2021 Annual Groundwater Monitoring Report

Belle River Power Plant Diversion Basin
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) Diversion Basin (DB) 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 DB CCR unit.

DTE Electric remained in detection monitoring at the BRPP DB 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 background levels. Detection monitoring data that has been collected and evaluated in 2021 are presented in this report.

No SSIs were recorded for the 2021 monitoring period and detection monitoring will be continued at the BRPP DB CCR unit in accordance with §257.94.

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) Diversion Basin (DB). 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 DB 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 DB CCR unit. Detection monitoring 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 *Groundwater Statistical Evaluation Plan – Belle River Power Plant Coal Combustion Residual Diversion Basin* (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 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 (PALD) that was submitted to EPA on November 30, 2021 (Geosyntec, 2021). The PALD concludes that there is no reasonable probability that water from the DB 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 DB has been in use by the BRPP since it began

operation and has 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 DB is an incised CCR surface impoundment located east of the BRPP. Water flows into the DB from the North and South bottom ash basins (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 DB CCR unit is located approximately one-mile west of the St. Clair River. The BRPP DB CCR unit is underlain by more than 130 feet of unconsolidated sediments, with the lower confining Bedford Shale generally encountered from 135 to 145 feet below ground surface (bgs). In general, the BRPP DB CCR unit is underlain by 115 to 130 feet of laterally extensive low hydraulic conductivity silty clay-rich deposits (TRC, 2017 and Geosyntec, 2021). The silty clay-rich till was then underlain by two to seven feet of silt between the till and the underlying shale bedrock (not an aquifer) confining unit. Groundwater was encountered within this silt at the shale bedrock interface representing a potential confined uppermost aquifer in the BRPP DB CCR unit.

Due to the relatively small footprint of the DB, the low vertical and horizontal groundwater flow velocity and radial flow potential outward from the CCR unit, and the fact that the uppermost saturated unit being monitored is isolated by a laterally contiguous silty-clay unit which significantly impedes vertical groundwater flow thus preventing the monitored saturated zone (identified as the potential uppermost aquifer) from potentially being affected by CCR, monitoring of the BRPP DB CCR unit using intrawell statistical methods is appropriate. As such, intrawell statistical approaches are being used during detection monitoring as discussed in the Stats Plan.

2.0 Groundwater Monitoring

2.1 Monitoring Well Network

A groundwater monitoring system has been established for the BRPP DB 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 DB CCR unit currently consists of six monitoring wells that are screened in the uppermost aquifer. Monitoring wells MW-16-05 through MW-16-08, MW-16-10, and MW-16-11A are generally located around the east and west perimeter of the DB and provide data on both background and downgradient groundwater quality that has not been affected by the CCR unit (total of six 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) that 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 8th and 9th, 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 six monitoring well locations. Groundwater samples were collected from the six 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 12th and 13th, 2021 by TRC personnel and samples were analyzed by Eurofins in accordance with the QAPP. Static water elevation data were collected at all six monitoring well locations. Groundwater samples were collected from the six 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

The general flow rate and direction from both groundwater monitoring events are similar to that identified in previous monitoring rounds and continues to demonstrate that the downgradient wells are appropriately positioned to detect the presence of Appendix III parameters that could potentially migrate from the BRPP DB CCR unit. Groundwater elevation data collected during the April and October 2021 sampling events show that groundwater within the uppermost aquifer generally flows to the west-northwest across the BRPP DB, consistent with previous events. Groundwater potentiometric surface elevations measured across the BRPP DB during the April and October 2021 sampling events are provided on Table 1 and were used to construct the groundwater potentiometric surface maps shown on Figures 3 and 4, respectively.

The average hydraulic gradient throughout the BRPP DB during both of the 2021 semiannual events is estimated at approximately 0.003 feet/feet, resulting in an estimated average groundwater flow velocity of approximately 0.001 feet/day or 0.4 feet/year using the average hydraulic conductivity of 0.13 ft/day (TRC, 2017 and Geosyntec, 2021) and an assumed effective porosity of 0.4.

As presented in the GWMS Report and PALD, there is a horizontally expansive clay with substantial vertical thickness that isolates the uppermost aquifer from the BRPP DB CCR unit. The general flow direction in the uppermost aquifer is similar to that identified in previous monitoring rounds and continues to demonstrate that the compliance wells are appropriately positioned to detect the presence of Appendix III parameters that could potentially migrate from the BRPP DB CCR unit.

3.0 Statistical Evaluation

3.1 Establishing Background Limits

As discussed in the Stats Plan, intrawell statistical methods for the DB CCR unit were selected based on the geology and hydrogeology at the Site. (primarily the presence of clay/hydraulic barrier, the relatively small footprint of the DB, combined with low vertical and horizontal groundwater flow velocity), 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 six established detection monitoring wells (MW-16-05 through MW-16-08, MW-16-10, and MW-16-11/11A). The initial statistical evaluation of the background data is presented in the 2017 Annual Report. The Appendix III background limits developed for each monitoring well will be used throughout the detection monitoring period to determine whether groundwater has been impacted from the BRPP DB 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 at BRPP DB 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 Diversion 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 2021 Semiannual Event (April 2021)

The concentrations of the indicator parameters in each of the detection monitoring wells (MW-16-05 through MW-16-08, MW-16-10, and MW-16-11A) were compared to their respective statistical background limits calculated from the background data collected from each individual well (i.e., monitoring data from MW-16-05 is compared to the background limit developed using the background dataset from MW-16-05, and so forth).

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

- Calcium at MW-16-10

There were no exceedances compared to background for boron, chloride, fluoride, pH, sulfate, or TDS.

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 17th and 18th, 2021 by TRC personnel. A groundwater sample was collected for calcium at MW-16-10, 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 calcium at MW-16-10 are below the prediction limit, consequently the initial potential SSI for calcium 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 calcium for the April 2021 detection monitoring event.

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

As done for the April 2021 analytical data, the concentrations of the indicator parameters in each of the detection monitoring wells (MW 16-05 through MW-16-08, MW-16-10, and MW-16-11A) were compared to their respective statistical background limits calculated from the background data collected from each individual well.

The comparisons of the October 2021 monitoring event data to background limits are presented in Table 4. The statistical evaluation of the October 2021 Appendix III indicator parameters shows that there were no concentrations above background limits for any Appendix III indicator parameter during the second 2021 semiannual detection monitoring event.

4.0 Conclusions and Recommendations

A potential SSI was noted for calcium at MW-16-10 during the April 2021 monitoring event. This potential SSI was not statistically significant (i.e. verification sampling did not confirm the exceedance). Therefore, no SSIs were recorded for the 2021 monitoring period and detection monitoring will be continued at the BRPP DB CCR unit in accordance with §257.94. 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 DB CCR unit, there is no reasonable probability for the uppermost aquifer to have been affected by CCR from operations.

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 Diversion Basin
China Township, Michigan

CERTIFICATION

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

Geosyntec Consultants (Geosyntec). November 2021. Preliminary Alternative Liner Demonstration Diversion Basin, DTE Electric Company Belle River Power Plant, China Township, Michigan

TRC. July 2016; Revised March and August 2017. CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company Belle River Power Plant Bottom Ash Basins and Diversion Basin, 4505 King Road, China Township, Michigan. Prepared for DTE Electric Company.

TRC. October 2017. Groundwater Monitoring System Summary Report – DTE Electric Company Belle River Power Plant Bottom Ash Basins and Diversion Basin Coal Combustion Residual Units, 4505 King Road, China Township, Michigan. Prepared for DTE Electric Company.

TRC. October 2017. Groundwater Statistical Evaluation Plan – DTE Electric Company Belle River Power Plant Coal Combustion Residual Diversion Basin, 4505 King Road, China Township, Michigan. Prepared for DTE Electric Company.

TRC. January 2018. Annual Groundwater Monitoring Report – DTE Electric Company Belle River Power Plant Diversion Basin, 4505 King Road, China Township, Michigan. Prepared for DTE Electric Company.

TRC. April 12, 2018. Alternate Source Demonstration: 2017 Initial Detection Monitoring Sampling Event Belle River Power Plant Coal Combustion Residual Diversion Basin. Prepared for DTE Electric Company.

USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA facilities, Unified Guidance. Office of Conservation and Recovery. EPA 530/R-09-007.

USEPA. April 2015. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule. 80 Federal Register 74 (April 17, 2015), pp. 21301-21501 (80 FR 21301).

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

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

Tables

Table 1
Summary of Groundwater Elevation Data – April and October 2021
Belle River Power Plant Diversion Basin – RCRA CCR Monitoring Program
China Township, Michigan

Well ID	MW-16-05		MW-16-06		MW-16-07		MW-16-08		MW-16-10		MW-16-11A	
Date Installed	3/4/2016		3/11/2016		3/9/2016		3/10/2016		6/6/2016		5/12/2017	
TOC Elevation	590.82		593.21		592.58		591.88		592.26		591.66	
Geologic Unit of Screened Interval	Clayey Silt/Shale Interface		Silt/Shale Interface		Silt/Shale Interface		Silt/Shale Interface		Gravely Silt and Silty Clay		Silt and Silty Clay	
Screened Interval Elevation	449.3 to 444.3		455.0 to 450.0		456.9 to 451.9		456.3 to 451.3		444.3 to 439.3		452.5 to 447.5	
Unit	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft	ft BTOC	ft
Measurement Date	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation	Depth to Water	GW Elevation
04/08/2021	16.63	574.19	17.50	575.71	16.60	575.98	15.58	576.30	17.65	574.61	16.78	574.88
10/12/2021	16.67	574.15	17.51	575.70	16.54	576.04	15.51	576.37	17.71	574.55	16.81	574.85

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 October 2021
Belle River Power Plant Diversion Basin – 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-16-05	4/9/2021	1.49	-216.3	7.9	5,277	14.1	9.00
	10/13/2021	0.99	-227.8	8.0	3,848	14.3	15.7
MW-16-06	4/9/2021	0.22	-232.9	7.9	3,963	13.7	3.70
	10/13/2021	0.77	-175.7	8.0	4,350	16.0	3.34
MW-16-07	4/9/2021	0.31	-267.0	8.0	4,147	12.4	45.3
	10/13/2021	0.56	-264.8	8.1	4,320	13.4	20.3
MW-16-08	4/9/2021	0.24	-76.3	8.0	4,124	11.0	48.6
	10/13/2021	0.50	-181.0	8.2	4,503	12.8	60.2
MW-16-10	4/9/2021	0.29	33.2	7.8	3,565	10.9	31.2
	5/18/2021 (1)	1.55	-170.0	8.1	3,804	13.9	35.1
	10/13/2021	0.57	-149.9	7.9	3,854	12.6	35.6
MW-16-11A	4/9/2021	0.20	-33.4	8.0	3,799	11.0	7.81
	10/13/2021	0.43	-159.7	8.0	4,148	12.7	8.01

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.

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

Sample Location:		MW-16-05		MW-16-06		MW-16-07		MW-16-08		MW-16-10			MW-16-11A	
Sample Date:		4/9/2021	PL	4/9/2021	PL	4/9/2021	PL	4/9/2021	PL	4/9/2021	5/18/2021	PL	4/9/2021	PL
Constituent	Unit	Data		Data		Data		Data		Data			Data	
Appendix III														
Boron	ug/L	1,800	2,000	2,000	2,200	2,000	2,100	1,900	2,300	2,000	--	2,300	1,800	2,000
Calcium	ug/L	33,000	67,000	36,000	45,000	42,000	110,000	52,000	99,000	**36,000**	27,000	34,000	36,000	80,000
Chloride	mg/L	1,500	1,600	1,600	1,800	1,700	1,800	1,900	2,000	1,400	--	1,800	1,700	1,700
Fluoride	mg/L	1.2	1.3	1.2	1.3	1.2	1.2	1.2	1.3	1.1	--	1.2	1.0	1.0
pH, Field	SU	7.9	7.9 - 8.5	7.9	7.5 - 8.4	8.0	7.7 - 8.4	8.0	7.5 - 8.3	7.8	--	7.5 - 8.8	8.0	7.6 - 8.6
Sulfate	mg/L	14	20	1.3	20	47	98	1.5	23	120	--	160	<1.0	20
Total Dissolved Solids	mg/L	2,300	2,700	2,200	3,000	2,700	3,400	2,800	3,200	2,600	--	3,100	2,100	3,000

Notes:

ug/L - micrograms per liter.

mg/L - milligrams per liter.

SU - standard units; pH is a field parameter.

-- = not analyzed

All metals were analyzed as total unless otherwise specified.

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

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

Sample Location:		MW-16-05		MW-16-06		MW-16-07		MW-16-08		MW-16-10		MW-16-11A	
Sample Date:		10/13/2021	PL[(1)]	10/13/2021	PL[(1)]	10/13/2021	PL[(1)]	10/13/2021	PL[(1)]	10/13/2021	PL[(1)]	10/13/2021	PL[(1)]
Constituent	Unit	Data		Data		Data		Data		Data		Data	
Appendix III													
Boron	ug/L	1,700	1,900	1,900	2,100	1,900	2,100	1,800	2,200	1,900	2,200	1,800	2,000
Calcium	ug/L	34,000	69,000	32,000	43,000	37,000	91,000	54,000	88,000	30,000	35,000	36,000	66,000
Chloride	mg/L	1,500	1,600	1,600	1,700	1,700	1,800	1,800	2,000	1,500	1,700	1,700	1,800
Fluoride	mg/L	1.2	1.3	1.2	1.3	1.2	1.2	1.2	1.3	1.1	1.4	1.0	1.2
pH, Field	SU	8.0	7.9 - 8.5	8.0	7.7 - 8.3	8.1	7.8 - 8.3	8.2	7.6 - 8.3	7.9	7.6 - 8.5	8.0	7.7 - 8.4
Sulfate	mg/L	7.9	35	< 5	12	42	94	< 5	23	72	150	< 5	20
Total Dissolved Solids	mg/L	2,700	2,700	2,400	3,000	3,000	3,200	3,300	3,300	3,100	3,100	2,800	3,100

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) - Prediction limits updated December 15, 2021.

Figures

BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

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

0 2,000 4,000
FEET

TRC

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

TRC - GIS

PROJECT:

DTE ELECTRIC COMPANY
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

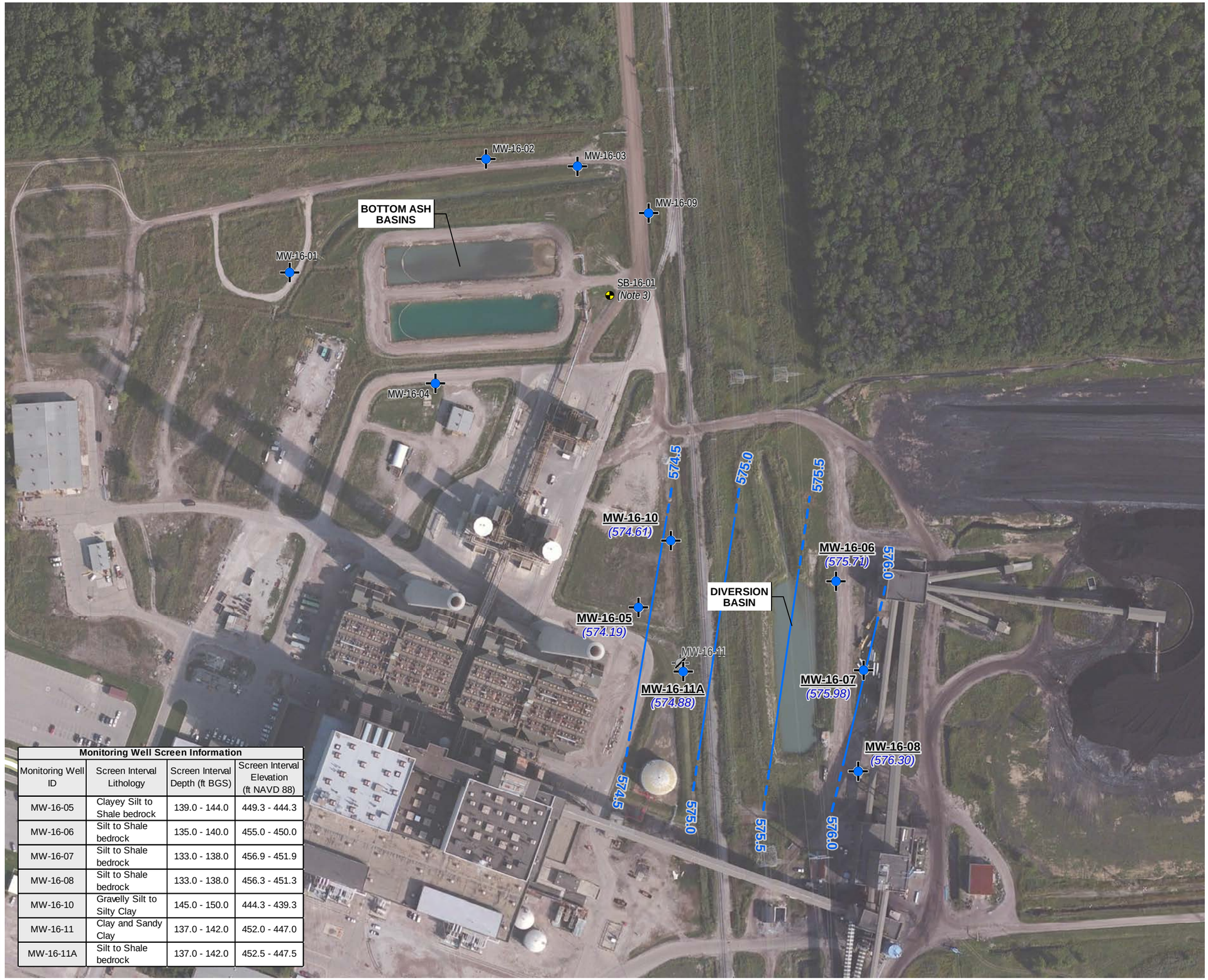
DRAWN BY:	B. TRACY	PROJ NO.:	413591.0003
CHECKED BY:	A. HORRIE		FIGURE 2
APPROVED BY:	V. BUENING		
DATE:	JANUARY 2022		

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

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



LEGEND

- SOIL BORING
- MONITORING WELL
- DECOMMISSIONED MONITORING WELL
- (575.47) GROUNDWATER ELEVATION (FT NAVD 88)
- GROUNDWATER ELEVATION CONTOUR (0.5-FT INTERVAL, DASHED WHERE INFERRED)

NOTES

1. BASE MAP IMAGERY FROM ESRI WORLD IMAGERY, (08/13/2021)
2. WELL LOCATIONS SURVEYED IN MARCH, APRIL, AND JUNE 2016 BY BJM ENGINEERS AND SURVEYORS, INC.
3. NO SAND OR GRAVEL UNIT PRESENT ABOVE BEDROCK IN THIS LOCATION.
4. GROUNDWATER ELEVATIONS DISPLAYED IN FEET RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988.

N

0 200 400 Feet

1 " = 219 '
1:2,627

Monitoring Well Screen Information

Monitoring Well ID	Screen Interval Lithology	Screen Interval Depth (ft BGS)	Screen Interval Elevation (ft NAVD 88)
MW-16-05	Clayey Silt to Shale bedrock	139.0 - 144.0	449.3 - 444.3
MW-16-06	Silt to Shale bedrock	135.0 - 140.0	455.0 - 450.0
MW-16-07	Silt to Shale bedrock	133.0 - 138.0	456.9 - 451.9
MW-16-08	Silt to Shale bedrock	133.0 - 138.0	456.3 - 451.3
MW-16-10	Gravelly Silt to Silty Clay	145.0 - 150.0	444.3 - 439.3
MW-16-11	Clay and Sandy Clay	137.0 - 142.0	452.0 - 447.0
MW-16-11A	Silt to Shale bedrock	137.0 - 142.0	452.5 - 447.5

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

TITLE: DIVERSION BASIN GROUNDWATER POTENTIOMETRIC SURFACE MAP
APRIL 2021

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0003
CHECKED BY:	A. HORRIE		
APPROVED BY:	V. BUENING		FIGURE 3
DATE:	JANUARY 2022		

TRC
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FILE NO.: 413591-0003-007.mxd

Plot Date: 11/24/2021, 15:07:27 PM by AFOJTIK -- LAYOUT: ANSI B (11"x17")
Path: E:\Projects\DTE\CCR_Sites\2017_265996\413591-0003-007.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0
TRC - GIS

LEGEND

- SOIL BORING
- MONITORING WELL
- DECOMMISSIONED MONITORING
- (575.47) GROUNDWATER ELEVATION (FT NAVD 88)
- GROUNDWATER ELEVATION CONTOUR (0.5-FT INTERVAL, DASHED WHERE INFERRED)

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, (3/24/2019).
2. WELL LOCATIONS SURVEYED IN MARCH, APRIL, AND JUNE 2016 BY BMJ ENGINEERS AND SURVEYORS. INC.
3. NO SAND OR GRAVEL UNIT PRESENT ABOVE BEDROCK IN THIS LOCATION.
4. GROUNDWATER ELEVATIONS DISPLAYED IN FEET RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988.

Monitoring Well Screen Information

Monitoring Well ID	Screen Interval Lithology	Screen Interval Depth (ft BGS)	Screen Interval Elevation (ft NAVD 88)
MW-16-05	Clayey Silt to Shale bedrock	139.0 - 144.0	449.3 - 444.3
MW-16-06	Silt to Shale bedrock	135.0 - 140.0	455.0 - 450.0
MW-16-07	Silt to Shale bedrock	133.0 - 138.0	456.9 - 451.9
MW-16-08	Silt to Shale bedrock	133.0 - 138.0	456.3 - 451.3
MW-16-10	Gravelly Silt to Silty Clay	145.0 - 150.0	444.3 - 439.3
MW-16-11	Clay and Sandy Clay	137.0 - 142.0	452.0 - 447.0
MW-16-11A	Silt to Shale bedrock	137.0 - 142.0	452.5 - 447.5

0 200 400 Feet

1 " = 200 '

1:2,400

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

TITLE: DIVERSION BASIN GROUNDWATER POTENTIOMETRIC SURFACE MAP OCTOBER 2021

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

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

FILE NO.: 413591-0003-011_20211124.mxd

TRC - GIS
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0
Plot Date: 1/4/2022, 12:49:08 PM by AFOJTIK -- LAYOUT: ANSI B (11"x17")
Path: E:\Projects\DTE\CCR_Sites\2017_265996\413591-0003-011_20211124.mxd

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

Kris Brooks

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

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

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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
Date Collected: 04/08/21 13:58
Date Received: 04/14/21 08:00

Lab Sample ID: 240-147486-1
Matrix: Water

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: 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

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

Lab Sample ID: 240-147486-4

Matrix: Water

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

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

Lab Sample ID: 240-147486-6

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 22:30	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 Sample Results

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

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/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

Lab Sample ID: 240-147486-5

Date Collected: 04/09/21 13:47

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 22:25	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

Lab Sample ID: 240-147486-6

Date Collected: 04/09/21 13:19

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 22:30	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

Lab Sample ID: 240-147486-7

Date Collected: 04/09/21 12:23

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 22:34	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

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

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

Lab Sample ID: 240-147486-9

Date Collected: 04/09/21 14:59

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 22:43	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

Lab Sample ID: 240-147486-10

Date Collected: 04/09/21 09:06

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 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

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 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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Chain of Custody Record

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

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	1349		Water			X	X		
MW-16-06	4-9-21	1218		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:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by: D Stelle	4/9/21 1700	TRC	TRC ST — 17a	4/9/21 1700	TRC
Relinquished by:	4/12/21 1:46	Company	Received by:	4/12/21 1340	Company ETA
Relinquished by:	4/12/21 1600	Company ETA	Received by: COLD STORAGE	4/12/21 16:18	Company ETA

Custody Seals Intact: \ Yes \ No — Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Amanda Battishill 4/13/21 1402 ETA — Comm Lab 4-14-21 800 ETA

Ver: 11/01/2020

MICHIGAN
190

Chain of Custody Record

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

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

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		
DUP-01	4-8-21	—	G	Water	N	N	X	X	2	
EB-01	4-8-21			Water	N	N	X	X	2	
				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
	4/9/21 1700	TRC	TRC	4/9/21 1700	TRC
	4/12/21 1340	TRC	[illegible]	4/12/21 1340	GT
	4/12/21 1600	ETA	COLD STORAGE	4/12/21 1618	ETA
Andrew Batchelder	4/13/21 1402	ETA	[illegible]	4-14-21 800	ETA

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

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

Kris Brooks

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

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

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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 Sample Results

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	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:				D	N					
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 Eurofins	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

6/7/2021

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)	Preservative 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			

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 240-158080-1
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

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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
Date Collected: 10/12/21 11:10
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-1
Matrix: Water

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

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

Lab Sample ID: 240-158080-3

Matrix: Water

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

Lab Sample ID: 240-158080-6

Date Collected: 10/13/21 12:00

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 16:06	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

Date Collected: 10/13/21 12:28
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-7

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 16:19	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
Date Collected: 10/12/21 11:10
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-1
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 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
Date Collected: 10/12/21 12:17
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-2
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 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
Date Collected: 10/12/21 14:15
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-3
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 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
Date Collected: 10/13/21 09:05
Date Received: 10/15/21 08:00

Lab Sample ID: 240-158080-4
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 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

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/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

Lab Sample ID: 240-158080-12

Date Collected: 10/12/21 00:00

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 16:41	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

Lab Sample ID: 240-158080-13

Date Collected: 10/12/21 14:00

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 16:45	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:	Analysis Requested		Job #:

Address: 1540 Eisenhower Place	Due Date Requested:	Preservation Codes:
City: Ann Arbor	TAT Requested (days):	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)
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:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	10-14-21 / 1417	TRC		10/14/21 1420	ETA
Relinquished by:	10/14/21 1420	ETA		10-15-21 8:00	ETA
Relinquished by:					

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, Fluride, 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: 10-14-21 / 1417	Company TRC	Received by:	Date/Time: 10/14/21 1420	Company ETA		
Relinquished by:	Date/Time: 10/14/21 1420	Company ETA	Received by:	Date/Time: 10-15-21 8:00	Company CM		
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 # : 158080**
Canton Facility

Client TRC Site Name _____ Cooler unpacked by: Mandy Bloe

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: _____

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.

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 Diversion Basin

Statistical background limits for the DTE Electric Company (DTE Electric) Belle River Power Plant (BRPP) Diversion Basin (DB) 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 DB 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 DB in accordance with the HMP.

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

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

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 DB. 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 (approximately 120 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 DB 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 DB includes MW-16-05 through MW-16-08, MW-16-10, and MW-16-11A. 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 nondetects 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 MW-16-10 for many of the Appendix III parameters for data collected on 4/18/2017 and 6/6/2017. The T v. C graphs also showed potential or suspect outliers for the data collected for MW-16-10 on 2/28/2017 for calcium, chloride, and sulfate.

In addition, multiple sampling events were performed within a two to three-week timeframe during the background data collection in order to verify results and/or collect an adequate number of data points within the constraints of the limited CCR Rule implementation timeline. In order to maximize temporal independence within the background data set, several data points were removed from the MW-16-10 and MW-16-11A data sets as discussed in this section and noted on Table 1. The T v. C graphs showed that additional sampling events conducted in August 2017 for MW-16-10 and June 2017 for MW-16-11A are not temporally independent from the previous and subsequent sampling events. At monitoring well MW-16-10, the sample collected on 8/9/2017 was collected only 14 days after the sampling event conducted on 7/26/2017 and the sample collected on 8/30/2017 was collected only 13 days before the sampling event conducted on 9/12/17. Data for the additional sampling events conducted in August 2017 for MW-16-10 were similar to the July and September results. At monitoring well MW-16-11A, the sample collected on 6/6/2017 was collected only 19 days after the sampling event conducted on 5/18/2017 and the sample collected on 6/30/2017 was collected only 25 days before the sampling event conducted on 7/25/2017. Data for the additional sampling events conducted in June 2017 for MW-16-11A were similar to the May and July results. Thus, the June 2017 and August 2017 data was removed to avoid potential biasing of the data set for that time-frame.

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. After removing the August 2017 data from the MW-16-10 data set, probability plots of data residuals (Attachment A) were used to further evaluate the potential outliers in the Appendix III data for MW-16-10 that were identified in the T v. C graphs. In general, probability plots of the data residuals for MW-16-10 show that data collected on 4/18/2017 and 6/6/2017 were from a different distribution than the remaining data. This pattern was observed for most of the Appendix III parameters for MW-16-10. Prior to outlier removal, many of the parameters exhibited a non-normal distribution. Subsequent to outlier removal, the data sets for the majority of the parameters exhibited a normal distribution. As such, data collected from monitoring well MW-16-10 on 4/18/2017 and 6/6/2017 were removed from the background data set. In addition, the calcium, chloride, and sulfate data collected on 2/28/2017 were further evaluated as potential outliers.

After the removal of the data collected on 4/18/2017 and 6/6/2017 from the background data set for MW-16-10, the probability plots showed that the distributions for calcium, chloride, and sulfate remained non-normal. The MW-16-10 calcium result for 2/28/2017 was approximately twice the concentrations observed for the other sampling events. After the removal of the calcium and chloride data collected on 2/28/2017, the distribution of the background data set was normal. The MW-16-10 sulfate result for 2/28/2017 was an order of magnitude greater than the majority of the remaining data. Because the distribution of the sulfate data was non-normal, the maximum baseline concentration would be used as the prediction limit; therefore, the suspected outlier was removed to avoid calculating a biased high prediction limit. After the removal of the sulfate result for 2/28/2017, an evaluation of the probability plots showed that the sulfate data set was normal.

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 nonnormal 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

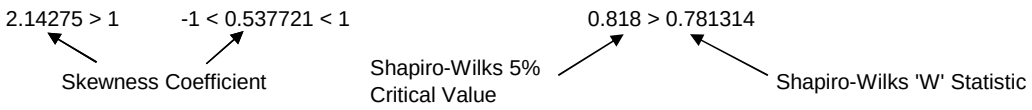
Table 1
Summary of Outlier Evaluation
Background Statistical Evaluation
DTE Electric Company – Belle River Power Plant Diversion Basin

Parameter	Units	Monitoring Well	Sample Date	Data Outlier	Basis for Removal of Outlier
Boron	ug/L	MW-16-10	04/18/17	1,500	Anomalous concentrations observed for many parameters.
		MW-16-10	06/06/17	1,300	Anomalous concentrations observed for many parameters.
		MW-16-10	08/09/17	2,100	Removed to maintain temporal independence.
		MW-16-10	08/30/17	2,200	Removed to maintain temporal independence.
		MW-16-11A	06/06/17	1,800	Removed to maintain temporal independence.
		MW-16-11A	06/30/17	1,800	Removed to maintain temporal independence.
Calcium	ug/L	MW-16-10	02/28/17	68,000	Anomalously high concentration.
		MW-16-10	04/18/17	120,000	Anomalous concentrations observed for many parameters.
		MW-16-10	06/06/17	170,000	Anomalous concentrations observed for many parameters.
		MW-16-10	08/09/17	32,000	Removed to maintain temporal independence.
		MW-16-10	08/30/17	29,000	Removed to maintain temporal independence.
		MW-16-11A	06/06/17	35,000	Removed to maintain temporal independence.
		MW-16-11A	06/30/17	37,000	Removed to maintain temporal independence.
Chloride	mg/L	MW-16-10	02/28/17	1,200	Anomalously low concentration.
		MW-16-10	04/18/17	890	Anomalous concentrations observed for many parameters.
		MW-16-10	06/06/17	860	Anomalous concentrations observed for many parameters.
		MW-16-10	08/09/17	1,500	Removed to maintain temporal independence.
		MW-16-10	08/30/17	1,500	Removed to maintain temporal independence.
		MW-16-11A	06/06/17	1,500	Removed to maintain temporal independence.
		MW-16-11A	06/30/17	1,500	Removed to maintain temporal independence.
Fluoride	mg/L	MW-16-10	04/18/17	< 1.0	Anomalous concentrations observed for many parameters.
		MW-16-10	06/06/17	< 1.0	Anomalous concentrations observed for many parameters.
		MW-16-10	08/09/17	< 1.0	Removed to maintain temporal independence.
		MW-16-10	08/30/17	1.1	Removed to maintain temporal independence.
		MW-16-11A	06/06/17	< 1.0	Removed to maintain temporal independence.
		MW-16-11A	06/30/17	< 1.0	Removed to maintain temporal independence.
pH, Field	SU	MW-16-10	04/18/17	7.6	Anomalous concentrations observed for many parameters.
		MW-16-10	06/06/17	7.6	Anomalous concentrations observed for many parameters.
		MW-16-10	08/09/17	8.2	Removed to maintain temporal independence.
		MW-16-10	08/30/17	8.1	Removed to maintain temporal independence.
		MW-16-11A	06/06/17	8.1	Removed to maintain temporal independence.
		MW-16-11A	06/30/17	8.0	Removed to maintain temporal independence.
Sulfate	mg/L	MW-16-10	02/28/17	620	Anomalously high concentration.
		MW-16-10	04/18/17	980	Anomalous concentrations observed for many parameters.
		MW-16-10	06/06/17	1,300	Anomalous concentrations observed for many parameters.
		MW-16-10	08/09/17	69	Removed to maintain temporal independence.
		MW-16-10	08/30/17	59	Removed to maintain temporal independence.
		MW-16-11A	06/06/17	< 20	Removed to maintain temporal independence.
		MW-16-11A	06/30/17	< 20	Removed to maintain temporal independence.
Total Dissolved Solids	mg/L	MW-16-10	04/18/17	3,400	Anomalous concentrations observed for many parameters.
		MW-16-10	06/06/17	3,400	Anomalous concentrations observed for many parameters.
		MW-16-10	08/09/17	2,800	Removed to maintain temporal independence.
		MW-16-10	08/30/17	2,700	Removed to maintain temporal independence.
		MW-16-11A	06/06/17	2,600	Removed to maintain temporal independence.
		MW-16-11A	06/30/17	2,400	Removed to maintain temporal independence.

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

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-16-05	-1 < -0.390323 < 1	--	--	--	N	Parametric	1,900
MW-16-06	-1 < -0.0290474 < 1	--	--	--	N	Parametric	2,100
MW-16-07	-1.66872 < -1	-1.81277 < -1	0.892 > 0.726206	0.892 > 0.710824	N	Non-Parametric	2,100
MW-16-08	-1 < -0.0607323 < 1	--	--	--	N	Parametric	2,200
MW-16-10	-1 < -0.149769 < 1	--	--	--	Y	Parametric	2,200
MW-16-11/A	-1 < -0.11097 < 1	--	--	--	Y	Parametric	2,000
Calcium (ug/L)							
MW-16-05	1 < 1.60141	1 < 1.22826	0.892 > 0.789501	0.892 > 0.843484	N	Non-Parametric	69,000
MW-16-06	-1 < 0.951089 < 1	--	--	--	N	Parametric	43,000
MW-16-07	1 < 1.71316	1 < 1.08376	0.892 > 0.815739	0.892 < 0.904946	N	Parametric	91,000
MW-16-08	1 < 1.19054	-1 < 0.866557 < 1	--	--	N	Parametric	88,000
MW-16-10	-1 < -0.551064 < 1	--	--	--	Y	Parametric	35,000
MW-16-11/A	1 < 1.73492	-1 < 0.785759 < 1	--	--	Y	Parametric	66,000
Chloride (mg/L)							
MW-16-05	-1 < -0.390323 < 1	--	--	--	N	Parametric	1,600
MW-16-06	-1 < -0.264733 < 1	--	--	--	N	Parametric	1,700
MW-16-07	-1 < -0.0514898 < 1	--	--	--	N	Parametric	1,800
MW-16-08	-1 <0.743899 < 1	--	--	--	N	Parametric	2,000
MW-16-10	1 < 0.29548 < 1	--	--	--	Y	Parametric	1,700
MW-16-11/A	-1 < -0.525845 < 1	--	--	--	Y	Parametric	1,800
Fluoride (mg/L)							
MW-16-05	-2.45388 < -1	-3.01482 < -1	0.892 > 0.682578	0.892 > 0.570157	N	Non-Parametric	1.3
MW-16-06	-2.23316 < -1	-2.86243 < -1	0.892 > 0.730138	0.892 > 0.611593	N	Non-Parametric	1.3
MW-16-07	-1.81079 < -1	-2.0669 < -1	0.892 > 0.691341	0.892 > 0.611493	N	Non-Parametric	1.2
MW-16-08	-1 < 0.104706 < 1	--	--	--	N	Parametric	1.3
MW-16-10	-1 < 0.245965 < 1	--	--	--	Y	Parametric	1.4
MW-16-11/A	-1 < 0.25875 < 1	--	--	--	Y	Parametric	1.2

Notes:

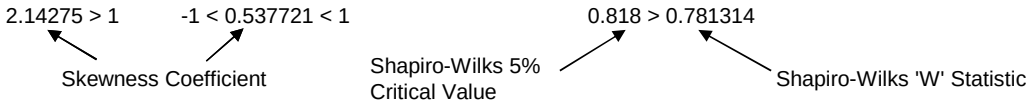


ug/L = micrograms per liter
mg/L = milligrams per liter
SU = standard units

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

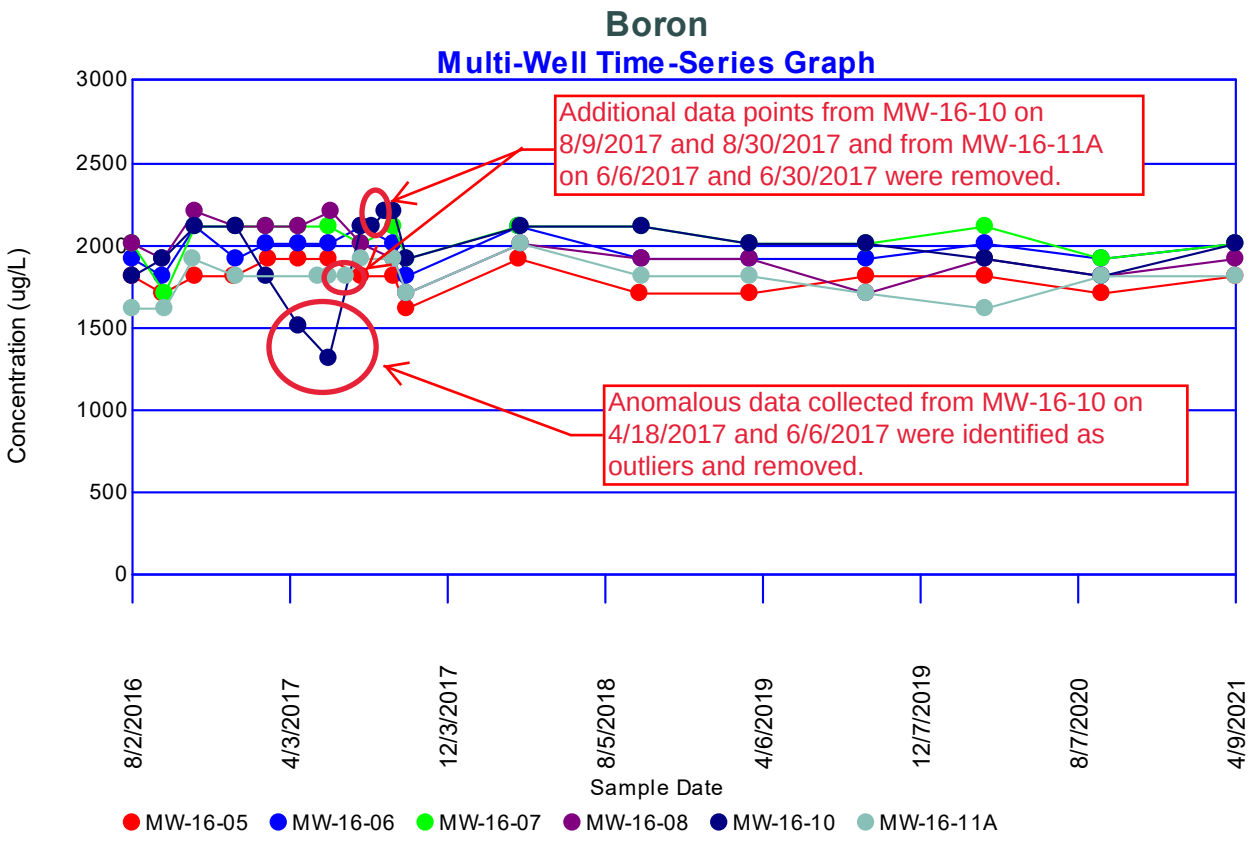
Monitoring Well	Skewness Test		Shapiro-Wilks Test (5% Critical Value)		Outliers Removed	Prediction Limit Test	Prediction Limit
	Un-Transformed Data	Natural Log Transformed Data	Un-Transformed Data	Natural Log Transformed Data			
pH, Field (SU)							
MW-16-05	1 < 2.04226	1 < 1.99341	0.892 > 0.748319	0.892 > 0.756196	N	Non-Parametric	7.9 - 8.5
MW-16-06	-1 < -0.711064 < 1	--	--	--	N	Parametric	7.7 - 8.3
MW-16-07	-1 < 0.490191 < 1	--	--	--	N	Parametric	7.8 - 8.3
MW-16-08	-1 < -0.562323 < 1	--	--	--	N	Parametric	7.6 - 8.3
MW-16-10	1 < 1.25391	1 < 1.18743	0.881 < 0.890267	--	Y	Parametric	7.6 - 8.5
MW-16-11/A	-1 < -0.0762042 < 1	--	--	--	Y	Parametric	7.7 - 8.4
Sulfate (mg/L)							
MW-16-05	1 < 3.50297	-1 < 0.732787 < 1	--	--	N	Parametric	35
MW-16-06	1 < 29.8082	1 < 5.00744	0.892 > 0.760979	0.892 < 0.91526	N	Parametric	12
MW-16-07	-1 < -0.441506 < 1	--	--	--	N	Parametric	94
MW-16-08	> 50% Non-Detect	--	--	--	N	Non-Parametric	23
MW-16-10	-1 < 0.525678 < 1	--	--	--	Y	Parametric	150
MW-16-11/A	> 50% Non-Detect	--	--	--	Y	Non-Parametric	20
Total Dissolved Solids (mg/L)							
MW-16-05	-1 < -0.303785 < 1	--	--	--	N	Parametric	2,700
MW-16-06	-1 < -0.094009 < 1	--	--	--	N	Parametric	3,000
MW-16-07	1 < 1.14593	-1 < 0.849899 < 1	--	--	N	Parametric	3,200
MW-16-08	-1 < -0.62687 < 1	--	--	--	N	Parametric	3,300
MW-16-10	-1.38383 < -1	-1.86567 < -1	0.881 > 0.835551	0.881 > 0.778892	Y	Non-Parametric	3,100
MW-16-11/A	-1 < -0.285334 < 1	--	--	--	Y	Parametric	3,100

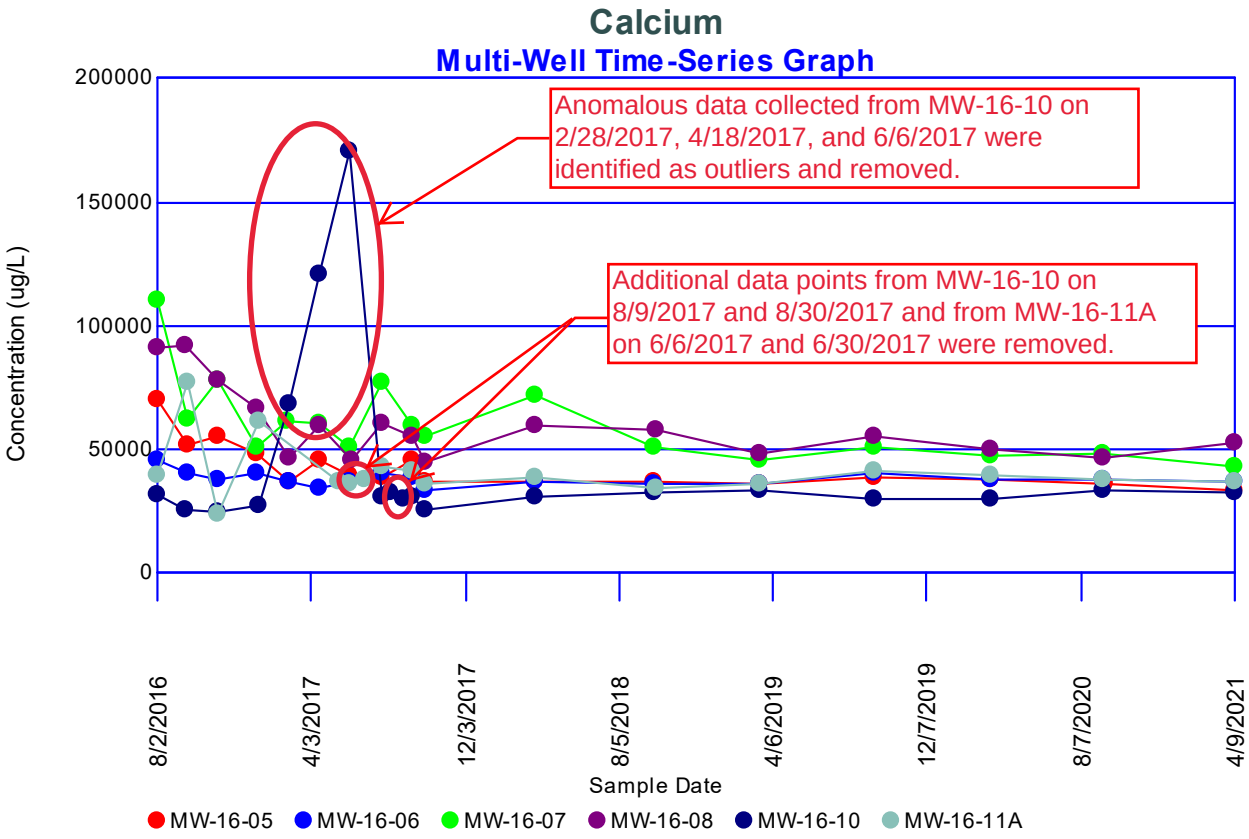
Notes:

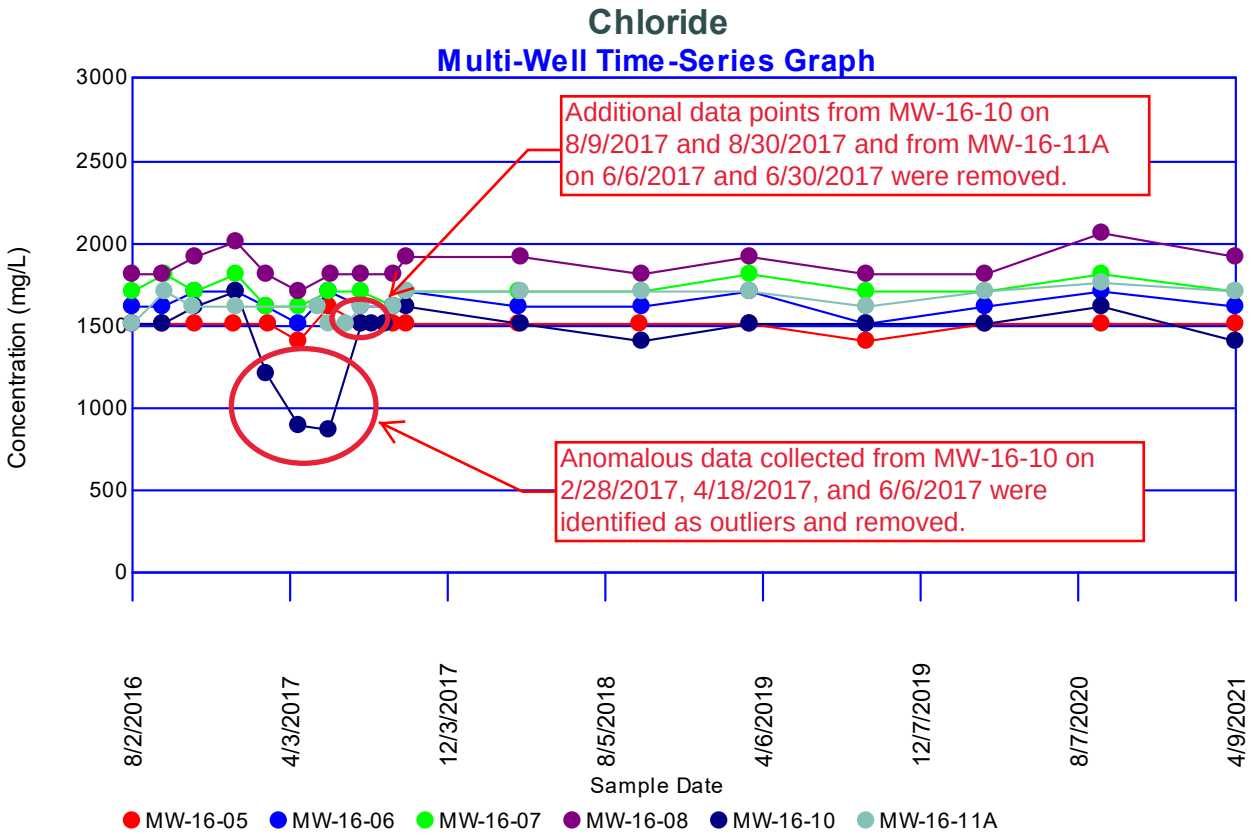


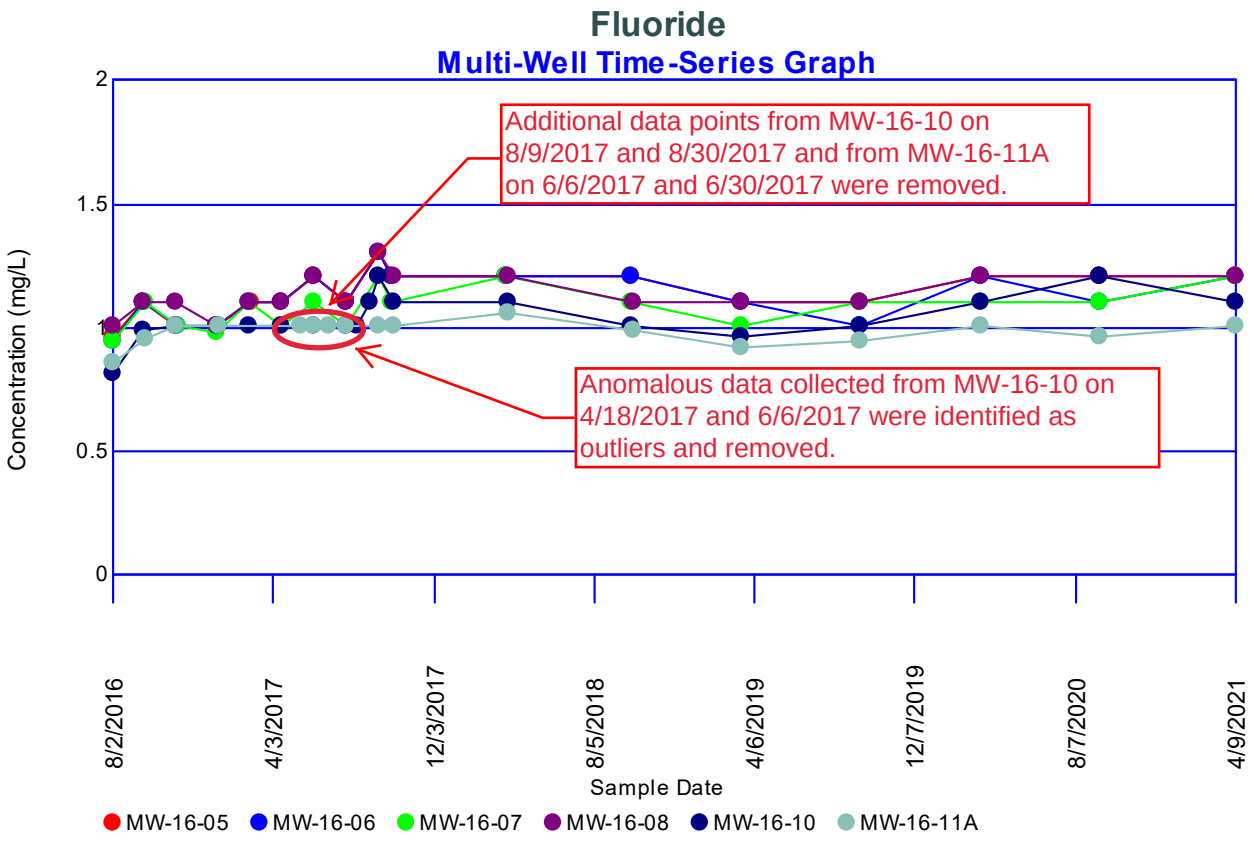
ug/L = micrograms per liter
mg/L = milligrams per liter
SU = standard units

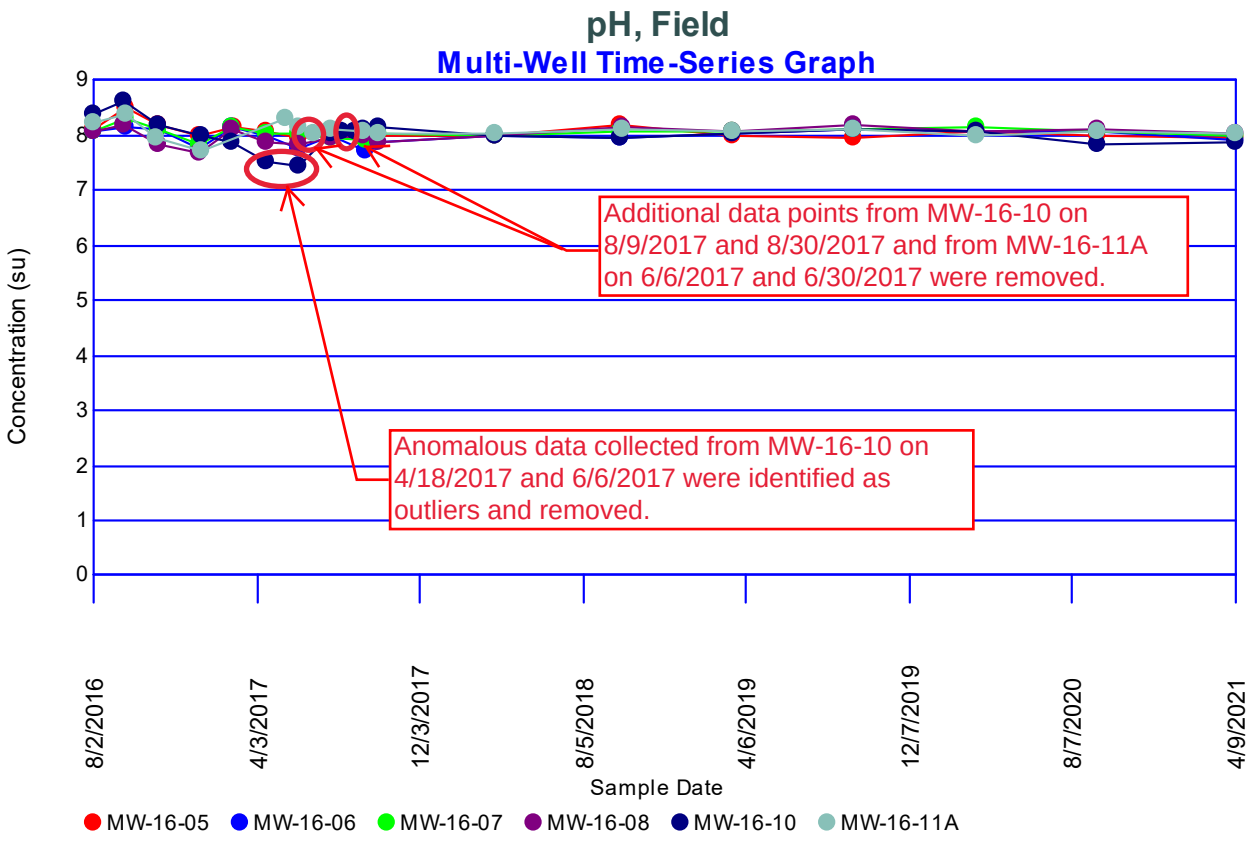
Attachment A
ChemStat™ Prediction Limit Outputs

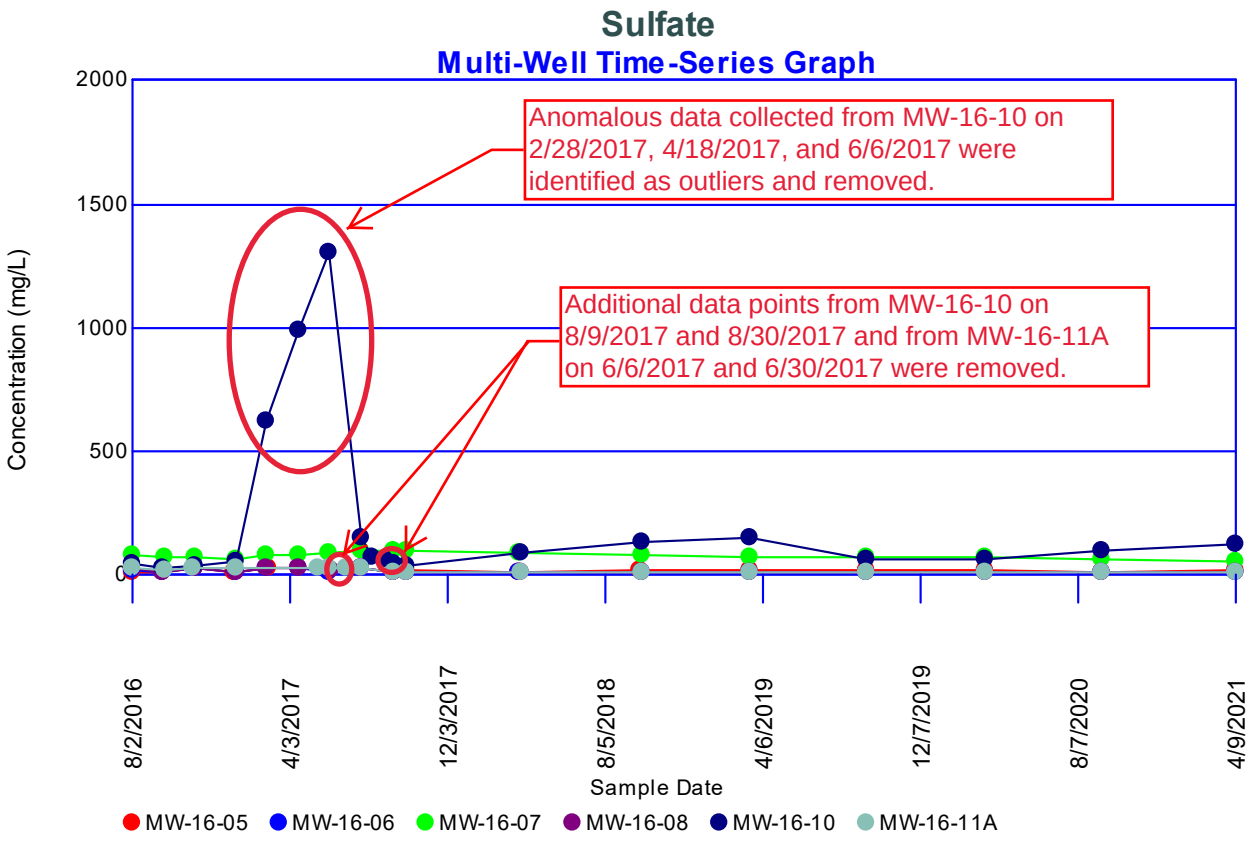

Boron
Multi-Well Time-Series Graph
Additional data points from MW-16-10 on 8/9/2017 and 8/30/2017 and from MW-16-11A on 6/6/2017 and 6/30/2017 were removed.
Anomalous data collected from MW-16-10 on 4/18/2017 and 6/6/2017 were identified as outliers and removed.
Concentration (ug/L)
3000
2500
2000
1500
1000
500
0
8/2/2016
4/3/2017
12/3/2017
8/5/2018
4/6/2019
12/7/2019
8/7/2020
4/9/2021
Sample Date
MW-16-05
MW-16-06
MW-16-07
MW-16-08
MW-16-10
MW-16-11A

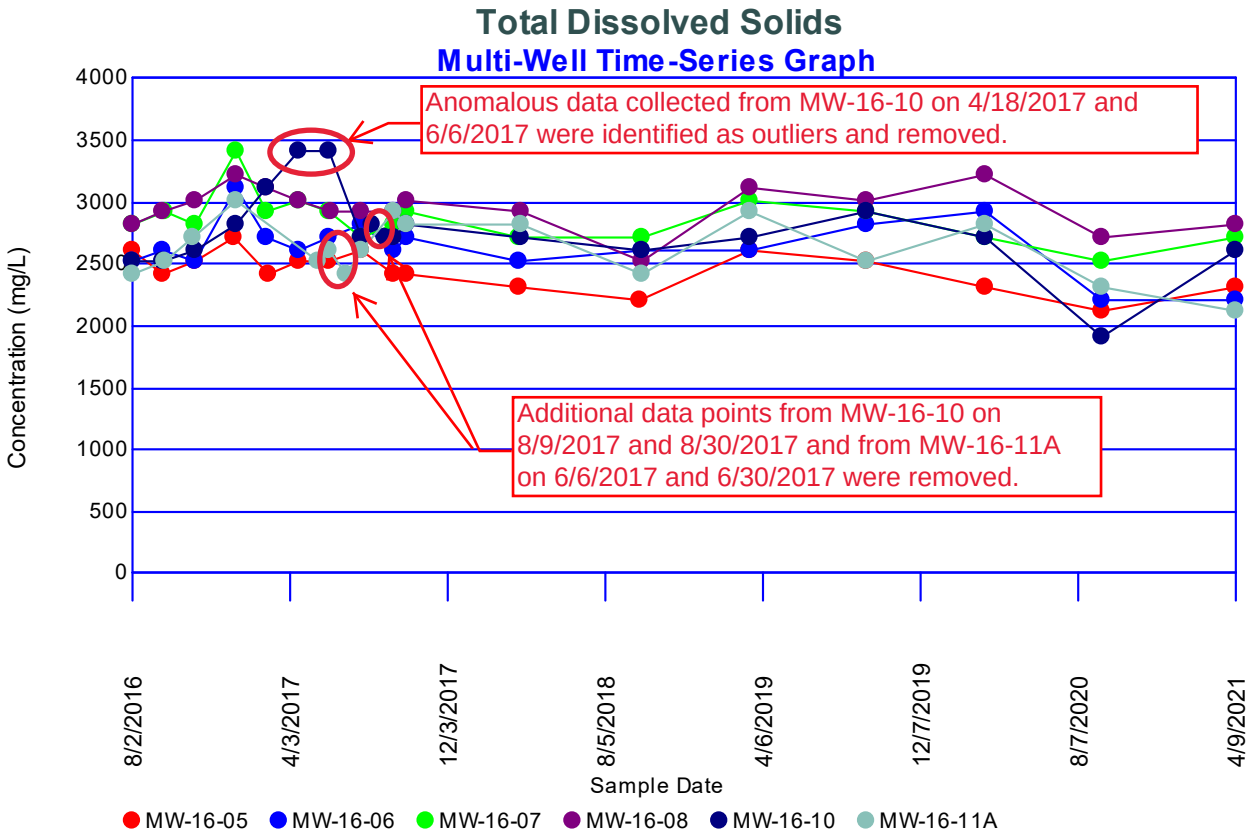

Calcium
Multi-Well Time-Series Graph
Anomalous data collected from MW-16-10 on 2/28/2017, 4/18/2017, and 6/6/2017 were identified as outliers and removed.
Additional data points from MW-16-10 on 8/9/2017 and 8/30/2017 and from MW-16-11A on 6/6/2017 and 6/30/2017 were removed.
Concentration (ug/L)
200000
150000
100000
50000
0
8/2/2016
4/3/2017
12/3/2017
8/5/2018
4/6/2019
12/7/2019
8/7/2020
4/9/2021
Sample Date
MW-16-05
MW-16-06
MW-16-07
MW-16-08
MW-16-10
MW-16-11A

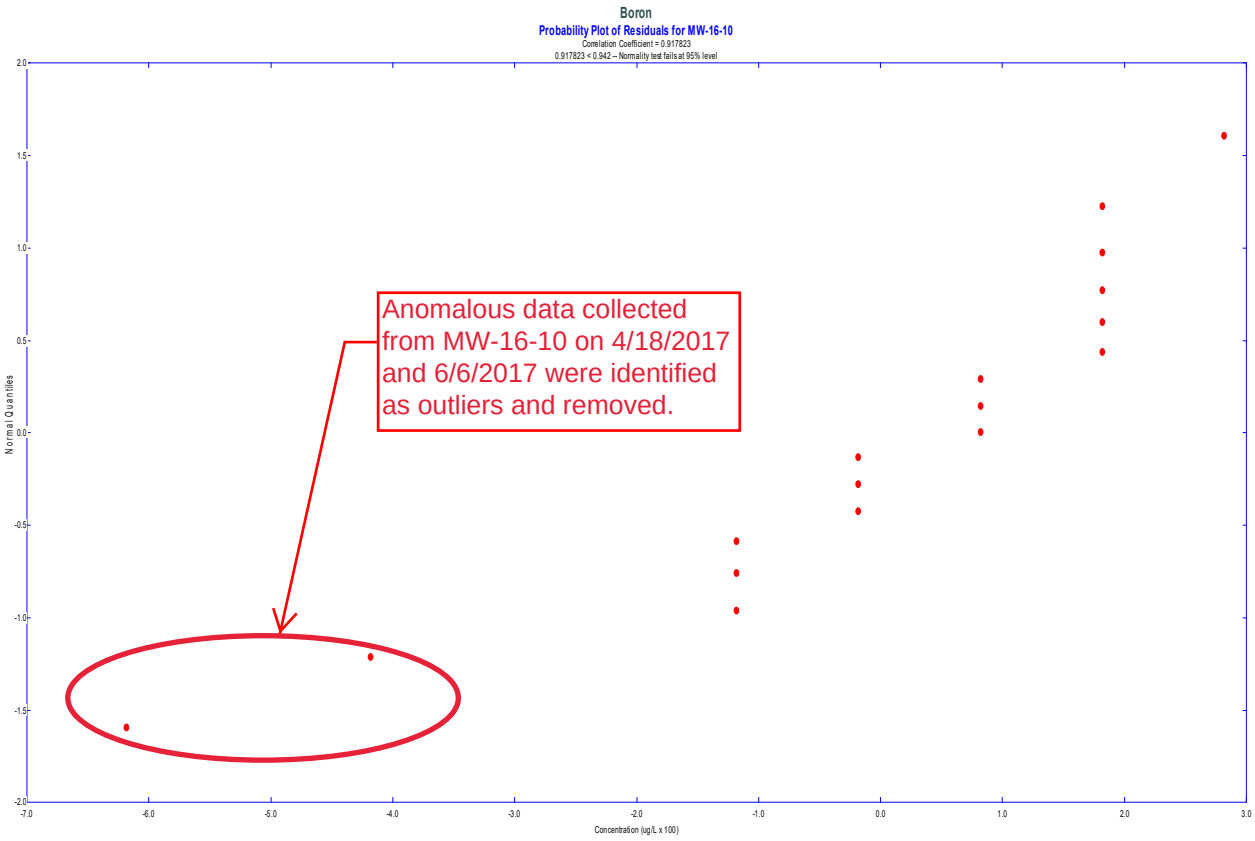

Chloride
Multi-Well Time-Series Graph
Additional data points from MW-16-10 on 8/9/2017 and 8/30/2017 and from MW-16-11A on 6/6/2017 and 6/30/2017 were removed.
Anomalous data collected from MW-16-10 on 2/28/2017, 4/18/2017, and 6/6/2017 were identified as outliers and removed.
Concentration (mg/L)
3000
2500
2000
1500
1000
500
0
8/2/2016
4/3/2017
12/3/2017
8/5/2018
4/6/2019
12/7/2019
8/7/2020
4/9/2021
Sample Date
MW-16-05
MW-16-06
MW-16-07
MW-16-08
MW-16-10
MW-16-11A


Fluoride
Multi-Well Time-Series Graph
Additional data points from MW-16-10 on 8/9/2017 and 8/30/2017 and from MW-16-11A on 6/6/2017 and 6/30/2017 were removed.
Anomalous data collected from MW-16-10 on 4/18/2017 and 6/6/2017 were identified as outliers and removed.
Concentration (mg/L)
2
1.5
1
0.5
0
8/2/2016
4/3/2017
12/3/2017
8/5/2018
4/6/2019
12/7/2019
8/7/2020
4/9/2021
Sample Date
MW-16-05
MW-16-06
MW-16-07
MW-16-08
MW-16-10
MW-16-11A

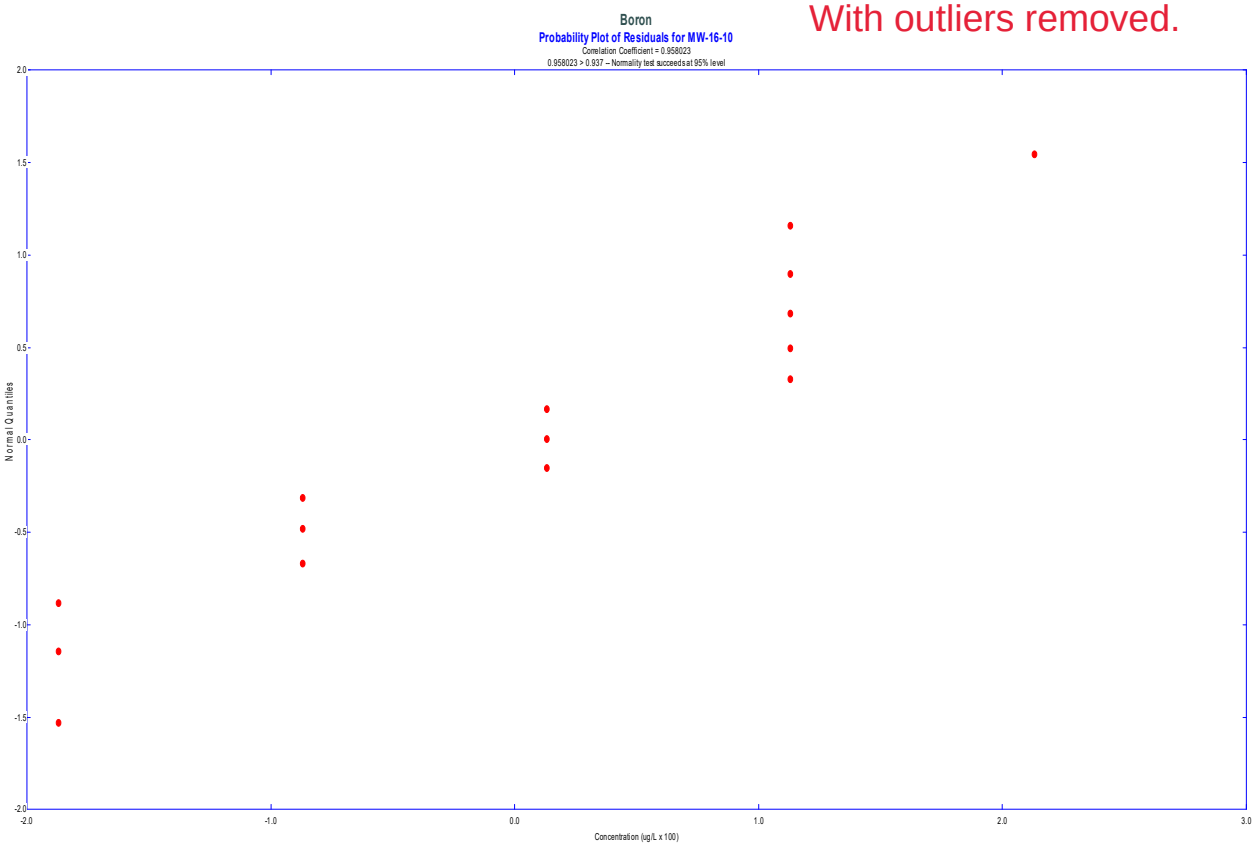

pH, Field
Multi-Well Time-Series Graph
Concentration (su)
9
8
7
6
5
4
3
2
1
0
Additional data points from MW-16-10 on 8/9/2017 and 8/30/2017 and from MW-16-11A on 6/6/2017 and 6/30/2017 were removed.
Anomalous data collected from MW-16-10 on 4/18/2017 and 6/6/2017 were identified as outliers and removed.
8/2/2016
4/3/2017
12/3/2017
8/5/2018
4/6/2019
12/7/2019
8/7/2020
4/9/2021
Sample Date
MW-16-05
MW-16-06
MW-16-07
MW-16-08
MW-16-10
MW-16-11A

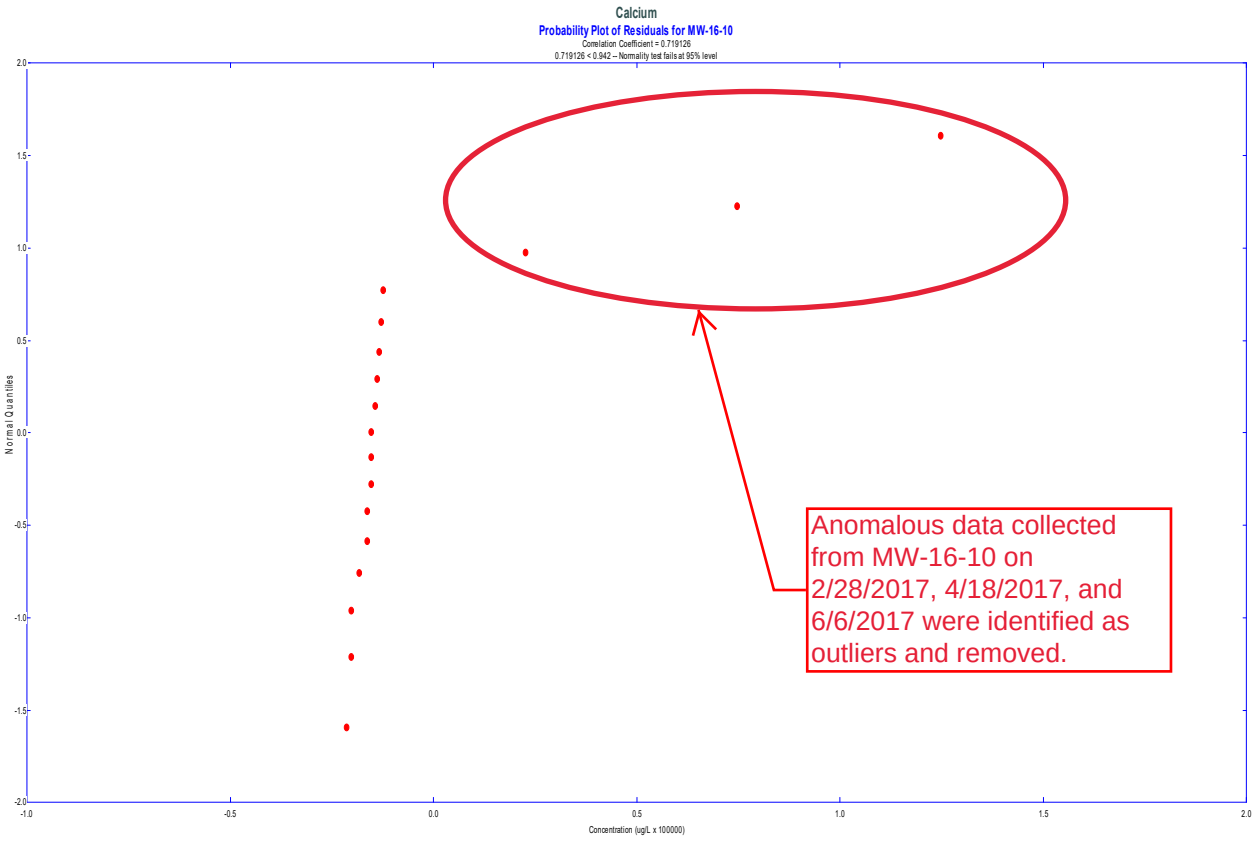

Sulfate
Multi-Well Time-Series Graph
Anomalous data collected from MW-16-10 on 2/28/2017, 4/18/2017, and 6/6/2017 were identified as outliers and removed.
Additional data points from MW-16-10 on 8/9/2017 and 8/30/2017 and from MW-16-11A on 6/6/2017 and 6/30/2017 were removed.
Concentration (mg/L)
2000
1500
1000
500
0
8/2/2016
4/3/2017
12/3/2017
8/5/2018
4/6/2019
12/7/2019
8/7/2020
4/9/2021
Sample Date
MW-16-05
MW-16-06
MW-16-07
MW-16-08
MW-16-10
MW-16-11A


Total Dissolved Solids
Multi-Well Time-Series Graph
Anomalous data collected from MW-16-10 on 4/18/2017 and 6/6/2017 were identified as outliers and removed.
Additional data points from MW-16-10 on 8/9/2017 and 8/30/2017 and from MW-16-11A on 6/6/2017 and 6/30/2017 were removed.
Concentration (mg/L)
4000
3500
3000
2500
2000
1500
1000
500
0
8/2/2016
4/3/2017
12/3/2017
8/5/2018
4/6/2019
12/7/2019
8/7/2020
4/9/2021
Sample Date
MW-16-05
MW-16-06
MW-16-07
MW-16-08
MW-16-10
MW-16-11A

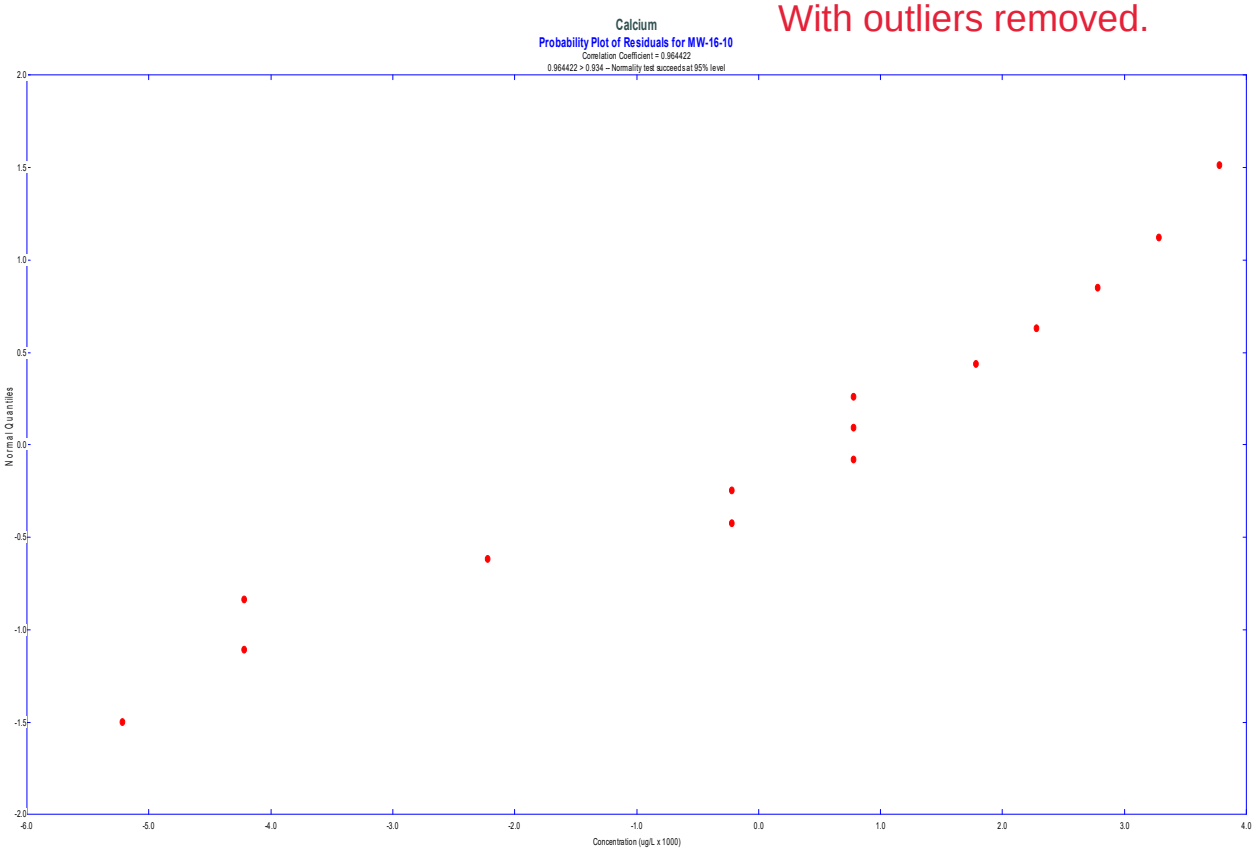

Boron
Probability Plot of Residuals for MW-16-10
Correlation Coefficient = 0.917823
0.917823 < 0.942 -- Normality test fails at 95% level
Anomalous data collected from MW-16-10 on 4/18/2017 and 6/6/2017 were identified as outliers and removed.
Normal Quantiles
Concentration (ug/L x 100)

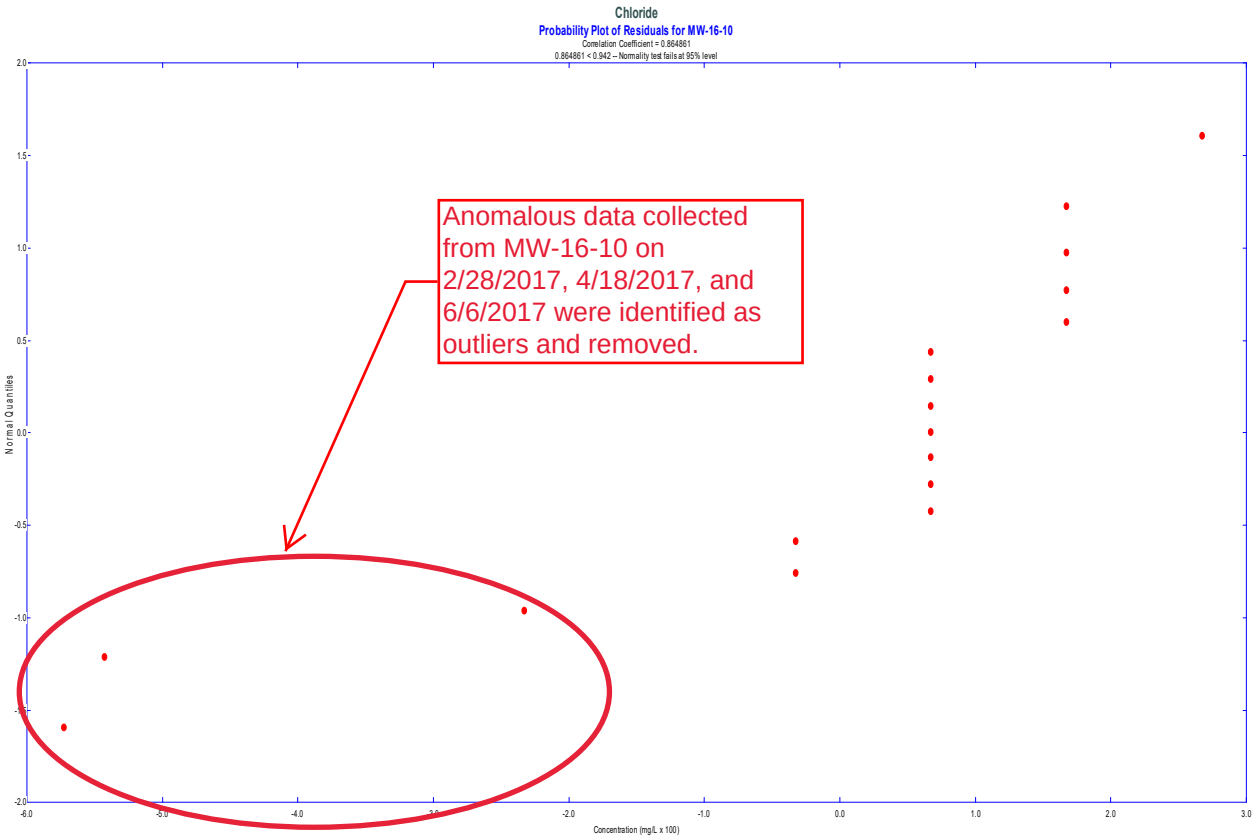
With outliers removed.



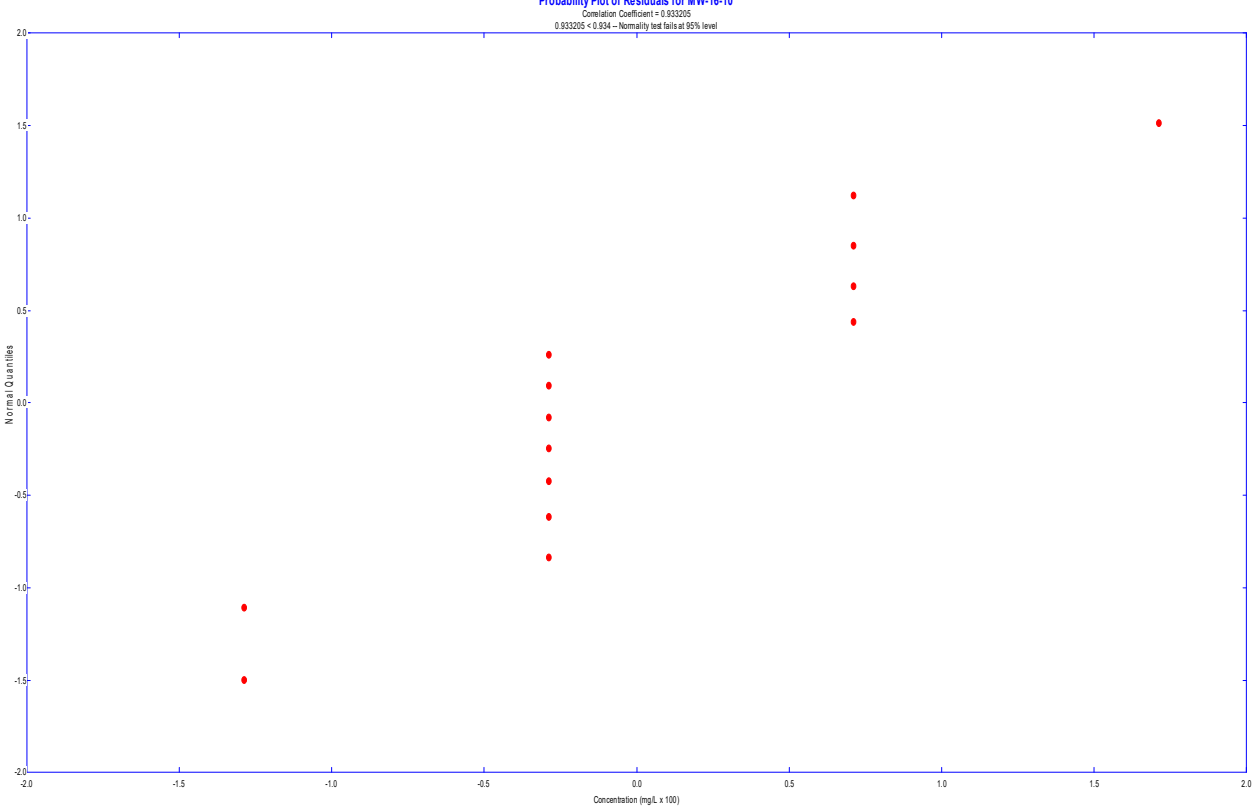

Calcium
Probability Plot of Residuals for MW-16-10
Correlation Coefficient = 0.719126
0.719126 < 0.942 -- Normality test fails at 95% level
Normal Quantiles
Concentration (ug/L x 100000)
Anomalous data collected from MW-16-10 on 2/28/2017, 4/18/2017, and 6/6/2017 were identified as outliers and removed.

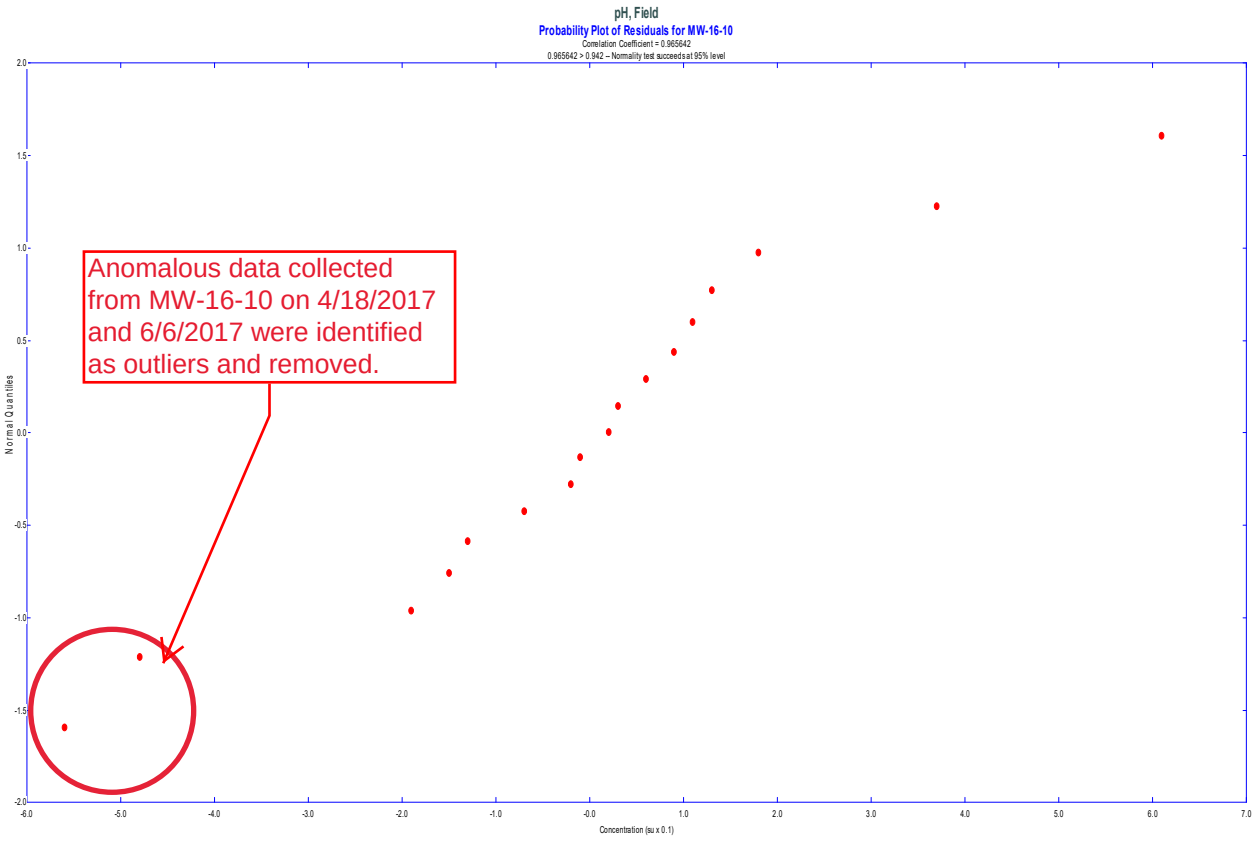
With outliers removed.



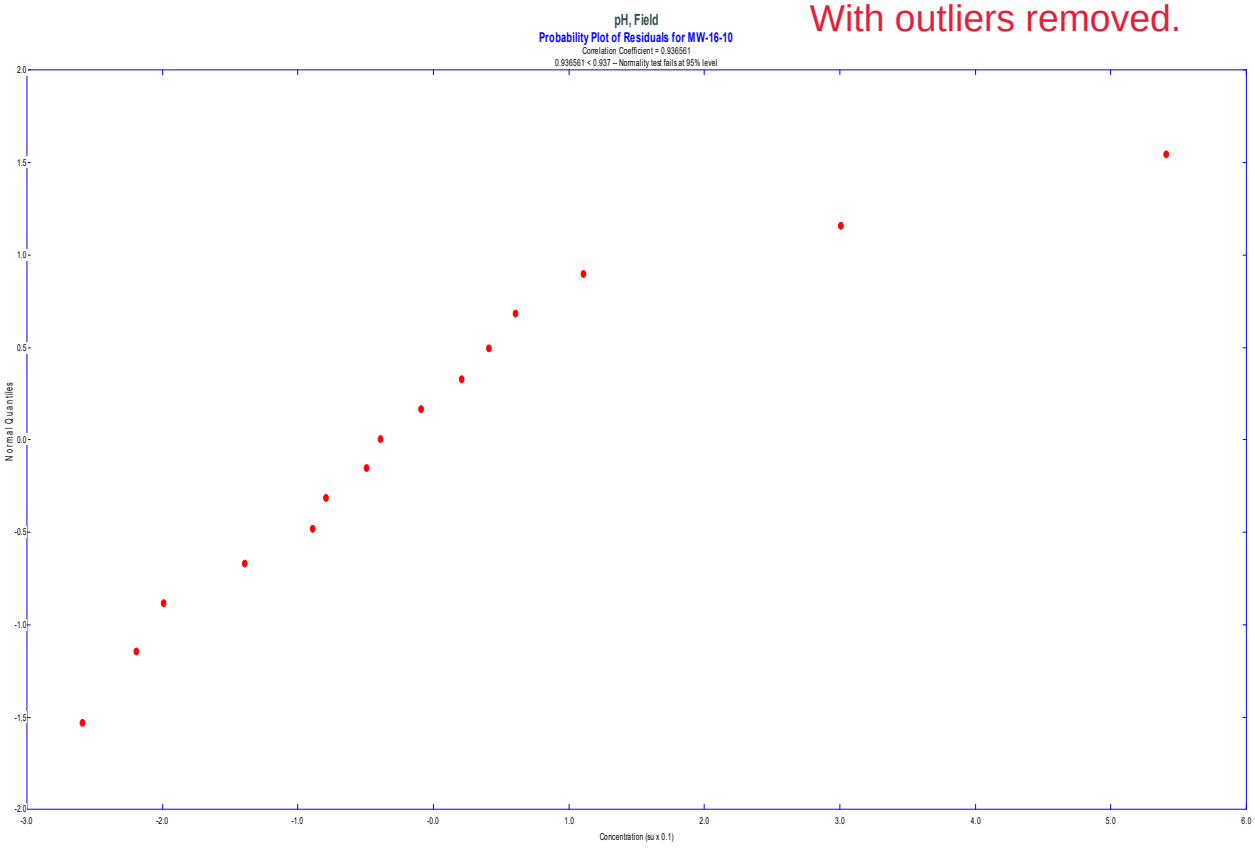

Chloride
Probability Plot of Residuals for MW-16-10
Correlation Coefficient = 0.864861
0.864861 < 0.942 -- Normality test fails at 95% level
Anomalous data collected from MW-16-10 on 2/28/2017, 4/18/2017, and 6/6/2017 were identified as outliers and removed.
Normal Quantiles
Concentration (mg/L x 100)

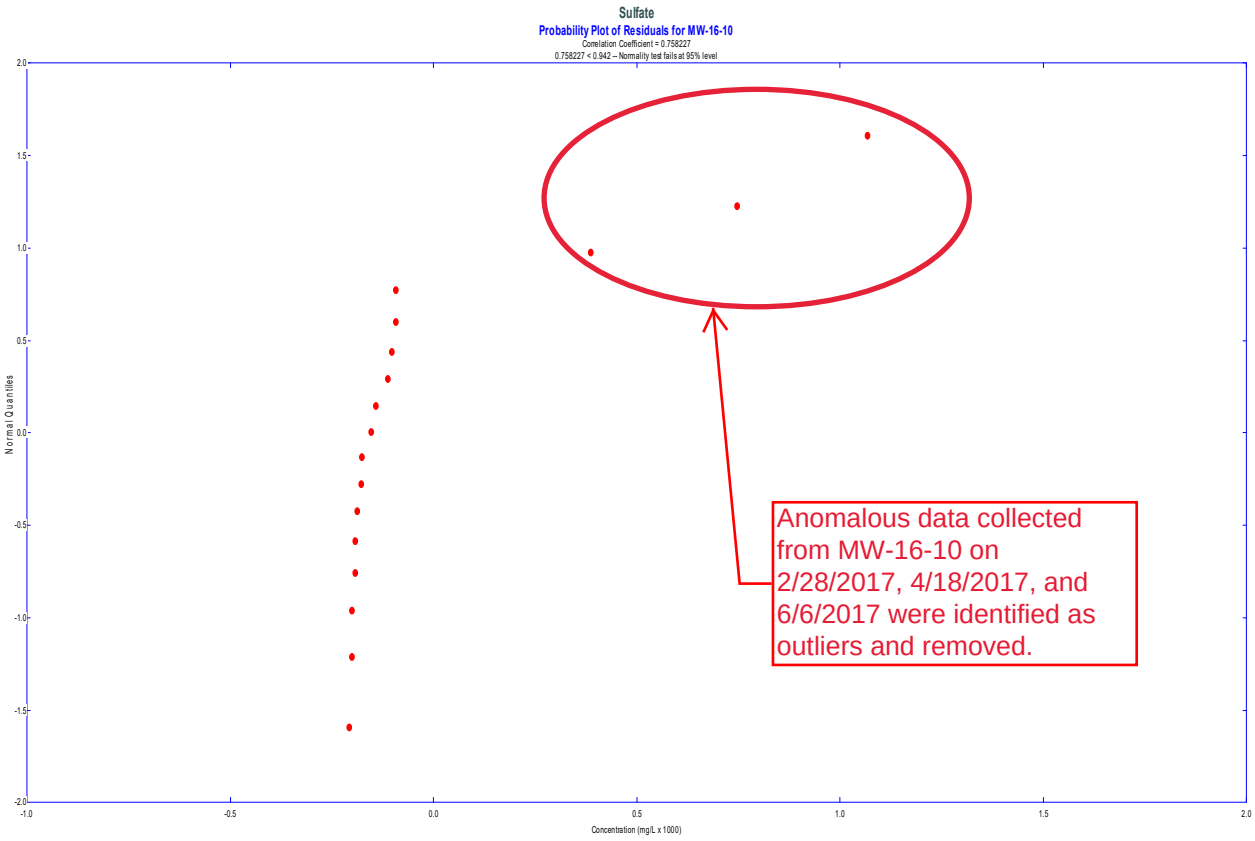
With outliers removed.



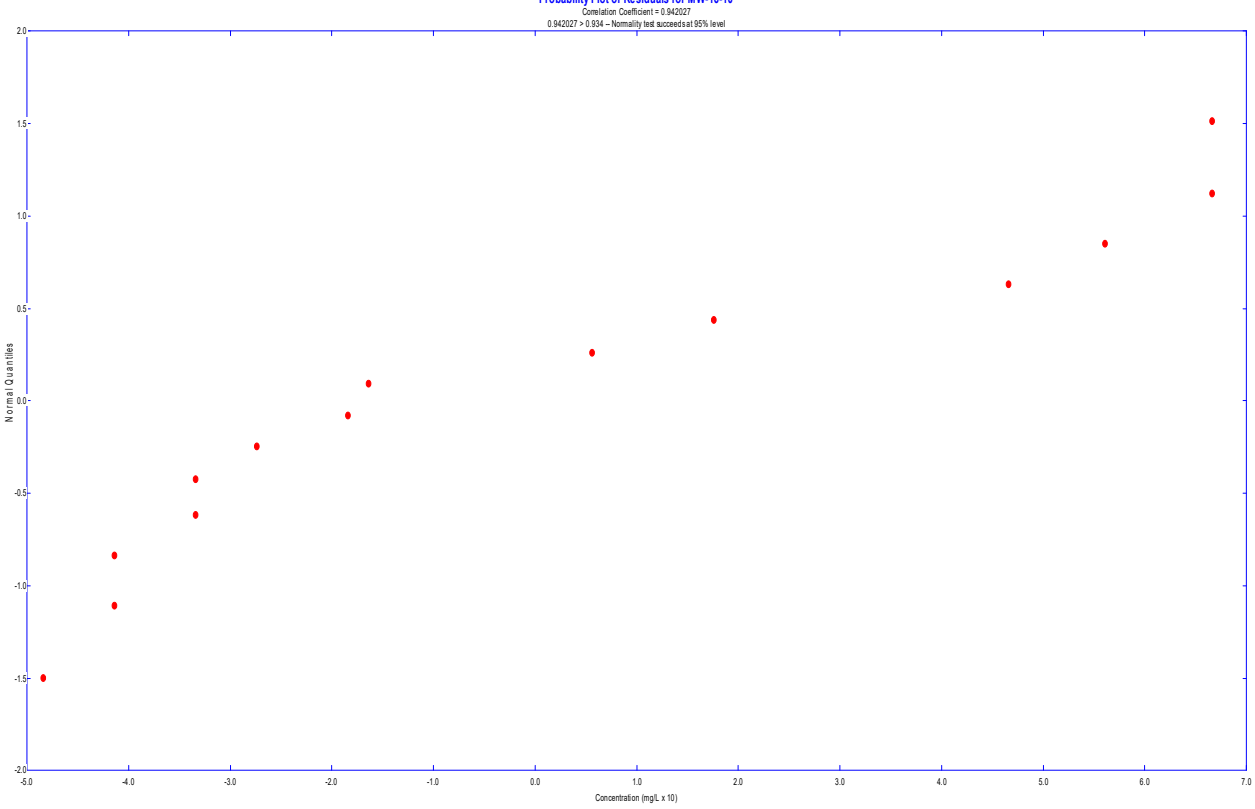

pH, Field
Probability Plot of Residuals for MW-16-10
Correlation Coefficient = 0.965642
0.965642 > 0.942 – Normality test succeeds at 95% level
Anomalous data collected from MW-16-10 on 4/18/2017 and 6/6/2017 were identified as outliers and removed.
Normal Quantiles
Concentration (su x 0.1)

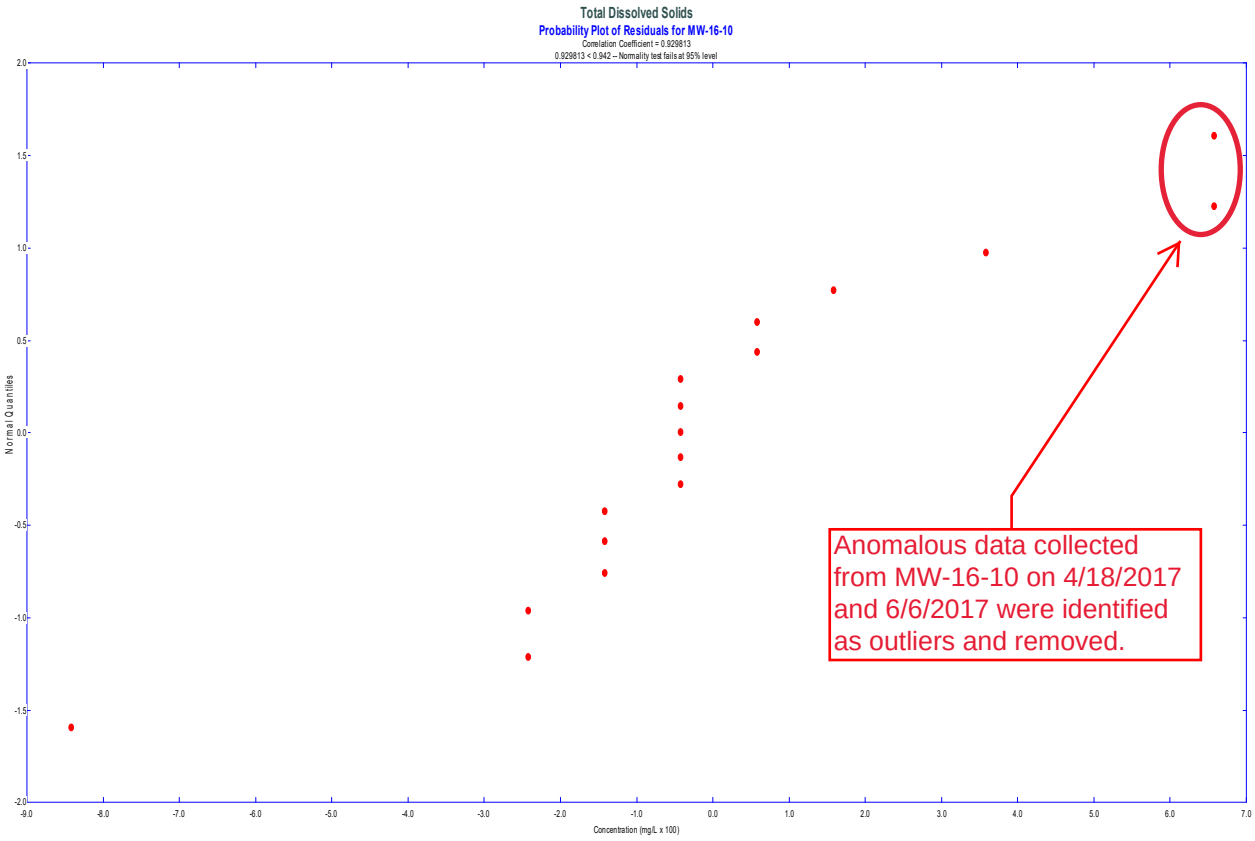
With outliers removed.



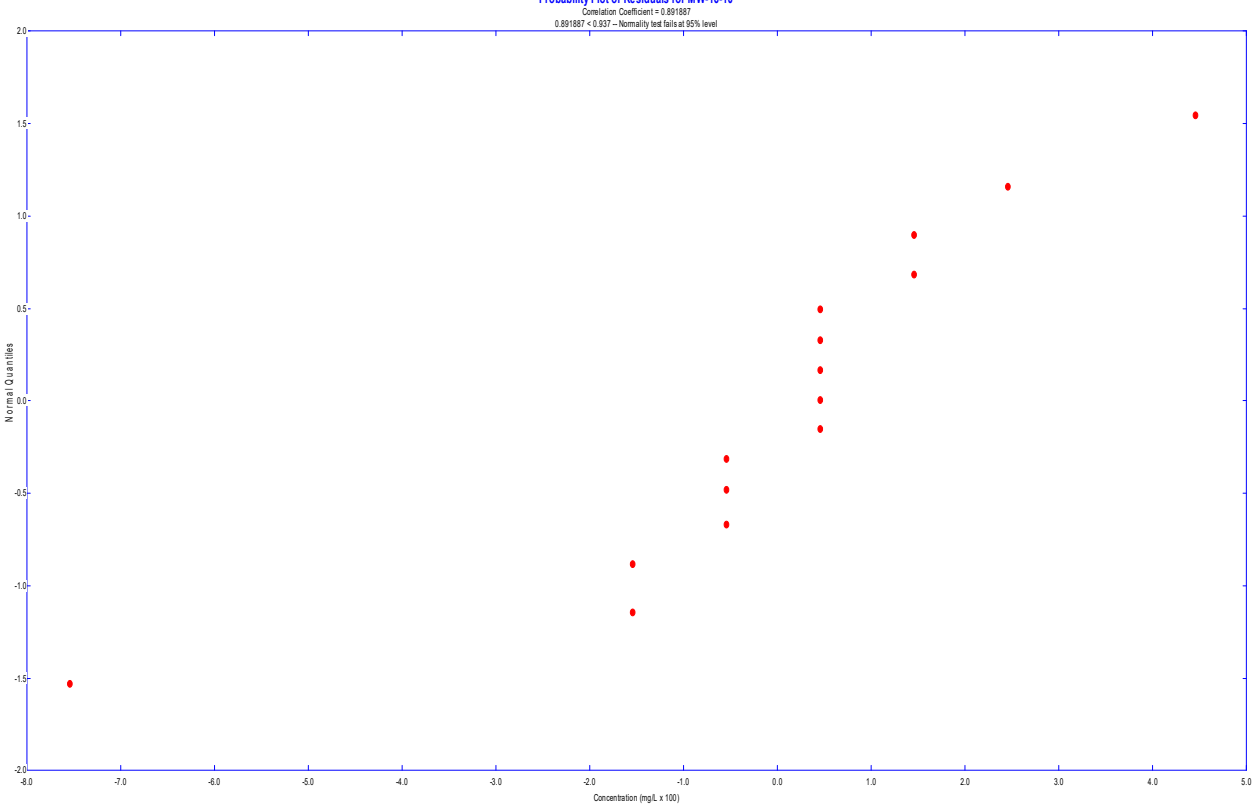

Sulfate
Probability Plot of Residuals for MW-16-10
Correlation Coefficient = 0.758227
0.758227 < 0.942 -- Normality test fails at 95% level
Normal Quantiles
Concentration (mg/L x 1000)
Anomalous data collected from MW-16-10 on 2/28/2017, 4/18/2017, and 6/6/2017 were identified as outliers and removed.

With outliers removed.




Total Dissolved Solids
Probability Plot of Residuals for MW-16-10
Correlation Coefficient = 0.929813
0.929813 < 0.942 -- Normality test fails at 95% level
Normal Quantiles
Concentration (mg/L x 100)
Anomalous data collected from MW-16-10 on 4/18/2017 and 6/6/2017 were identified as outliers and removed.

With outliers 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-16-05	17	1788.24	85.7493	-0.390323
MW-16-06	17	1958.82	93.9336	-0.0290474
MW-16-07	17	2023.53	109.141	**-1.66872**
MW-16-08	17	1958.82	150.245	-0.0607323
MW-16-10	15	1986.67	130.201	-0.149769
MW-16-11A	15	1780	120.712	-0.11097

All Locations

Obs.	Mean	Std. Dev.	Skewness
98	1917.35	148.55	-0.167239

Skewness Coefficient

Parameter: Boron

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-16-05	17	7.48789	0.0485012	-0.495022
MW-16-06	17	7.57901	0.0480781	-0.112209
MW-16-07	17	7.61114	0.0566335	**-1.81277**
MW-16-08	17	7.5773	0.0772797	-0.208853
MW-16-10	15	7.59219	0.066032	-0.221234
MW-16-11A	15	7.4822	0.0683238	-0.227309

All Locations

Obs.	Mean	Std. Dev.	Skewness
98	7.55568	0.0784182	-0.318029

Shapiro-Wilks Test of Normality

Parameter: Boron

Location: MW-16-07

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	1700	2100	400	0.4968	198.72
2	1900	2100	200	0.3273	65.46
3	1900	2100	200	0.254	50.8
4	2000	2100	100	0.1988	19.88
5	2000	2100	100	0.1524	15.24
6	2000	2100	100	0.1109	11.09
7	2000	2100	100	0.0725	7.25
8	2000	2100	100	0.0359	3.59
9	2100	2100	0		
10	2100	2000	-100		
11	2100	2000	-100		
12	2100	2000	-100		
13	2100	2000	-100		
14	2100	2000	-100		
15	2100	1900	-200		
16	2100	1900	-200		
17	2100	1700	-400		

Sum of b values = 372.03

Sample Standard Deviation = 109.141

W Statistic = 0.726206

5% Critical value of 0.892 exceeds 0.726206

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.726206

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Boron

Location: MW-16-07

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	7.43838	7.64969	0.211309	0.4968	0.104978
2	7.54961	7.64969	0.100083	0.3273	0.0327573
3	7.54961	7.64969	0.100083	0.254	0.0254212
4	7.6009	7.64969	0.0487902	0.1988	0.00969948
5	7.6009	7.64969	0.0487902	0.1524	0.00743562
6	7.6009	7.64969	0.0487902	0.1109	0.00541083
7	7.6009	7.64969	0.0487902	0.0725	0.00353729
8	7.6009	7.64969	0.0487902	0.0359	0.00175157
9	7.64969	7.64969	0		
10	7.64969	7.6009	-0.0487902		
11	7.64969	7.6009	-0.0487902		
12	7.64969	7.6009	-0.0487902		
13	7.64969	7.6009	-0.0487902		
14	7.64969	7.6009	-0.0487902		
15	7.64969	7.54961	-0.100083		
16	7.64969	7.54961	-0.100083		
17	7.64969	7.43838	-0.211309		

Sum of b values = 0.190992

Sample Standard Deviation = 0.0566335

W Statistic = 0.710824

5% Critical value of 0.892 exceeds 0.710824

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.710824

Evidence of non-normality at 99% level of significance

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-05

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
	8/3/2016	1800
	9/20/2016	1700
	11/8/2016	1800
	1/9/2017	1800 B
	3/1/2017	1900
	4/18/2017	1900
	6/6/2017	1900 B
	7/25/2017	1800
	9/13/2017	1800
	10/2/2017	1600
	3/27/2018	1900
	10/1/2018	1700
	3/18/2019	1700
	9/17/2019	1800
	3/19/2020	1800
	9/16/2020	1700

From 16 baseline samples
Baseline mean = 1787.5
Baseline std Dev = 88.5061

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	1800	[0, 1947.43]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-06

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
	8/3/2016	1900
	9/20/2016	1800
	11/9/2016	2100
	1/10/2017	1900 B
	2/28/2017	2000
	4/18/2017	2000
	6/6/2017	2000 B
	7/25/2017	2100
	9/14/2017	2000
	10/2/2017	1800
	3/27/2018	2100
	10/2/2018	1900
	3/20/2019	1900
	9/17/2019	1900
	3/19/2020	2000
	9/15/2020	1900

From 16 baseline samples
Baseline mean = 1956.25
Baseline std Dev = 96.3933

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	2000	[0, 2130.43]	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-07

Parameter: Boron

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) = 14
Maximum Baseline Concentration = 2100
Confidence Level = 93.3%
False Positive Rate = 6.7%

Baseline Measurements	Date	Value
	8/3/2016	2000
	9/22/2016	1700
	11/9/2016	2100
	1/10/2017	2100 B
	2/27/2017	2100
	4/18/2017	2100
	6/6/2017	2100 B
	7/25/2017	2000
	9/14/2017	2100
	10/3/2017	1900
	3/27/2018	2100
	10/2/2018	2100
	3/20/2019	2000
	9/17/2019	2000

Date	Count	Mean	Significant
4/9/2021	1	2000	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-08

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
	8/3/2016	2000
	9/19/2016	1900
	11/8/2016	2200
	1/10/2017	2100 B
	2/28/2017	2100
	4/18/2017	2100
	6/7/2017	2200 B
	7/25/2017	2000
	9/12/2017	1900
	10/4/2017	1700
	3/28/2018	2000
	10/4/2018	1900
	3/19/2019	1900
	9/17/2019	1700
	3/18/2020	1900
	9/15/2020	1800

From 16 baseline samples
Baseline mean = 1962.5
Baseline std Dev = 154.38

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	1900	[0, 2241.47]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-10

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	1800
	9/19/2016	1900
	11/8/2016	2100
	1/11/2017	2100 B
	2/28/2017	1800
	7/26/2017	2100
	9/12/2017	2200
	10/4/2017	1900
	3/28/2018	2100
	10/3/2018	2100
	3/19/2019	2000
	9/17/2019	2000
	3/18/2020	1900
	9/15/2020	1800

From 14 baseline samples
Baseline mean = 1985.71
Baseline std Dev = 135.062

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
4/9/2021	1	2000	[0, 2233.29]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-11A

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	1600
	9/22/2016	1600
	11/7/2016	1900
	1/11/2017	1800 B
	5/18/2017	1800
	7/25/2017	1900
	9/12/2017	1900
	10/4/2017	1700
	3/28/2018	2000
	10/4/2018	1800
	3/19/2019	1800
	9/17/2019	1700
	3/18/2020	1600
	9/15/2020	1800

From 14 baseline samples
Baseline mean = 1778.57
Baseline std Dev = 125.137

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
4/9/2021	1	1800	[0, 2007.96]	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-16-05	17	41882.4	9426.57	**1.60141**
MW-16-06	17	37352.9	2914.21	0.951089
MW-16-07	17	59588.2	16688.5	**1.71316**
MW-16-08	17	58764.7	14626.7	**1.19054**
MW-16-10	14	29214.3	2920.18	-0.551064
MW-16-11A	15	40866.7	12403.1	**1.73492**

All Locations

Obs.	Mean	Std. Dev.	Skewness
97	45164.9	15626.5	**1.52703**

Skewness Coefficient

Parameter: Calcium

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-16-05	17	10.6224	0.199448	**1.22826**
MW-16-06	17	10.5254	0.0758229	0.742213
MW-16-07	17	10.9647	0.243886	**1.08376**
MW-16-08	17	10.9556	0.226695	0.866557
MW-16-10	14	10.2776	0.1034	-0.661313
MW-16-11A	15	10.5825	0.266079	0.785759

All Locations

Obs.	Mean	Std. Dev.	Skewness
97	10.6679	0.308905	0.611109

Shapiro-Wilks Test of Normality

Parameter: Calcium

Location: MW-16-05

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	33000	69000	36000	0.4968	17884.8
2	35000	55000	20000	0.3273	6546
3	35000	51000	16000	0.254	4064
4	36000	48000	12000	0.1988	2385.6
5	36000	45000	9000	0.1524	1371.6
6	36000	45000	9000	0.1109	998.1
7	36000	39000	3000	0.0725	217.5
8	37000	38000	1000	0.0359	35.9
9	38000	38000	0		
10	38000	37000	-1000		
11	39000	36000	-3000		
12	45000	36000	-9000		
13	45000	36000	-9000		
14	48000	36000	-12000		
15	51000	35000	-16000		
16	55000	35000	-20000		
17	69000	33000	-36000		

Sum of b values = 33503.5

Sample Standard Deviation = 9426.57

W Statistic = 0.789501

5% Critical value of 0.892 exceeds 0.789501

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.789501

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Calcium

Location: MW-16-05

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	10.4043	11.1419	0.737599	0.4968	0.366439
2	10.4631	10.9151	0.451985	0.3273	0.147935
3	10.4631	10.8396	0.376478	0.254	0.0956253
4	10.4913	10.779	0.287682	0.1988	0.0571912
5	10.4913	10.7144	0.223144	0.1524	0.0340071
6	10.4913	10.7144	0.223144	0.1109	0.0247466
7	10.4913	10.5713	0.0800427	0.0725	0.0058031
8	10.5187	10.5453	0.0266682	0.0359	0.00095739
9	10.5453	10.5453	0		
10	10.5453	10.5187	-0.0266682		
11	10.5713	10.4913	-0.0800427		
12	10.7144	10.4913	-0.223144		
13	10.7144	10.4913	-0.223144		
14	10.779	10.4913	-0.287682		
15	10.8396	10.4631	-0.376478		
16	10.9151	10.4631	-0.451985		
17	11.1419	10.4043	-0.737599		

Sum of b values = 0.732705

Sample Standard Deviation = 0.199448

W Statistic = 0.843484

5% Critical value of 0.892 exceeds 0.843484

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.843484

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Calcium

Location: MW-16-07

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	42000	110000	68000	0.4968	33782.4
2	45000	77000	32000	0.3273	10473.6
3	47000	76000	29000	0.254	7366
4	48000	71000	23000	0.1988	4572.4
5	50000	62000	12000	0.1524	1828.8
6	50000	61000	11000	0.1109	1219.9
7	50000	60000	10000	0.0725	725
8	50000	59000	9000	0.0359	323.1
9	55000	55000	0		
10	59000	50000	-9000		
11	60000	50000	-10000		
12	61000	50000	-11000		
13	62000	50000	-12000		
14	71000	48000	-23000		
15	76000	47000	-29000		
16	77000	45000	-32000		
17	110000	42000	-68000		

Sum of b values = 60291.2

Sample Standard Deviation = 16688.5

W Statistic = 0.815739

5% Critical value of 0.892 exceeds 0.815739

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.815739

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Calcium

Location: MW-16-07

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	10.6454	11.6082	0.962811	0.4968	0.478324
2	10.7144	11.2516	0.537143	0.3273	0.175807
3	10.7579	11.2385	0.480586	0.254	0.122069
4	10.779	11.1704	0.391479	0.1988	0.077826
5	10.8198	11.0349	0.215111	0.1524	0.032783
6	10.8198	11.0186	0.198851	0.1109	0.0220526
7	10.8198	11.0021	0.182322	0.0725	0.0132183
8	10.8198	10.9853	0.165514	0.0359	0.00594197
9	10.9151	10.9151	0		
10	10.9853	10.8198	-0.165514		
11	11.0021	10.8198	-0.182322		
12	11.0186	10.8198	-0.198851		
13	11.0349	10.8198	-0.215111		
14	11.1704	10.779	-0.391479		
15	11.2385	10.7579	-0.480586		
16	11.2516	10.7144	-0.537143		
17	11.6082	10.6454	-0.962811		

Sum of b values = 0.928022
Sample Standard Deviation = 0.243886
W Statistic = 0.904946

5% Critical value of 0.892 is less than 0.904946
Data is normally distributed at 95% level of significance

1% Critical value of 0.851 is less than 0.904946
Data is normally distributed at 99% level of significance

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-05

Parameter: Calcium

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) = 14
Maximum Baseline Concentration = 69000
Confidence Level = 93.3%
False Positive Rate = 6.7%

Baseline Measurements	Date	Value
	8/3/2016	69000
	9/20/2016	51000
	11/8/2016	55000
	1/9/2017	48000
	3/1/2017	36000
	4/18/2017	45000
	6/6/2017	39000
	7/25/2017	38000
	9/13/2017	45000
	10/2/2017	36000
	3/27/2018	36000
	10/1/2018	36000
	3/18/2019	35000
	9/17/2019	38000

Date	Count	Mean	Significant
4/9/2021	1	33000	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-06

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
	8/3/2016	45000
	9/20/2016	40000
	11/9/2016	37000
	1/10/2017	40000
	2/28/2017	36000
	4/18/2017	34000
	6/6/2017	36000
	7/25/2017	40000
	9/14/2017	38000
	10/2/2017	33000
	3/27/2018	36000
	10/2/2018	35000
	3/20/2019	35000
	9/17/2019	40000
	3/19/2020	37000
	9/15/2020	37000

From 16 baseline samples
Baseline mean = 37437.5
Baseline std Dev = 2988.17

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	36000	[0, 42837.1]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-07

Parameter: Calcium

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

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

Baseline Samples	Date	Result
	8/3/2016	11.6082
	9/22/2016	11.0349
	11/9/2016	11.2516
	1/10/2017	10.8198
	2/27/2017	11.0186
	4/18/2017	11.0021
	6/6/2017	10.8198
	7/25/2017	11.2385
	9/14/2017	10.9853
	10/3/2017	10.9151
	3/27/2018	11.1704
	10/2/2018	10.8198
	3/20/2019	10.7144
	9/17/2019	10.8198
	3/19/2020	10.7579
	9/15/2020	10.779

From 16 baseline samples
Baseline mean = 10.9847
Baseline std Dev = 0.237115

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	10.6454	[0, 11.4132]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-08

Parameter: Calcium

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

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

Baseline Samples	Date	Result
	8/3/2016	11.4076
	9/19/2016	11.4186
	11/8/2016	11.2516
	1/10/2017	11.0974
	2/28/2017	10.7364
	4/18/2017	10.9853
	6/7/2017	10.7144
	7/25/2017	11.0021
	9/12/2017	10.9151
	10/4/2017	10.6919
	3/28/2018	10.9853
	10/4/2018	10.9508
	3/19/2019	10.779
	9/17/2019	10.9151
	3/18/2020	10.7996
	9/15/2020	10.7364

From 16 baseline samples
Baseline mean = 10.9617
Baseline std Dev = 0.232713

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	10.859	[0, 11.3822]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-10

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	31000
	9/19/2016	25000
	11/8/2016	24000
	1/11/2017	27000
	7/26/2017	30000
	9/12/2017	30000
	10/4/2017	25000
	3/28/2018	30000
	10/3/2018 ~	32000
	3/19/2019 ~	32500
	9/17/2019	29000
	3/18/2020	29000
	9/15/2020	33000

From 13 baseline samples
Baseline mean = 29038.5
Baseline std Dev = 2961.29

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 = 13 (background observations) - 1
t(0.95, 13) = 1.78229

Date	Samples	Mean	Interval	Significant
4/9/2021	1	31500	[0, 34515.6]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-11A

Parameter: Calcium

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

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

Baseline Samples	Date	Result
	8/2/2016	10.5713
	9/22/2016	11.2385
	11/7/2016	10.0432
	1/11/2017	11.0186
	5/18/2017	10.4913
	7/25/2017	10.6454
	9/12/2017	10.6213
	10/4/2017	10.4631
	3/28/2018	10.5453
	10/4/2018	10.4341
	3/19/2019	10.4631
	9/17/2019	10.6213
	3/18/2020	10.5713
	9/15/2020	10.5187

From 14 baseline samples
Baseline mean = 10.589
Baseline std Dev = 0.274878

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
4/9/2021	1	10.4913	[0, 11.0929]	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-16-05	17	1494.12	42.8746	-0.390323
MW-16-06	17	1623.53	66.4211	-0.264733
MW-16-07	17	1705.88	65.8653	-0.0514898
MW-16-08	17	1850	86.6025	0.743899
MW-16-10	14	1528.57	82.542	0.29548
MW-16-11A	15	1650	68.1385	-0.525845

All Locations

Obs.	Mean	Std. Dev.	Skewness
97	1645.36	137.136	0.453747

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-05

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
	8/3/2016	1500
	9/20/2016	1500
	11/8/2016	1500
	1/9/2017	1500
	3/1/2017	1500
	4/18/2017	1400
	6/6/2017	1600
	7/25/2017	1500
	9/13/2017	1500
	10/2/2017	1500
	3/27/2018	1500
	10/1/2018	1500
	3/18/2019	1500
	9/17/2019	1400
	3/19/2020	1500
	9/16/2020	1500

From 16 baseline samples
Baseline mean = 1493.75
Baseline std Dev = 44.2531

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, 1573.72]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-06

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
	8/3/2016	1600
	9/20/2016	1600
	11/9/2016	1700
	1/10/2017	1700
	2/28/2017	1600
	4/18/2017	1500
	6/6/2017	1700
	7/25/2017	1600
	9/14/2017	1600
	10/2/2017	1700
	3/27/2018	1600
	10/2/2018	1600
	3/20/2019	1700
	9/17/2019	1500
	3/19/2020	1600
	9/15/2020	1700

From 16 baseline samples
Baseline mean = 1625
Baseline std Dev = 68.313

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, 1748.44]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-07

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
	8/3/2016	1700
	9/22/2016	1800
	11/9/2016	1700
	1/10/2017	1800
	2/27/2017	1600
	4/18/2017	1600
	6/6/2017	1700
	7/25/2017	1700
	9/14/2017	1600
	10/3/2017	1700
	3/27/2018	1700
	10/2/2018	1700
	3/20/2019	1800
	9/17/2019	1700
	3/19/2020	1700
	9/15/2020	1800

From 16 baseline samples
Baseline mean = 1706.25
Baseline std Dev = 68.0074

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	1700	[0, 1829.14]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-08

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
	8/3/2016	1800
	9/19/2016	1800
	11/8/2016	1900
	1/10/2017	2000
	2/28/2017	1800
	4/18/2017	1700
	6/7/2017	1800
	7/25/2017	1800
	9/12/2017	1800
	10/4/2017	1900
	3/28/2018	1900
	10/4/2018	1800
	3/19/2019	1900
	9/17/2019	1800
	3/18/2020	1800
	9/15/2020 ~	2050

From 16 baseline samples
Baseline mean = 1846.88
Baseline std Dev = 88.4473

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	1900	[0, 2006.7]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-10

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	1500
	9/19/2016	1500
	11/8/2016	1600
	1/11/2017	1700
	7/26/2017	1500
	9/12/2017	1600
	10/4/2017	1600
	3/28/2018	1500
	10/3/2018	1400
	3/19/2019	1500
	9/17/2019	1500
	3/18/2020	1500
	9/15/2020	1600

From 13 baseline samples
Baseline mean = 1538.46
Baseline std Dev = 76.7948

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 = 13 (background observations) - 1
t(0.95, 13) = 1.78229

Date	Samples	Mean	Interval	Significant
4/9/2021	1	1400	[0, 1680.5]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-11A

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	1500
	9/22/2016	1700
	11/7/2016	1600
	1/11/2017	1600
	5/18/2017	1600
	7/25/2017	1600
	9/12/2017	1600
	10/4/2017	1700
	3/28/2018	1700
	10/4/2018	1700
	3/19/2019	1700
	9/17/2019	1600
	3/18/2020	1700
	9/15/2020 ~	1750

From 14 baseline samples
Baseline mean = 1646.43
Baseline std Dev = 69.2384

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
4/9/2021	1	1700	[0, 1773.35]	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-16-05	17	1.10353	0.176669	**-2.45388**
MW-16-06	17	1.09059	0.177499	**-2.23316**
MW-16-07	17	1.01824	0.208993	**-1.81079**
MW-16-08	17	1.13529	0.0785905	0.104706
MW-16-10	15	0.903333	0.269647	-0.671936
MW-16-11A	15	0.842667	0.218745	-0.916762

All Locations

Obs.	Mean	Std. Dev.	Skewness
98	1.02143	0.217625	**-1.51121**

Skewness Coefficient

Parameter: Fluoride

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-16-05	17	1.07412	0.289203	0.0620365
MW-16-06	17	1.06118	0.288312	0.0740837
MW-16-07	17	0.959412	0.368824	0.0825257
MW-16-08	17	1.13529	0.0785905	0.104706
MW-16-10	15	0.77	0.490233	0.245965
MW-16-11A	15	0.709333	0.445124	0.25875

All Locations

Obs.	Mean	Std. Dev.	Skewness
98	0.960204	0.372838	0.106665

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-16-05	17	0.080971	0.213115	**-3.01482**
MW-16-06	17	0.0690078	0.213031	**-2.86243**
MW-16-07	17	-0.00995193	0.266502	**-2.0669**
MW-16-08	17	0.124634	0.0693195	-0.059797
MW-16-10	15	-0.15323	0.350399	-0.82802
MW-16-11A	15	-0.210321	0.305252	-0.974549

All Locations

Obs.	Mean	Std. Dev.	Skewness
98	-0.00973511	0.271576	**-1.84972**

Shapiro-Wilks Test of Normality

Parameter: Fluoride

Location: MW-16-05

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	1.3	0.8	0.4968	0.39744
2	0.96	1.2	0.24	0.3273	0.078552
3	1	1.2	0.2	0.254	0.0508
4	1.1	1.2	0.1	0.1988	0.01988
5	1.1	1.2	0.1	0.1524	0.01524
6	1.1	1.2	0.1	0.1109	0.01109
7	1.1	1.2	0.1	0.0725	0.00725
8	1.1	1.2	0.1	0.0359	0.00359
9	1.1	1.1	0		
10	1.2	1.1	-0.1		
11	1.2	1.1	-0.1		
12	1.2	1.1	-0.1		
13	1.2	1.1	-0.1		
14	1.2	1.1	-0.1		
15	1.2	1	-0.2		
16	1.2	0.96	-0.24		
17	1.3	0.5	-0.8		

Sum of b values = 0.583842

Sample Standard Deviation = 0.176669

W Statistic = 0.682578

5% Critical value of 0.892 exceeds 0.682578

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.682578

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Fluoride

Location: MW-16-05

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	0.262364	0.955511	0.4968	0.474698
2	-0.040822	0.182322	0.223144	0.3273	0.0730349
3	0	0.182322	0.182322	0.254	0.0463097
4	0.0953102	0.182322	0.0870114	0.1988	0.0172979
5	0.0953102	0.182322	0.0870114	0.1524	0.0132605
6	0.0953102	0.182322	0.0870114	0.1109	0.00964956
7	0.0953102	0.182322	0.0870114	0.0725	0.00630832
8	0.0953102	0.182322	0.0870114	0.0359	0.00312371
9	0.0953102	0.0953102	0		
10	0.182322	0.0953102	-0.0870114		
11	0.182322	0.0953102	-0.0870114		
12	0.182322	0.0953102	-0.0870114		
13	0.182322	0.0953102	-0.0870114		
14	0.182322	0.0953102	-0.0870114		
15	0.182322	0	-0.182322		
16	0.182322	-0.040822	-0.223144		
17	0.262364	-0.693147	-0.955511		

Sum of b values = 0.643683

Sample Standard Deviation = 0.213115

W Statistic = 0.570157

5% Critical value of 0.892 exceeds 0.570157

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.570157

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Fluoride

Location: MW-16-06

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	1.3	0.8	0.4968	0.39744
2	0.94	1.2	0.26	0.3273	0.085098
3	1	1.2	0.2	0.254	0.0508
4	1	1.2	0.2	0.1988	0.03976
5	1.1	1.2	0.1	0.1524	0.01524
6	1.1	1.2	0.1	0.1109	0.01109
7	1.1	1.2	0.1	0.0725	0.00725
8	1.1	1.1	0	0.0359	0
9	1.1	1.1	0		
10	1.1	1.1	0		
11	1.2	1.1	-0.1		
12	1.2	1.1	-0.1		
13	1.2	1.1	-0.1		
14	1.2	1	-0.2		
15	1.2	1	-0.2		
16	1.2	0.94	-0.26		
17	1.3	0.5	-0.8		

Sum of b values = 0.606678

Sample Standard Deviation = 0.177499

W Statistic = 0.730138

5% Critical value of 0.892 exceeds 0.730138

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.730138

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Fluoride

Location: MW-16-06

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	0.262364	0.955511	0.4968	0.474698
2	-0.0618754	0.182322	0.244197	0.3273	0.0799257
3	0	0.182322	0.182322	0.254	0.0463097
4	0	0.182322	0.182322	0.1988	0.0362455
5	0.0953102	0.182322	0.0870114	0.1524	0.0132605
6	0.0953102	0.182322	0.0870114	0.1109	0.00964956
7	0.0953102	0.182322	0.0870114	0.0725	0.00630832
8	0.0953102	0.0953102	0	0.0359	0
9	0.0953102	0.0953102	0		
10	0.0953102	0.0953102	0		
11	0.182322	0.0953102	-0.0870114		
12	0.182322	0.0953102	-0.0870114		
13	0.182322	0.0953102	-0.0870114		
14	0.182322	0	-0.182322		
15	0.182322	0	-0.182322		
16	0.182322	-0.0618754	-0.244197		
17	0.262364	-0.693147	-0.955511		

Sum of b values = 0.666397

Sample Standard Deviation = 0.213031

W Statistic = 0.611593

5% Critical value of 0.892 exceeds 0.611593

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.611593

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Fluoride

Location: MW-16-07

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	1.2	0.7	0.4968	0.34776
2	0.5	1.2	0.7	0.3273	0.22911
3	0.94	1.2	0.26	0.254	0.06604
4	0.97	1.1	0.13	0.1988	0.025844
5	1	1.1	0.1	0.1524	0.01524
6	1	1.1	0.1	0.1109	0.01109
7	1.1	1.1	0	0.0725	0
8	1.1	1.1	0	0.0359	0
9	1.1	1.1	0		
10	1.1	1.1	0		
11	1.1	1.1	0		
12	1.1	1	-0.1		
13	1.1	1	-0.1		
14	1.1	0.97	-0.13		
15	1.2	0.94	-0.26		
16	1.2	0.5	-0.7		
17	1.2	0.5	-0.7		

Sum of b values = 0.695084

Sample Standard Deviation = 0.208993

W Statistic = 0.691341

5% Critical value of 0.892 exceeds 0.691341

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.691341

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Fluoride

Location: MW-16-07

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	0.182322	0.875469	0.4968	0.434933
2	-0.693147	0.182322	0.875469	0.3273	0.286541
3	-0.0618754	0.182322	0.244197	0.254	0.062026
4	-0.0304592	0.0953102	0.125769	0.1988	0.025003
5	0	0.0953102	0.0953102	0.1524	0.0145253
6	0	0.0953102	0.0953102	0.1109	0.0105699
7	0.0953102	0.0953102	0	0.0725	0
8	0.0953102	0.0953102	0	0.0359	0
9	0.0953102	0.0953102	0		
10	0.0953102	0.0953102	0		
11	0.0953102	0.0953102	0		
12	0.0953102	0	-0.0953102		
13	0.0953102	0	-0.0953102		
14	0.0953102	-0.0304592	-0.125769		
15	0.182322	-0.0618754	-0.244197		
16	0.182322	-0.693147	-0.875469		
17	0.182322	-0.693147	-0.875469		

Sum of b values = 0.833598

Sample Standard Deviation = 0.266502

W Statistic = 0.611493

5% Critical value of 0.892 exceeds 0.611493

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.611493

Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-05

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 7.14286%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 14
Maximum Baseline Concentration = 1.3
Confidence Level = 93.3%
False Positive Rate = 6.7%

Baseline Measurements	Date	Value
	8/3/2016	0.96
	9/20/2016	1.1
	11/8/2016	ND<0.5 U
	1/9/2017	1
	3/1/2017	1.1
	4/18/2017	1.1
	6/6/2017	1.2
	7/25/2017	1.1
	9/13/2017	1.3
	10/2/2017	1.2
	3/27/2018	1.2
	10/1/2018	1.2
	3/18/2019	1.1
	9/17/2019	1.1

Date	Count	Mean	Significant
4/9/2021	1	1.2	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-06

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 7.14286%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 14
Maximum Baseline Concentration = 1.3
Confidence Level = 93.3%
False Positive Rate = 6.7%

Baseline Measurements	Date	Value
	8/3/2016	0.94
	9/20/2016	1.1
	11/9/2016	ND<0.5 U
	1/10/2017	1
	2/28/2017	1.1
	4/18/2017	1.1
	6/6/2017	1.2
	7/25/2017	1.1
	9/14/2017	1.3
	10/2/2017	1.2
	3/27/2018	1.2
	10/2/2018	1.2
	3/20/2019	1.1
	9/17/2019	1

Date	Count	Mean	Significant
4/9/2021	1	1.2	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-07

Parameter: Fluoride

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Total Percent Non-Detects = 14.2857%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 14
Maximum Baseline Concentration = 1.2
Confidence Level = 93.3%
False Positive Rate = 6.7%

Baseline Measurements	Date	Value
	8/3/2016	0.94
	9/22/2016	1.1
	11/9/2016	ND<0.5 U
	1/10/2017	0.97
	2/27/2017	1.1
	4/18/2017	1
	6/6/2017	1.1
	7/25/2017	ND<0.5 U
	9/14/2017	1.2
	10/3/2017	1.1
	3/27/2018	1.2
	10/2/2018	1.1
	3/20/2019	1
	9/17/2019	1.1

Date	Count	Mean	Significant
4/9/2021	1	1.2	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-08

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
	8/3/2016	1
	9/19/2016	1.1
	11/8/2016	1.1
	1/10/2017	1
	2/28/2017	1.1
	4/18/2017	1.1
	6/7/2017	1.2
	7/25/2017	1.1
	9/12/2017	1.3
	10/4/2017	1.2
	3/28/2018	1.2
	10/4/2018	1.1
	3/19/2019	1.1
	9/17/2019	1.1
	3/18/2020	1.2
	9/15/2020	1.2

From 16 baseline samples
Baseline mean = 1.13125
Baseline std Dev = 0.07932

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	1.2	[0, 1.27458]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-10

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	0.81
	9/19/2016	0.98
	11/8/2016	ND<0.5 U
	1/11/2017	ND<0.5 U
	2/28/2017	ND<0.5 U
	7/26/2017	ND<0.5 U
	9/12/2017	1.2
	10/4/2017	1.1
	3/28/2018	1.1
	10/3/2018	1
	3/19/2019	0.96
	9/17/2019	1
	3/18/2020	1.1
	9/15/2020	1.2

From 14 baseline samples
Baseline mean = 0.889286
Baseline std Dev = 0.274071

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
4/9/2021	1	1.1	[0, 1.39168]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-11A

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	0.85
	9/22/2016	0.95
	11/7/2016	ND<0.5 U
	1/11/2017	ND<0.5 U
	5/18/2017	ND<0.5 U
	7/25/2017	ND<0.5 UF1
	9/12/2017	1
	10/4/2017	1
	3/28/2018 ~	1.05
	10/4/2018	0.98
	3/19/2019	0.91
	9/17/2019	0.94
	3/18/2020	1
	9/15/2020	0.96

From 14 baseline samples
Baseline mean = 0.831429
Baseline std Dev = 0.222464

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
4/9/2021	1	1	[0, 1.23922]	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-16-05	17	8.02	0.14089	**2.04226**
MW-16-06	17	7.95059	0.134744	-0.711064
MW-16-07	17	8.01765	0.10521	0.480191
MW-16-08	17	7.96765	0.143681	-0.562323
MW-16-10	15	8.04867	0.205908	**1.25391**
MW-16-11A	15	8.04867	0.152637	-0.0762042

All Locations

Obs.	Mean	Std. Dev.	Skewness
98	8.00724	0.149658	0.711753

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-16-05	17	2.0818	0.0172744	**1.99341**
MW-16-06	17	2.07311	0.0170509	-0.732621
MW-16-07	17	2.08156	0.013086	0.42134
MW-16-08	17	2.07524	0.0181276	-0.597749
MW-16-10	15	2.08521	0.0252118	**1.18743**
MW-16-11A	15	2.08534	0.0189878	-0.153057

All Locations

Obs.	Mean	Std. Dev.	Skewness
98	2.08018	0.0185814	0.601477

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-05

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	7.9	8.47	0.57	0.4968	0.283176
2	7.91	8.15	0.24	0.3273	0.078552
3	7.92	8.14	0.22	0.254	0.05588
4	7.92	8.1	0.18	0.1988	0.035784
5	7.94	8.07	0.13	0.1524	0.019812
6	7.95	8.03	0.08	0.1109	0.008872
7	7.95	8.02	0.07	0.0725	0.005075
8	7.95	7.96	0.01	0.0359	0.000359
9	7.96	7.96	0		
10	7.96	7.95	-0.01		
11	8.02	7.95	-0.07		
12	8.03	7.95	-0.08		
13	8.07	7.94	-0.13		
14	8.1	7.92	-0.18		
15	8.14	7.92	-0.22		
16	8.15	7.91	-0.24		
17	8.47	7.9	-0.57		

Sum of b values = 0.48751

Sample Standard Deviation = 0.14089

W Statistic = 0.748319

5% Critical value of 0.892 exceeds 0.748319

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.748319

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-05

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	2.06686	2.13653	0.0696677	0.4968	0.0346109
2	2.06813	2.09802	0.0298901	0.3273	0.00978304
3	2.06939	2.09679	0.027399	0.254	0.00695934
4	2.06939	2.09186	0.0224729	0.1988	0.0044676
5	2.07191	2.08815	0.0162402	0.1524	0.00247501
6	2.07317	2.08318	0.0100126	0.1109	0.0011104
7	2.07317	2.08194	0.00876649	0.0725	0.000635571
8	2.07317	2.07443	0.00125707	0.0359	4.51289e-005
9	2.07443	2.07443	0		
10	2.07443	2.07317	-0.00125707		
11	2.08194	2.07317	-0.00876649		
12	2.08318	2.07317	-0.0100126		
13	2.08815	2.07191	-0.0162402		
14	2.09186	2.06939	-0.0224729		
15	2.09679	2.06939	-0.027399		
16	2.09802	2.06813	-0.0298901		
17	2.13653	2.06686	-0.0696677		

Sum of b values = 0.060087

Sample Standard Deviation = 0.0172744

W Statistic = 0.756196

5% Critical value of 0.892 exceeds 0.756196

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.756196

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: pH, Field

Location: MW-16-10

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 7 for 15 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	7.79	8.59	0.8	0.515	0.412
2	7.83	8.35	0.52	0.3306	0.171912
3	7.85	8.16	0.31	0.2495	0.077345
4	7.91	8.11	0.2	0.1878	0.03756
5	7.96	8.09	0.13	0.1353	0.017589
6	7.97	8.07	0.1	0.088	0.0088
7	8	8.04	0.04	0.0433	0.001732
8	8.01	8.01	0		
9	8.04	8	-0.04		
10	8.07	7.97	-0.1		
11	8.09	7.96	-0.13		
12	8.11	7.91	-0.2		
13	8.16	7.85	-0.31		
14	8.35	7.83	-0.52		
15	8.59	7.79	-0.8		

Sum of b values = 0.726938
Sample Standard Deviation = 0.205908
W Statistic = 0.890267

5% Critical value of 0.881 is less than 0.890267
Data is normally distributed at 95% level of significance

1% Critical value of 0.835 is less than 0.890267
Data is normally distributed at 99% level of significance

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-05

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) = 14
Maximum Baseline Concentration = 8.47
Confidence Level = 93.3%
False Positive Rate = 6.7%

Baseline Measurements	Date	Value
	8/3/2016	8.07
	9/20/2016	8.47
	11/8/2016	8.14
	1/9/2017	7.95
	3/1/2017	8.1
	4/18/2017	8.02
	6/6/2017	7.92
	7/25/2017	7.94
	9/13/2017	7.92
	10/2/2017	7.95
	3/27/2018	7.95
	10/1/2018	8.15
	3/18/2019	7.96
	9/17/2019	7.91

Date	Count	Mean	Significant
4/9/2021	1	7.9	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-06

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
	8/3/2016	8.02
	9/20/2016	8.12
	11/9/2016	8.07
	1/10/2017	7.71
	2/28/2017	8.11
	4/18/2017	7.97
	6/6/2017	7.73
	7/25/2017	7.97
	9/14/2017	7.7
	10/2/2017	7.86
	3/27/2018	7.95
	10/2/2018	7.91
	3/20/2019	7.99
	9/17/2019	8.07
	3/19/2020	8.04
	9/15/2020	8.05

From 16 baseline samples
Baseline mean = 7.95437
Baseline std Dev = 0.138225

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	7.89	[7.65, 8.26]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-07

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
	8/3/2016	8.04
	9/22/2016	8.29
	11/9/2016	8.09
	1/10/2017	7.81
	2/27/2017	8.1
	4/18/2017	8
	6/6/2017	8
	7/25/2017	7.91
	9/14/2017	7.88
	10/3/2017	7.99
	3/27/2018	7.96
	10/2/2018	8.05
	3/20/2019	8.03
	9/17/2019	8.06
	3/19/2020	8.1
	9/15/2020	8.02

From 16 baseline samples
Baseline mean = 8.02062
Baseline std Dev = 0.107918

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	7.97	[7.78, 8.26]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-08

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
	8/3/2016	8.04
	9/19/2016	8.16
	11/8/2016	7.81
	1/10/2017	7.64
	2/28/2017	8.07
	4/18/2017	7.84
	6/7/2017	7.8
	7/25/2017	7.91
	9/12/2017	7.94
	10/4/2017	7.86
	3/28/2018	7.94
	10/4/2018	8.12
	3/19/2019	8.05
	9/17/2019	8.16
	3/18/2020	8.03
	9/15/2020	8.08

From 16 baseline samples
Baseline mean = 7.96562
Baseline std Dev = 0.148143

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	8	[7.64, 8.29]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-10

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	8.35
	9/19/2016	8.59
	11/8/2016	8.16
	1/11/2017	7.96
	2/28/2017	7.85
	7/25/2017	8
	9/12/2017	8.07
	10/4/2017	8.11
	3/28/2018	7.97
	10/3/2018	7.91
	3/19/2019	8.01
	9/17/2019	8.09
	3/18/2020	8.04
	9/15/2020	7.79

From 14 baseline samples
Baseline mean = 8.06429
Baseline std Dev = 0.204252

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 = 14 (background observations) - 1
t(0.975, 14) = 2.16037

Date	Samples	Mean	Interval	Significant
4/9/2021	1	7.83	[7.61, 8.52]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-11A

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	8.19
	9/22/2016	8.35
	11/7/2016	7.91
	1/11/2017	7.7
	5/18/2017	8.28
	7/25/2017	8.08
	9/12/2017	8.03
	10/4/2017	8.01
	3/28/2018	7.98
	10/4/2018	8.07
	3/19/2019	8.04
	9/17/2019	8.09
	3/18/2020	7.96
	9/15/2020	8.05

From 14 baseline samples
Baseline mean = 8.05286
Baseline std Dev = 0.157501

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 = 14 (background observations) - 1
t(0.975, 14) = 2.16037

Date	Samples	Mean	Interval	Significant
4/9/2021	1	7.99	[7.7, 8.41]	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-16-05	17	9.41176	3.93206	-0.516566
MW-16-06	17	5.62941	3.70789	0.540755
MW-16-07	17	71.9118	12.8017	-0.0441506
MW-16-08	17	5.77059	5.73768	**1.69017**
MW-16-10	14	73.3214	42.869	0.525678
MW-16-11A	15	5.4	5.25479	**1.24887**

All Locations

Obs.	Mean	Std. Dev.	Skewness
97	27.668	35.3351	**1.47888**

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-16-05	17	6.88235	5.81767	**3.50297**
MW-16-06	17	2.77647	3.60478	**29.8082**
MW-16-07	17	71.9118	12.8017	-0.0441506
MW-16-08	17	2.85882	5.77246	**9.61485**
MW-16-10	14	73.3214	42.869	0.525678
MW-16-11A	15	1.9	4.85563	**18.9296**

All Locations

Obs.	Mean	Std. Dev.	Skewness
97	25.6732	36.5857	**1.50872**

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-16-05	17	1.504	1.16837	0.732787
MW-16-06	17	0.785923	0.887	**5.00744**
MW-16-07	17	4.25987	0.184329	-0.430297
MW-16-08	17	0.645089	0.921537	**6.17841**
MW-16-10	14	4.13014	0.601648	0.0995023
MW-16-11A	15	0.422485	0.802371	**13.5424**

All Locations

Obs.	Mean	Std. Dev.	Skewness
97	1.92239	1.79646	0.696065

Shapiro-Wilks Test of Normality

Parameter: Sulfate

Location: MW-16-06

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Aitchison's Adjustment

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	1.3	20	18.7	0.4968	9.29016
2	2	20	18	0.3273	5.8914
3	3.1	20	16.9	0.254	4.2926
4	3.3	20	16.7	0.1988	3.31996
5	3.8	13	9.2	0.1524	1.40208
6	4.4	7	2.6	0.1109	0.28834
7	4.9	6.4	1.5	0.0725	0.10875
8	5	5	0	0.0359	0
9	5	5	0		
10	5	5	0		
11	6.4	4.9	-1.5		
12	7	4.4	-2.6		
13	13	3.8	-9.2		
14	20	3.3	-16.7		
15	20	3.1	-16.9		
16	20	2	-18		
17	20	1.3	-18.7		

Sum of b values = 24.5933

Sample Standard Deviation = 7.04807

W Statistic = 0.760979

5% Critical value of 0.892 exceeds 0.760979

Evidence of non-normality at 95% level of significance

1% Critical value of 0.851 exceeds 0.760979

Evidence of non-normality at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Sulfate

Location: MW-16-06

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Aitchison's Adjustment

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	0.262364	2.99573	2.73337	0.4968	1.35794
2	0.693147	2.99573	2.30259	0.3273	0.753636
3	1.1314	2.99573	1.86433	0.254	0.47354
4	1.19392	2.99573	1.80181	0.1988	0.3582
5	1.335	2.56495	1.22995	0.1524	0.187444
6	1.4816	1.94591	0.464306	0.1109	0.0514915
7	1.58924	1.8563	0.267063	0.0725	0.0193621
8	1.60944	1.60944	0	0.0359	0
9	1.60944	1.60944	0		
10	1.60944	1.60944	0		
11	1.8563	1.58924	-0.267063		
12	1.94591	1.4816	-0.464306		
13	2.56495	1.335	-1.22995		
14	2.99573	1.19392	-1.80181		
15	2.99573	1.1314	-1.86433		
16	2.99573	0.693147	-2.30259		
17	2.99573	0.262364	-2.73337		

Sum of b values = 3.20161
Sample Standard Deviation = 0.836635
W Statistic = 0.91526

5% Critical value of 0.892 is less than 0.91526
Data is normally distributed at 95% level of significance

1% Critical value of 0.851 is less than 0.91526
Data is normally distributed at 99% level of significance

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-05

Parameter: Sulfate

Natural Logarithm Transformation

Aitchison's Adjustment

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

Baseline Samples	Date	Result
	8/3/2016	2.11626
	9/20/2016	ND<0 U
	11/8/2016	ND<2.99573 U
	1/9/2017	ND<1.60944 U
	3/1/2017	ND<2.99573 U
	4/18/2017	ND<2.99573 U
	6/6/2017	2.3979
	7/25/2017	ND<2.99573 U
	9/13/2017	2.02815
	10/2/2017	2.18605
	3/27/2018	2.06686
	10/1/2018	2.25129
	3/18/2019	2.77259
	9/17/2019	2.70805
	3/19/2020	2.48491
	9/16/2020	1.91692

From 16 baseline samples
Baseline mean = 1.43306
Baseline std Dev = 1.16826

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	2.63906	[0, 3.54411]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-06

Parameter: Sulfate

Natural Logarithm Transformation

Aitchison's Adjustment

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

Baseline Samples	Date	Result
	8/3/2016	2.56495
	9/20/2016	1.4816
	11/9/2016	ND<2.99573 U
	1/10/2017	ND<1.60944 U
	2/28/2017	ND<2.99573 U
	4/18/2017	ND<2.99573 U
	6/6/2017	1.94591
	7/25/2017	ND<2.99573 U
	9/14/2017	1.58924
	10/2/2017	1.8563
	3/27/2018	1.1314
	10/2/2018	1.19392
	3/20/2019	1.335
	9/17/2019	ND<1.60944 U
	3/19/2020	ND<1.60944 U
	9/15/2020	ND<0.693147

From 16 baseline samples
Baseline mean = 0.818645
Baseline std Dev = 0.90543

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	0.262364	[0, 2.45476]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-07

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
	8/3/2016	75
	9/22/2016	67
	11/9/2016	63
	1/10/2017	56
	2/27/2017	73
	4/18/2017	74
	6/6/2017	81
	7/25/2017	95
	9/14/2017	88
	10/3/2017 ~	88.5
	3/27/2018	82
	10/2/2018	78
	3/20/2019	68
	9/17/2019	67
	3/19/2020	63
	9/15/2020	57

From 16 baseline samples
Baseline mean = 73.4688
Baseline std Dev = 11.4389

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	47	[0, 94.1389]	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-08

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 50%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 14
Maximum Baseline Concentration = 23
Confidence Level = 93.3%
False Positive Rate = 6.7%

Baseline Measurements	Date	Value
	8/3/2016	23
	9/19/2016	3.7
	11/8/2016	ND<20 U
	1/10/2017	ND<5 U
	2/28/2017	ND<20 U
	4/18/2017	ND<20 U
	6/7/2017	10
	7/25/2017	ND<20 U
	9/12/2017	2.4
	10/4/2017	2.5
	3/28/2018	2.7
	10/4/2018	ND<2 U
	3/19/2019	2.8
	9/17/2019	ND<5 U

Date	Count	Mean	Significant
4/9/2021	1	1.5	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-10

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	40
	9/19/2016	25
	11/8/2016	32
	1/11/2017	46
	7/26/2017	140
	9/12/2017	40
	10/4/2017	32
	3/28/2018	79
	10/3/2018 ~	129.5
	3/19/2019	140
	9/17/2019	57
	3/18/2020	55
	9/15/2020	91

From 13 baseline samples
Baseline mean = 69.7308
Baseline std Dev = 42.3717

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 = 13 (background observations) - 1
t(0.95, 13) = 1.78229

Date	Samples	Mean	Interval	Significant
4/9/2021	1	120	[0, 148.1]	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-11A

Parameter: Sulfate

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 64.2857%
Future Samples (k) = 1
Recent Dates = 1
Baseline Measurements (n) = 14
Maximum Baseline Concentration = 20
Confidence Level = 93.3%
False Positive Rate = 6.7%

Baseline Measurements	Date	Value
	8/2/2016	19
	9/22/2016	ND<10 U
	11/7/2016	ND<20 U
	1/11/2017	ND<20 U
	5/18/2017	ND<20 U
	7/25/2017	ND<20 U
	9/12/2017	2.8
	10/4/2017	2.5
	3/28/2018	1.7
	10/4/2018	ND<2 U
	3/19/2019	2.5
	9/17/2019	ND<5 U
	3/18/2020	ND<5 U
	9/15/2020	ND<2

Date	Count	Mean	Significant
4/9/2021	1	1	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-16-05	17	2429.41	157.181	-0.303785
MW-16-06	17	2623.53	222.288	-0.094009
MW-16-07	17	2841.18	193.839	**1.14593**
MW-16-08	17	2935.29	176.569	-0.62687
MW-16-10	15	2653.33	258.752	**-1.38383**
MW-16-11A	15	2613.33	255.976	-0.285334

All Locations

Obs.	Mean	Std. Dev.	Skewness
98	2684.69	266.459	-0.209455

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-16-05	17	7.7934	0.0655909	-0.444175
MW-16-06	17	7.86884	0.085885	-0.382609
MW-16-07	17	7.94987	0.0662266	0.849899
MW-16-08	17	7.98281	0.0615697	-0.818236
MW-16-10	15	7.87859	0.106537	**-1.86567**
MW-16-11A	15	7.86378	0.100106	-0.45668

All Locations

Obs.	Mean	Std. Dev.	Skewness
98	7.8903	0.101674	-0.54626

Shapiro-Wilks Test of Normality

Parameter: Total Dissolved Solids

Location: MW-16-10

Normality Test of Parameter Concentrations

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

K = 7 for 15 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	1900	3100	1200	0.515	618
2	2500	2900	400	0.3306	132.24
3	2500	2800	300	0.2495	74.85
4	2600	2800	200	0.1878	37.56
5	2600	2700	100	0.1353	13.53
6	2600	2700	100	0.088	8.8
7	2700	2700	0	0.0433	0
8	2700	2700	0		
9	2700	2700	0		
10	2700	2600	-100		
11	2700	2600	-100		
12	2800	2600	-200		
13	2800	2500	-300		
14	2900	2500	-400		
15	3100	1900	-1200		

Sum of b values = 884.98

Sample Standard Deviation = 258.752

W Statistic = 0.835551

5% Critical value of 0.881 exceeds 0.835551

Evidence of non-normality at 95% level of significance

1% Critical value of 0.835 is less than 0.835551

Data is normally distributed at 99% level of significance

Shapiro-Wilks Test of Normality

Parameter: Total Dissolved Solids

Location: MW-16-10

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

K = 7 for 15 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	7.54961	8.03916	0.489548	0.515	0.252117
2	7.82405	7.97247	0.14842	0.3306	0.0490677
3	7.82405	7.93737	0.113329	0.2495	0.0282755
4	7.86327	7.93737	0.074108	0.1878	0.0139175
5	7.86327	7.90101	0.0377403	0.1353	0.00510627
6	7.86327	7.90101	0.0377403	0.088	0.00332115
7	7.90101	7.90101	0	0.0433	0
8	7.90101	7.90101	0		
9	7.90101	7.90101	0		
10	7.90101	7.86327	-0.0377403		
11	7.90101	7.86327	-0.0377403		
12	7.93737	7.86327	-0.074108		
13	7.93737	7.82405	-0.113329		
14	7.97247	7.82405	-0.14842		
15	8.03916	7.54961	-0.489548		

Sum of b values = 0.351805

Sample Standard Deviation = 0.106537

W Statistic = 0.778892

5% Critical value of 0.881 exceeds 0.778892

Evidence of non-normality at 95% level of significance

1% Critical value of 0.835 exceeds 0.778892

Evidence of non-normality at 99% level of significance

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-05

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
	8/3/2016	2600
	9/20/2016	2400
	11/8/2016	2500
	1/9/2017	2700
	3/1/2017	2400
	4/18/2017	2500
	6/6/2017	2500
	7/25/2017	2600
	9/13/2017	2400
	10/2/2017	2400
	3/27/2018	2300
	10/1/2018	2200
	3/18/2019	2600
	9/17/2019	2500
	3/19/2020	2300
	9/16/2020	2100

From 16 baseline samples
Baseline mean = 2437.5
Baseline std Dev = 158.64

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	2300	[0, 2724.16]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-06

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
	8/3/2016	2500
	9/20/2016	2600
	11/9/2016	2500
	1/10/2017	3100
	2/28/2017	2700
	4/18/2017	2600
	6/6/2017	2700
	7/25/2017	2800
	9/14/2017	2600
	10/2/2017	2700
	3/27/2018	2500
	10/2/2018	2600
	3/20/2019	2600
	9/17/2019	2800
	3/19/2020	2900
	9/15/2020	2200

From 16 baseline samples
Baseline mean = 2650
Baseline std Dev = 200

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	2200	[0, 3011.4]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-07

Parameter: Total Dissolved Solids

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

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

Baseline Samples	Date	Result
	8/3/2016	7.93737
	9/22/2016	7.97247
	11/9/2016	7.93737
	1/10/2017	8.13153
	2/27/2017	7.97247
	4/18/2017	8.00637
	6/6/2017	7.97247
	7/25/2017	7.90101
	9/14/2017	7.93737
	10/3/2017	7.97247
	3/27/2018	7.90101
	10/2/2018	7.90101
	3/20/2019	8.00637
	9/17/2019	7.97247
	3/19/2020	7.90101
	9/15/2020	7.82405

From 16 baseline samples
Baseline mean = 7.95292
Baseline std Dev = 0.0671509

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	7.90101	[0, 8.07427]	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-08

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
	8/3/2016	2800
	9/19/2016	2900
	11/8/2016	3000
	1/10/2017	3200
	2/28/2017	3100
	4/18/2017	3000
	6/7/2017	2900
	7/25/2017	2900
	9/12/2017	2900
	10/4/2017	3000
	3/28/2018	2900
	10/4/2018	2500
	3/19/2019	3100
	9/17/2019	3000
	3/18/2020	3200
	9/15/2020	2700

From 16 baseline samples
Baseline mean = 2943.75
Baseline std Dev = 178.769

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	2800	[0, 3266.79]	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW-16-10

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) = 14
Maximum Baseline Concentration = 3100
Confidence Level = 93.3%
False Positive Rate = 6.7%

Baseline Measurements	Date	Value
	8/2/2016	2500
	9/19/2016	2500
	11/8/2016	2600
	1/11/2017	2800
	2/28/2017	3100
	7/26/2017	2700
	9/12/2017	2700
	10/4/2017	2800
	3/28/2018	2700
	10/3/2018	2600
	3/19/2019	2700
	9/17/2019	2900
	3/18/2020	2700
	9/15/2020	1900

Date	Count	Mean	Significant
4/9/2021	1	2600	FALSE

Parametric Prediction Interval Analysis

Intra-Well Comparison for MW-16-11A

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	2400
	9/22/2016	2500
	11/7/2016	2700
	1/11/2017	3000
	5/18/2017	2500
	7/25/2017	2600
	9/12/2017	2900
	10/4/2017	2800
	3/28/2018	2800
	10/4/2018	2400
	3/19/2019	2900
	9/17/2019	2500
	3/18/2020	2800
	9/15/2020	2300

From 14 baseline samples
Baseline mean = 2650
Baseline std Dev = 221.012

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
4/9/2021	1	2100	[0, 3055.13]	FALSE