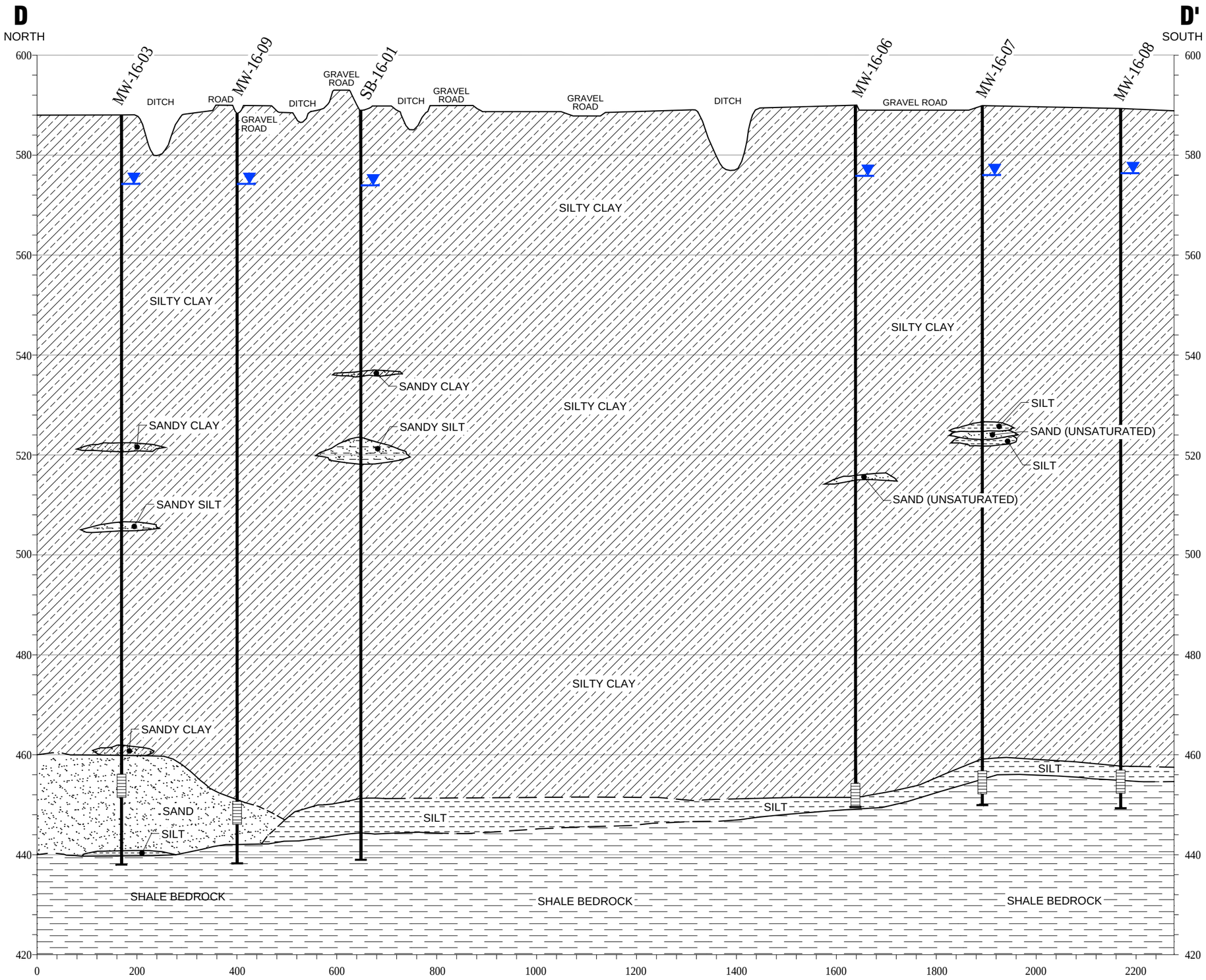
FILE NO.: 370029.0003.01.01.06.dwg

GENERALIZED GEOLOGIC CROSS-SECTION D-D'



LEGEND

- STRATEGRAPHIC BOUNDARY (DASHED WHERE INFERRED)
- GROUNDWATER ELEVATION (COLLECTED 02/27/2017)
- SOIL BORING
- WELL SCREEN INTERVAL
- END OF BORING

Lithology Key

- SILTY CLAY
- SAND
- SILT
- SANDY SILT
- SANDY CLAY
- SHALE BEDROCK

SCALE IN FEET
HORIZONTAL 0 200
VERTICAL 0 20

PROJECT:
DTE ELECTRIC COMPANY
BELLE RIVER POWER PLANT
CHINA TOWNSHIP, MICHIGAN

TITLE:
GENERALIZED GEOLOGIC CROSS-SECTION D-D'

DRAWN BY:	D.STEHLE	PROJ NO.:	370029.0003.01.01
CHECKED BY:	K.CRATSENBURG		
APPROVED BY:	V.BUENING		**FIGURE 8**
DATE:	NOVEMBER 2020		

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FILE NO.: 370029.0003.01.01.04-05.dwg

Appendix A
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.