2021 Annual Groundwater Monitoring and Corrective Action Report

River Rouge Power Plant Bottom Ash Basin
Coal Combustion Residual Unit
1 Belanger Park Drive
River Rouge, 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) River Rouge Power Plant (RRPP) Bottom Ash Basin (BAB) 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 Report for calendar year 2021 activities at the RRPP BAB CCR unit. Assessment monitoring is ongoing at the RRPP BAB CCR unit as specified in §257.95. Data that have been collected and evaluated in 2021 are presented in this report.

As documented in the January 31, 2018 *Annual Groundwater Monitoring Report for the River Rouge Power Plant,* covering calendar year 2017 activities, DTE Electric noted that boron, fluoride, and pH were observed within groundwater at downgradient monitoring well(s) with statistically significant increases (SSIs) above background limits. Therefore, DTE Electric initiated an assessment monitoring program for the RRPP BAB CCR unit pursuant to §257.95 of the CCR Rule that included sampling and analyzing groundwater within the groundwater monitoring system for all constituents listed in Appendix IV.

DTE Electric proactively constructed and has been operating a groundwater collection system since March 2, 2018 to mitigate any potential risk of migration of any water from the BAB. The installed collection system continues to control groundwater flow within the vicinity of the RRPP BAB CCR unit, and groundwater flow from the entire BAB perimeter is now directed inward toward the extraction wells. DTE Electric has continued to operate this groundwater collection system while proceeding with the prescribed steps per the CCR Rule to follow the assessment of corrective measures (ACM) process as described within this report.

As detailed in the *2018 Annual Groundwater Monitoring Report, DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit* dated January 2019 (2018 Annual Report), statistically significant groundwater concentrations were reported above the groundwater protection standards (GWPSs) for the Appendix IV constituents arsenic and lithium during the 2018 assessment monitoring events. DTE Electric proceeded with initiating an ACM per §257.96 by January 14, 2019, completed the ACM Report on April 15, 2019 and completed a Semi-Annual Progress Report on the remedy selection and design on October 15, 2019. The preferred alternative in the ACM was to close the RRPP BAB by CCR removal with offsite CCR disposal and to address the CCR-affected groundwater by continuing to operate the already in-place interim groundwater collection system. The system will be operated until the risk of migration of CCR constituents from the RRPP BAB CCR unit to receptors is effectively mitigated and groundwater data demonstrate that groundwater concentrations of Appendix IV constituents are below the relevant GWPSs.

In accordance with 40 CFR §257.101(a)(1), closure of the River Rouge BAB CCR unit was initiated 30-days after the last known receipt of waste. The RRPP ceased coal fired operations in May 2020 and the CCR closure by removal of the BAB was completed with mobilization in June 2020 and CCR removal occurring from July through September 2020 as documented in the *Bottom Ash Basin Closure Certification Report DTE Electric Company River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit, 1 Belanger Park Drive, River Rouge, Michigan* dated November 2020. After CCR removal was completed, the former BAB was repurposed into a non-CCR process water pond. Once engineering evaluations for the final groundwater remedy are completed, the final remedy for the RRPP BAB CCR unit source materials and affected groundwater will be formally selected per §257.97 at least 30-days after the public meeting required under §257.96(e) is held.

The statistical evaluation of the February 2021 Appendix IV groundwater data continue to show statistically significant groundwater concentrations above the GWPSs for arsenic and lithium at MW-16-01. The October 2021 groundwater data shows improvement in groundwater quality with only arsenic observed at MW-16-01 with a statistically significant groundwater concentration above GWPS. There were no other results reported at statistically significant concentrations above the GWPSs for the remaining Appendix IV parameters for either 2021 semiannual assessment monitoring event.

DTE Electric continued to collect groundwater samples to define the nature and extent of the potential release of CCR per §257.95(g)(1) in 2021. Concentrations of the Appendix IV parameters were below the GWPSs in all nature and extent wells located around the perimeter of the RRPP BAB, delineating the extent of the potential CCR groundwater release to be within the capture zone of the groundwater extraction system that has been operational since March 2, 2018. Therefore, as groundwater conditions are monitored post-CCR removal, the potential CCR constituents within groundwater are located entirely within the capture zone of the groundwater extraction system; as long as the groundwater extraction system is in operation, there is no potential for affected groundwater to migrate off site. In addition, all of the land that overlies the potentially affected groundwater is owned by DTE Electric.

In 2022 for the RRPP BAB CCR unit per §257.96(b), DTE Electric will continue semiannual assessment monitoring as specified in §257.95, along with annual nature and extent monitoring per §257.95(g)(1).

1.0 Introduction

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) River Rouge Power Plant (RRPP) Bottom Ash Basin (BAB). 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 Report for calendar year 2021 activities at the RRPP BAB CCR unit (2021 Annual Report). Assessment monitoring is ongoing at the RRPP BAB CCR unit as specified in §257.95. Data that have been collected and evaluated in 2021 are presented in this report.

1.1 Program Summary

As documented in the January 31, 2018 *Annual Groundwater Monitoring Report for the River Rouge Power Plant* (TRC, January 2018), covering calendar year 2017 activities, DTE Electric noted that boron, fluoride, and pH were observed within groundwater at downgradient monitoring well(s) with statistically significant increases (SSIs) above background limits. Therefore, DTE Electric initiated an assessment monitoring program for the RRPP BAB CCR unit pursuant to §257.95 of the CCR Rule that included sampling and analyzing groundwater within the groundwater monitoring system for all constituents listed in Appendix IV.

DTE Electric proactively constructed and has been operating a groundwater collection system since March 2, 2018 to mitigate any potential risk of migration of any water from the BAB. The installed collection system continues to control groundwater flow within the vicinity of the RRPP BAB CCR unit, and groundwater flow from the entire BAB perimeter is now directed inward toward the extraction wells. DTE Electric will continue to operate this groundwater collection system as the Company proceeds with the prescribed steps per the CCR Rule to follow the assessment of corrective measures process as described within this report.

As detailed in the *2018 Annual Groundwater Monitoring Report, DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit* dated January 2019 (2018 Annual Report), statistically significant groundwater concentrations were reported above the groundwater protection standards (GWPSs) for Appendix IV constituents arsenic and lithium during the 2018 assessment monitoring events. According to §257.95(g)(3), in the event that the facility determines, pursuant to §257.93(h), that a result is reported above GWPSs for one or more of the Appendix IV constituents, the facility will, within 90 days of performing the statistical analysis, initiate an Assessment of Corrective Measures (ACM) to prevent further releases, to remediate the release, and to restore the affected area.

DTE Electric proceeded with initiating an ACM per §257.96 by January 14, 2019, completed the ACM Report on April 15, 2019 and completed a Semi-Annual Progress Report on the remedy selection and design on October 15, 2019 (TRC, April 2019 and October 2019, respectively). The preferred alternative in the ACM was to close the RRPP BAB by CCR removal with offsite CCR disposal and to address the CCR-affected groundwater by continuing to operate the already in-place interim groundwater collection system. If the groundwater extraction system is selected as part of the final remedy, the system will be operated until the risk of migration of CCR constituents from the RRPP BAB CCR unit to receptors is effectively mitigated and groundwater data demonstrate that groundwater concentrations of Appendix IV constituents are below the relevant GWPSs. DTE Electric completed Semi-Annual Progress Reports on the remedy selection and design on April 15, 2020, October 15, 2020, April 15, 2021 and October 2021 (TRC April 2020 and October 2020, respectively). In addition, the RRPP BAB CCR unit Closure Plan was updated in July 2020 (TRC, July 2020).

In accordance with 40 CFR §257.101(a)(1), closure for the River Rouge BAB CCR unit was initiated 30-days after the last known receipt of waste. The RRPP ceased coal fired operations in May 2020 and the CCR closure by removal of the BAB was completed with mobilization in June 2020 and CCR removal in July through September 2020 as documented in the *Bottom Ash Basin Closure Certification Report DTE Electric Company River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit, 1 Belanger Park Drive, River Rouge, Michigan* (TRC, November 2020). After CCR removal was completed, the former BAB was repurposed into a non-CCR process water pond. Once engineering evaluations for the final groundwater remedy are completed, the final remedy for the RRPP BAB CCR unit and affected groundwater will be formally selected per §257.97 at least 30-days after the public meeting required under §257.96(e) is held.

This 2021 Annual Report presents the monitoring results and the statistical evaluation of the assessment monitoring parameters (Appendix IV to Part 257 of the CCR Rule) for the February and October 2021 assessment groundwater monitoring events for the RRPP BAB CCR unit. Assessment monitoring for these events was performed in accordance with the *CCR Groundwater Monitoring and Quality Assurance Project Plan – DTE Electric Company River Rouge Power Plant Bottom Ash Basin* (the QAPP) (TRC, July 2016; revised August 2017) and statistically evaluated per the *Groundwater Statistical Evaluation Plan – DTE Electric Company River Rouge Power Plant Coal Combustion Residual Bottom Ash Basin* (Stats Plan) (TRC, October 2017). During assessment monitoring, data are evaluated to identify Appendix IV constituents present at statistically significant levels exceeding a GWPS. In addition, nature and extent groundwater sampling data from existing monitoring wells around the BAB that was collected in October 2021 are presented in this report.

1.2 Site Overview

The RRPP BAB is located at 1 Belanger Park Drive, within the City of River Rouge in Wayne County, Michigan. The RRPP, including the BAB CCR unit, was originally constructed in the early 1950s, just northeast of the DTE Electric RRPP. The power plant property is located at the confluence of the Rouge River and the Detroit River.

The RRPP BAB was a sedimentation basin that was an incised CCR surface impoundment. The impoundment is sheet-piled around the perimeters to approximately 30 feet below ground surface (ft bgs) into the native soil. The BAB was used for receiving sluiced bottom ash and other process flow effluent pumped from the power plant to the eastern end of the BAB. After CCR removal was completed in September 2020, the former BAB was repurposed into a non-CCR process water pond. There is a sheet pile weir near the middle of the BAB that maintains the water elevation in the eastern portion to approximately 577.5 feet through gravity flow. The water in the western portion of the BAB is maintained at an elevation of no higher than 577 feet before being discharged into the Detroit River in accordance with a National Pollution Discharge Elimination System (NPDES) permit.

1.3 Geology/Hydrogeology

The RRPP BAB CCR unit is located immediately adjacent to the Rouge River to the northeast near the intersection of the Rouge River and Detroit River (Figure 1). The RRPP CCR unit is underlain initially by approximately 10 feet of surficial fill of various composition (gravel, sand, silt and clay, brick and/or concrete fragments). The fill is partially saturated in some areas, but is not continuously saturated across the RRPP, does not represent a significant, usable source of water, and is, therefore, not an aquifer. An organic layer is often encountered beneath the surficial fill that is then underlain by a silt/clay-rich unit that ranges from 3 to about 8 feet thick in the area of the BAB. Beneath the silt/clay-rich unit, there is a saturated sand and gravel unit that often coarsens from sand to gravel with depth. This coarse-grained sand and gravel unit is present from as shallow as 15 ft bgs to as deep as 25.5 ft bgs. This same coarse-grained unit is observed in most of the historical boring logs across the RRPP and appears to be a relatively continuous unit across the RRPP. Based on this information, this coarse-grained sand and gravel unit represents the uppermost aquifer present at the RRPP BAB CCR unit.

The coarse-grained sand and gravel uppermost aquifer is underlain by a more than 60-foot-thick contiguous silty clay-rich deposit that serves as a natural lower confining hydraulic barrier that isolates the uppermost aquifer from the underlying Dundee limestone that represents the next aquifer. There is no apparent hydraulic connection between the uppermost aquifer and the Dundee limestone aquifer, and the limestone aquifer is artesian.

Historically, a definitive groundwater flow direction to the northeast with an average gradient of 0.00067 foot/foot (using data from June 2016 through September 2017) within the uppermost aquifer was evident around the RRPP BAB CCR unit, with potential groundwater flow rates within the uppermost aquifer ranging from approximately 5.8 to 73 feet/year. The installation in March 2018 and continual operation of the eleven extraction wells surrounding the basin has changed the natural groundwater flow regime near the basin to an inward gradient that extends to the edge of the Rouge River. The radius of influence extends beyond all CCR monitoring wells, with the exception of the upgradient monitoring well MW-17-07 that is a background well located more than 1,500 feet up hydraulic gradient of the RRPP BAB CCR unit. Additionally, there is an eastern groundwater flow component on the southeast edge of the site toward the Detroit River (from MW-17-07 to the Detroit River). The groundwater extraction system well layout is shown on Figure 2.

2.0 Groundwater Monitoring

2.1 Monitoring Well Network

A groundwater monitoring system has been established for the RRPP BAB CCR unit as detailed in the *Groundwater Monitoring System Summary Report – DTE Electric Company River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit* (GWMS Report) (TRC, October 2017). The monitoring well network for the BAB CCR unit currently consists of five monitoring wells that are screened in the uppermost aquifer. The monitoring well locations are shown on Figure 2. Monitoring wells MW-17-06 and MW-17-07 are located south-southwest of the RRPP BAB and provide data on background groundwater quality that has not been affected by the CCR unit (total of two background wells). Monitoring wells MW-16-01 through MW-16-03 are located north-northeast, historically downgradient of the RRPP BAB CCR unit (total of three downgradient monitoring wells).

As shown on Figure 2, monitoring well MW-16-04S is used for water level measurements only. MW-16-04S was originally installed as a potential background monitoring well. However, based on concentrations of several Appendix III parameters, the proximity of the well to the BAB and the hydrogeology of the area, monitoring well MW-16-04S did not appear to be representative of background groundwater conditions; therefore, this well was excluded from the background monitoring network. As such, in June 2017, two additional monitoring wells (MW-17-06 and MW-17-07) were installed in the uppermost aquifer further upgradient on the southwest side of the RRPP main building for use as background wells (Figure 2).

In addition, eleven groundwater recovery wells were installed as part of a groundwater extraction system (Figure 2) and additional monitoring wells were added to evaluate the groundwater extraction system groundwater capture (Figure 2) in 2018. Although the groundwater extraction system has changed groundwater flow significantly in the RRPP BAB CCR unit since beginning operation in early March 2018, the three compliance monitoring wells (MW-16-01 through MW-16-03) are appropriately positioned to evaluate groundwater quality in the vicinity of the RRPP BAB CCR unit. However, while the groundwater extraction system is operational, inward hydraulic gradients are maintained toward the extraction wells and the RRPP BAB CCR unit. Therefore, monitoring wells (MW-16-01 through MW-16-03) are not immediately downgradient of the RRPP BAB CCR unit. Rather, they are on the upgradient edge of the groundwater capture zone on the downgradient side of the RRPP BAB CCR unit, adjacent to the Rouge River (Figures 3 and 4).

2.2 Semiannual Assessment Groundwater Monitoring

Per §257.95(d), all wells in the CCR unit monitoring program must be sampled at least semiannually. One semiannual event must include analysis for all parameters from Appendix III and Appendix IV and one semiannual event may include analysis for all Appendix III indicator parameters and those Appendix IV parameters that were detected during prior sampling. In addition to the Appendix III and IV parameters, field parameters including pH, dissolved oxygen, oxidation reduction potential, specific conductivity, temperature, and turbidity were collected at each well. Samples were collected and analyzed in accordance with the QAPP.

2.2.1 Data Summary

The first semiannual groundwater assessment monitoring event for 2021 was performed on February 25, 2021 and the second semiannual groundwater assessment event was performed on October 20 and 21, 2021. Both events were performed by TRC personnel and samples were analyzed by Eurofins TestAmerica (Eurofins) in accordance with the QAPP. Static water elevation data were collected at all monitoring well locations in addition to surface water measuring points MP-01 through MP-04 established along the Rouge River and Detroit River (Figure 2). Groundwater samples were collected from the two background monitoring wells and three downgradient monitoring wells for the Appendix III and Appendix IV parameters and field parameters. A summary of the groundwater data collected during both the February 2021 and October 2021 events are provided on Table 1 (static groundwater elevation data), Table 2 (field data), and Table 3 (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

Groundwater elevation data collected during the February and October 2021 sampling events show that groundwater within the uppermost aquifer in the vicinity of the RRPP BAB is being captured by the groundwater extraction well system. Similar to the groundwater sampling events reported in the 2019 annual report (TRC, January 2020) and 2020 annual report (TRC, January 2021), the series of eleven extraction wells surrounding the basin creates an inward gradient that extends to the edge of the river. The radius of influence extends beyond all CCR monitoring wells with the exception of MW-17-07 that is a background well located more than 1,500 feet up hydraulic gradient of the RRPP BAB CCR unit. Additionally, there is an eastern groundwater flow component on the southeast edge of the site toward the Detroit River (from MW-17-07 to the Detroit River). Groundwater elevations measured across the Site during the February and October 2021 sampling events are provided on Table 1 and were used to construct groundwater contour maps (Figures 3 and 4, respectively).

The current groundwater flow is similar to previous monitoring events. The average hydraulic gradients throughout the RRPP BAB CCR unit during the February and October 2021 events show a hydraulic gradient of approximately 0.005 ft/ft for both events. The gradients were calculated using the well pairs MW-17-06/MW-16-04S and MW-17-07/MW-17-06. Using the aforementioned low hydraulic conductivity of 9.5 feet/day and high hydraulic conductivity of 120 feet/day, and an assumed effective porosity of 0.4, the estimated groundwater flow velocity ranges from approximately 0.11 feet/day (approximately 39 feet/year) to approximately 1.4 feet/day (approximately 4500 feet/year) for both the February 2021 and October 2021 events.

3.0 Statistical Evaluation

Assessment monitoring is continuing at the RRPP BAB CCR unit while corrective measures are further evaluated in accordance with §257.96 and §257.97 as outlined in the ACM. The following section summarizes the statistical approach applied to assess the 2021 groundwater data in accordance with the assessment monitoring program. The statistical evaluation details are provided in Appendix C (Appendix IV Assessment Monitoring Statistical Evaluation – February 2021) and Appendix D (Appendix IV Assessment Monitoring Statistical Evaluation – October 2021).

3.1 Establishing Groundwater Protection Standards

The Appendix IV GWPSs are used to determine whether groundwater has been impacted from the RRPP BAB CCR unit by statistically comparing concentrations in the assessment monitoring wells to their respective GWPS for each Appendix IV parameter. In accordance with §257.95(h) and the Stats Plan, GWPSs were established for the Appendix IV parameters following the preliminary assessment monitoring event using nine rounds of data collected from the background monitoring wells MW-17-06 and MW-17-07 (July 2017 through April 2018). The calculation of the GWPSs is documented in the *Assessment Monitoring Data Summary and Statistical Evaluation* (Initial Assessment Monitoring Statistical Evaluation Memo) (TRC, October 2018a). The GWPS is established as the higher of the USEPA Maximum Contaminant Level (MCL) or statistically derived background level for constituents with MCLs and the higher of the USEPA Regional Screening Levels (RSLs) or background level for constituents with RSLs.

3.2 Data Comparison to Groundwater Protection Standards – First Semiannual Event (February 2021)

Consistent with the *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (Unified Guidance) (USEPA, 2009), the preferred method for comparisons to a fixed standard are confidence limits. An exceedance of the standard occurs when the 99 percent lower confidence level of the downgradient data exceeds the GWPS. Confidence intervals were established per the statistical methods detailed in the *Appendix IV Assessment Monitoring Statistical Evaluation for February 2021* technical memorandum provided in Appendix C.

For each detected constituent, the concentrations for each well were first compared directly to the GWPS. Parameter-well combinations that included a direct exceedance of the GWPS were retained for further statistical analysis using confidence limits as detailed in the Appendix C technical memorandum. The calculated upper and lower confidence limits and comparison of the lower confidence limits to the GWPSs are provided in Table 4 for the February 2021 event.

The statistical evaluation of the February 2021 Appendix IV parameters shows continued statistical exceedances of the GWPSs for:

- Arsenic at MW-16-01; and
- Lithium at MW-16-01.

No other constituents were observed at statistically significant levels exceeding the Appendix IV GWPSs during the February 2021 assessment monitoring event.

3.3 Data Comparison to Groundwater Protection Standards – Second Semiannual Event (October 2021)

Statistical analysis for the second semiannual monitoring event was performed using the same approach as the initial assessment monitoring statistical evaluation as discussed in the *Appendix IV Assessment Monitoring Statistical Evaluation for October 2021* technical memorandum provided in Appendix D. The calculated upper and lower confidence limits and comparison of the lower confidence limits to the GWPSs for the October 2021 event are provided in Table 5.

The statistical evaluation of the October 2021 Appendix IV parameters shows continued results above GWPSs for:

- Arsenic at MW-16-01.

Lithium concentrations in groundwater at monitoring well MW-16-01 continue to decrease following closure of the BAB. The lower confidence limit for lithium at MW-16-01 is below the GWPS during the second semiannual event. No other constituents were observed at statistically significant levels exceeding the Appendix IV GWPSs during the October 2021 assessment monitoring event.

4.0 Nature and Extent Groundwater Evaluation

4.1 Nature and Extent Groundwater Sampling

Per §257.95(g)(1), in the event that the facility determines, pursuant to §257.93(h), that there is a statistically significant exceedance of the GWPSs for one or more of the Appendix IV constituents, the facility must characterize the nature and extent of the release of CCR as well as any site conditions that may affect the remedy selected. As such, nature and extent groundwater sampling was completed on October 20 and 21, 2021, by TRC personnel from existing CCR network monitoring wells and the nature and extent monitoring wells installed in 2018.

DTE collected groundwater elevation data at all site monitoring wells shown on Figure 4. In addition, DTE collected groundwater samples at monitoring wells MW-16-04S, MW-17-05, MW-17-14, MW-17-15, MW-17-18, and MW-17-20. Field parameters were stabilized at each monitoring well prior to collecting groundwater samples. Field parameters are summarized in Table 2. Groundwater samples were analyzed by Eurofins for the Appendix III constituents and detected Appendix IV parameters. A summary of the analytical groundwater data collected during the October 2021 nature and extent sampling event is provided on Table 6. The laboratory analytical reports are included in Appendix A.

Following the second semiannual assessment monitoring sampling event for 2021, the nature and extent well data for the RRPP BAB collected since 2018 were evaluated using confidence interval analysis in accordance with the Stats Plan as detailed in Appendix C. Concentrations of previously detected Appendix IV parameters continue to decrease following closure of the BAB such that all of the previously detected Appendix IV parameters remain below the GWPSs in all analyzed nature and extent samples collected for the RRPP BAB CCR unit in 2021. Statistical analysis further confirms that there are no statistically significant concentrations present above the GWPS in any of the nature and extent wells when considering the most recent four monitoring events. This continues to show that the extent of the potential CCR groundwater release is delineated to be within the capture zone of the groundwater extraction system (Figures 3 and 4) that has been operational since March 2, 2018. Therefore, as long as the groundwater extraction system is in operation, there is no potential for affected groundwater to migrate off site. In addition, all of the land that overlies the potentially affected groundwater is owned by DTE Electric.

5.0 Conclusions and Recommendations

In 2017, one or more Appendix III constituents were present in one or more downgradient well(s) with SSIs above background limits (TRC, January 2018). Therefore, in April 2018, DTE Electric initiated an assessment monitoring program for the RRPP BAB CCR unit pursuant to §257.95 of the CCR Rule that included sampling and analyzing groundwater within the groundwater monitoring system for all constituents listed in Appendix IV.

In addition, in 2018, an interim presumptive remedy groundwater collection system was installed and began operation on March 2, 2018 and continues to operate and maintain hydraulic control around the RRPP BAB to mitigate any risk of migration from the RRPP BAB to groundwater. This system effectively captures groundwater in the vicinity of the RRPP BAB CCR unit and eliminates the potential for Appendix III and Appendix IV parameters to migrate off-site from the RRPP BAB CCR unit as presented in Section 4 and shown on Figures 3 and 4.

In 2018, statistically significant groundwater concentrations were reported above the GWPSs for Appendix IV constituents (arsenic and lithium) during the 2018 assessment monitoring events, prompting DTE Electric to proceed with initiating and completing the ACM in 2019. The preferred alternative in the ACM was to close the RRPP BAB by CCR removal with offsite CCR disposal and to address the CCR-affected groundwater by continuing to operate the already in place interim groundwater collection system. However, with the completion of source removal activities in 2020, and ongoing performance monitoring, the final remedy is still being evaluated.

In accordance with 40 CFR §257.101(a)(1), closure for the River Rouge BAB CCR unit was initiated 30-days after the last known receipt of waste. The RRPP ceased coal fired operations in May 2020 and the CCR closure by removal of the BAB was completed with mobilization in June 2020 and CCR removal occurring from July through September 2020 as documented in the *Bottom Ash Basin Closure Certification Report DTE Electric Company River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit, 1 Belanger Park Drive, River Rouge, Michigan* (TRC, November 2020). After CCR removal was completed, the former BAB was repurposed into a non-CCR process water pond.

In 2021, the semiannual assessment monitoring and annual nature and extent groundwater sampling continued, showing that there are no new constituents observed at statistically significant levels exceeding the Appendix IV GWPSs and the extent of the potential release of CCR continues to be well within the radius of influence of the existing groundwater extraction system during the 2021 reporting period.

Once engineering evaluations for the final groundwater remedy are completed, the final remedy for the RRPP BAB CCR unit source materials and affected groundwater will be formally selected per §257.97 at least 30-days after the public meeting required under §257.96(e) is held.

In 2022 for the RRPP BAB CCR unit per §257.96(b), DTE Electric will continue semiannual assessment monitoring as specified in §257.95, along with annual nature and extent monitoring per §257.95(g)(1).

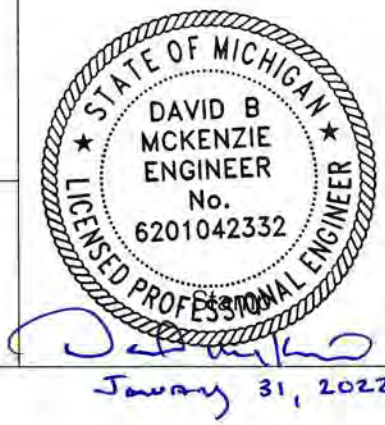
6.0 Groundwater Monitoring Report Certification

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
River Rouge Power Plant Bottom Ash Basin
River Rouge, Michigan

CERTIFICATION

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

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TRC. October 15, 2021. Semi-Annual Progress Report – Remedy Selection and Design, Rouge Power Plant Coal Combustion Residual Unit Bottom Ash Basin, River Rouge, Michigan, prepared for DTE Electric Company.

TRC. November 2020. Bottom Ash Basin Closure Certification Report DTE Electric Company River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit, 1 Belanger Park Drive, River Rouge, Michigan, prepared for DTE Electric Company.

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Tables

Table 1
Summary of Groundwater Elevation Data – February & October 2021
River Rouge Power Plant Bottom Ash Basin – RCRA CCR Monitoring Program
River Rouge, Michigan

Well ID	Date Installed	Reference Elevation	Geologic Unit of Screened Interval	Screened Interval Elevation	2/25/2021		10/20/2021	
					Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation
				ft	ft BTOC	ft	ft BTOC	ft
MP-01	6/23/2016	579.25[1]	NA	NA	NM[2]		2.34	576.91
MP-02	6/23/2016	579.15[1]	NA	NA	NM[2]		NM[2]	
MP-03	6/20/2017	578.42[1]	NA	NA	3.73	574.69	NM[2]	
MP-04	6/20/2017	579.17[1]	NA	NA	4.35	574.82	3.92	575.25
MW-16-01	6/13/2016	583.02	Sand/Silty Clay/Gravel	562.0 to 557.0	13.78	569.24	12.40	570.62
MW-16-02	6/20/2017	582.79	Silty Sand/Sand/Clay/Gravel	561.4 to 556.4	9.38	573.41	9.03	573.76
MW-16-03	6/10/2016	582.75	Sand with Gravel	561.4 to 556.4	11.55	571.20	10.52	572.23
MW-16-04S	3/17/2016	582.41	Sand and Gravel	561.2 to 556.2	13.13	569.28	12.58	569.83
MW-17-01	6/7/2017	578.47	Sand/Silty Sand	558.0 to 563.0	2.82	575.65	2.66	575.81
MW-17-02	6/7/2017	581.24	Sand	553.8 to 558.8	6.63	574.61	6.17	575.07
MW-17-03	6/8/2017	580.20	Sand/Gravel with Sand/Clay	552.5 to 557.5	5.53	574.67	5.27	574.93
MW-17-04	6/8/2017	578.01	Sand	553.5 to 558.5	4.45	573.56	3.00	575.01
MW-17-05	6/9/2017	581.61	Sand/Silty Sand with Gravel	553.6 to 558.6	13.95	567.66	14.52	567.09
MW-17-06	6/7/2017	583.01	Silty Sand/Gravel with Sand	559.9 to 554.9	9.05	573.96	8.55	574.46
MW-17-07	6/14/2017	583.05	Silt with Sand/Clay	564.0 to 559.0	7.28	575.77	6.65	576.40
MW-17-08	6/12/2017	580.52	Clay/Sand/Gravel	553.0 to 558.0	6.19	574.33	5.65[3]	574.87
MW-17-09	6/13/2017	581.05	Clay/Sand/Gravel with Sand	553.6 to 558.6	6.10	574.95	5.76	575.29
MW-17-10	6/13/2017	581.41	Silty Sand/Clay/Sand	555.7 to 560.7	5.90	575.51	5.61	575.80
MW-17-12	12/12/2017	580.51	Silty Sand/Gravel with Sand	555.5 to 560.5	9.60	570.91	8.60	571.91
MW-17-13	12/6/2017	578.90	Silty Sand/Clay/Gravel with Sand	555.9 to 560.9	NM[4]		7.38	571.52
MW-17-14	12/7/2017	579.35	Clay/Gravel with Sand	554.9 to 559.9	10.12	569.23	8.61	570.74
MW-17-15	12/8/2017	579.75	Silty Sand/Clay/Gravel with Sand	556.0 to 561.0	10.12	569.63	8.80	570.95
MW-17-16	12/7/2017	579.73	Sand with Silt/Clay with Silt/Gravel with Sand	558.2 to 567.2	8.50	571.23	7.89	571.84
MW-17-17	12/11/2017	579.35	Silty Sand/Sand with Gravel	557.8 to 562.8	7.01	572.34	6.38	572.97
MW-17-18	12/8/2017	579.00	Sand and Clay	557.7 to 562.7	9.91	569.09	10.32	568.68
MW-17-19	12/11/2017	577.99	Sand and Clay	551.4 to 556.4	5.67	572.32	5.52	572.47
MW-17-20	12/12/2017	579.40	Clay/Sand/Gravel with Sand	555.1 to 560.1	9.13	570.27	9.39	570.01

Notes:

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

ft BTOC - feet below top of casing

NA - not applicable

NM - not measured

(1) Elevation represents the point of reference used to collect surface water level measurements.

(2) No access to measuing point.

(3) Depth to water collected on October 21,2021.

(4) Monitoring well buried under frozen gravel.

Table 2
Summary of Field Data – February & October 2021
River Rouge Power Plant Bottom Ash Basin – RCRA CCR Monitoring Program
River Rouge, Michigan

Sample Location	Sample Date	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	pH (SU)	Specific Conductivity (umhos/cm)	Temperature (deg C)	Turbidity (NTU)
Background							
MW-17-06	2/25/2021	2.04	-84.3	6.7	3,845	12.7	23.3
	10/20/2021	0.23	-85.7	6.6	3,672	17.2	9.6
MW-17-07	2/25/2021	1.89	-58.2	6.7	9,641	10.3	9.0
	10/21/2021	0.79	-76.3	6.7	9,589	15.1	11.3
Downgradient							
MW-16-01	2/25/2021	1.55	-179.0	7.4	629	12.7	0.2
	10/20/2021	0.17	-133.3	7.1	514	14.7	3.7
MW-16-02	2/25/2021	1.63	-157.8	7.4	490	12.1	2.4
	10/20/2021	0.16	-141.0	7.1	580	13.8	3.9
MW-16-03	2/25/2021	1.69	-119.8	7.4	562	11.2	0.8
	10/20/2021	0.19	-110.0	7.0	616	13.2	2.3
MW-16-04S	10/21/2021	0.21	-95.2	6.7	2,021	12.9	2.7
MW-17-05	10/21/2021	0.25	-122.7	7.0	797	14.9	3.1
MW-17-06	11/11/2020	0.09	-64.0	6.7	3,437	16.0	6.9
MW-17-07	11/12/2020	0.07	-46.5	6.7	9,392	13.6	6.2
MW-17-14	10/21/2021	0.21	-79.3	7.2	473	14.0	1.6
MW-17-15	10/21/2021	0.62	-37.9	7.0	1,580	16.7	29.9
MW-17-18	10/21/2021	0.43	-74.8	7.0	2,221	15.3	4.1
MW-17-20	10/20/2021	0.22	-88.2	6.6	4,413	15.0	4.1

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.

Table 3
Summary of Groundwater Analytical Data – February & October 2021
River Rouge Power Plant Bottom Ash Basin – RCRA CCR Monitoring Program
River Rouge, Michigan

					Sample Location:	MW-17-06		MW-17-07		MW-16-01		MW-16-02		MW-16-03	
					Sample Date:	2/25/2021	10/20/2021	2/25/2021	10/21/2021	2/25/2021	10/20/2021	2/25/2021	10/20/2021	2/25/2021	10/20/2021
Constituent	Unit	EPA MCL	EPA RSL	UTL	GWPS	Background				downgradient					
Appendix III															
Boron	ug/L	NC	NA	NA	NA	390	360	600	490	760	480	360	280	79	150
Calcium	ug/L	NC	NA	NA	NA	260,000	240,000	360,000	370,000	60,000	54,000	48,000	61,000	52,000	63,000
Chloride	mg/L	250*	NA	NA	NA	690	830	2,200	2,300	45	43	34	45	58	42
Fluoride	mg/L	4	NA	NA	NA	0.39	0.42	0.47	0.45	1.4	1.5	0.54	0.53	0.24	0.24
pH, Field	su	6.5 - 8.5*	NA	NA	NA	6.7	6.6	6.7	6.7	7.4	7.1	7.4	7.1	7.4	7.0
Sulfate	mg/L	250*	NA	NA	NA	470	390	1,200	1,300	14	2.2	< 1.0	1.5	2.8	2.7
Total Dissolved Solids	mg/L	500*	NA	NA	NA	1,900	2,200	5,900	6,000	340	260	280	310	340	340
Appendix IV															
Antimony	ug/L	6	NA	2.0	6	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Arsenic	ug/L	10	NA	32	**32**	13	17	16	25	**110**	**200**	2.6	< 5.0	< 5.0	< 5.0
Barium	ug/L	2,000	NA	150	2,000	110	110	27	33	130	120	25	27	21	30
Beryllium	ug/L	4	NA	1.0	4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium	ug/L	5	NA	1.0	5	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium	ug/L	100	NA	2.0	100	< 2.0	< 5.0	< 2.0	< 5.0	< 2.0	< 5.0	< 2.0	< 5.0	< 2.0	< 5.0
Cobalt	ug/L	NC	6	23	23	1.0	< 1.0	8.0	8.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Fluoride	mg/L	4	NA	1.3	4	0.39	0.42	0.47	0.45	1.4	1.5	0.54	0.53	0.24	0.24
Lead	ug/L	NC	15	1.0	15	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Lithium	ug/L	NC	40	34	40	18	17	24	25	38	34	14	14	4.8	< 8
Mercury	ug/L	2	NA	0.20	2	< 0.20	< 0.2	< 0.20	< 0.2	< 0.20	< 0.2	< 0.20	< 0.2	< 0.20	< 0.2
Molybdenum	ug/L	NC	100	22	100	8.1	8.5	13	14	3.4	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Radium-226	pCi/L	NC	NA	NA	NA	0.763	1.47	0.178	1.53	0.314	0.62	0.381	< 0.236	0.177	1.08
Radium-228	pCi/L	NC	NA	NA	NA	1.08	1.66	0.814	0.995	0.836	< 0.503	1.37	< 0.541	< 0.392	< 0.588
Radium-226/228	pCi/L	5	NA	2.83	5	1.85	3.14	0.991	2.52	1.15	0.793	1.75	< 0.541	< 0.392	1.42
Selenium	ug/L	50	NA	5.0	50	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Thallium	ug/L	2	NA	1.0	2	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Notes:
ug/L - micrograms per liter.
mg/L - milligrams per liter.
SU - standard units; pH is a field parameter.
pCi/L - picocuries per liter.
NA - not applicable.
NC - no criteria.
MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.
RSL - Regional Screening Level from 83 FR 36435.
UTL - Upper Tolerance Limit (95%) of the background data set.
GWPS - Groundwater Protection Standard. GWPS is the higher of the MCL/RSL and UTL.
* - Secondary Maximum Contaminant Level (SMCL), EPA Secondary Drinking Water Regulations (SDWR) April, 2012.
Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR rules.

Table 4
Summary of Groundwater Protection Standard Exceedances - February 2021
River Rouge Power Plant Bottom Ash Basin – RCRA CCR Monitoring Program
River Rouge, Michigan

Appendix IV	Units	GWPS	MW-16-01		MW-16-02	
			LCL	UCL	LCL	UCL
Arsenic	ug/L	32	130	170	--	--
Lithium	ug/L	40	43	59	13	33

Notes:

ug/L - micrograms per liter.

-- - Not Applicable; well/parameter pair did not directly exceed the GWPS and was not included in further analysis.

GWPS - Groundwater Protection Standard.

UCL - Upper Confidence Limit (99%) of the downgradient data set.

LCL - Lower Confidence Limit (99%) of the downgradient data set.

Indicates a statistically significant exceedance of the GWPS. An exceedance occurs when the LCL exceeds the GWPS.

Table 5
Summary of Groundwater Protection Standard Exceedances - October 2021
River Rouge Power Plant Bottom Ash Basin – RCRA CCR Monitoring Program
River Rouge, Michigan

Appendix IV	Units	GWPS	MW-16-01	
			LCL	UCL
Arsenic	ug/L	32	130	190
Lithium	ug/L	40	39	59

Notes:

ug/L - micrograms per liter.

GWPS - Groundwater Protection Standard.

UCL - Upper Confidence Limit (99%) of the downgradient data set.

LCL - Lower Confidence Limit (99%) of the downgradient data set.

Indicates a statistically significant exceedance of the GWPS.

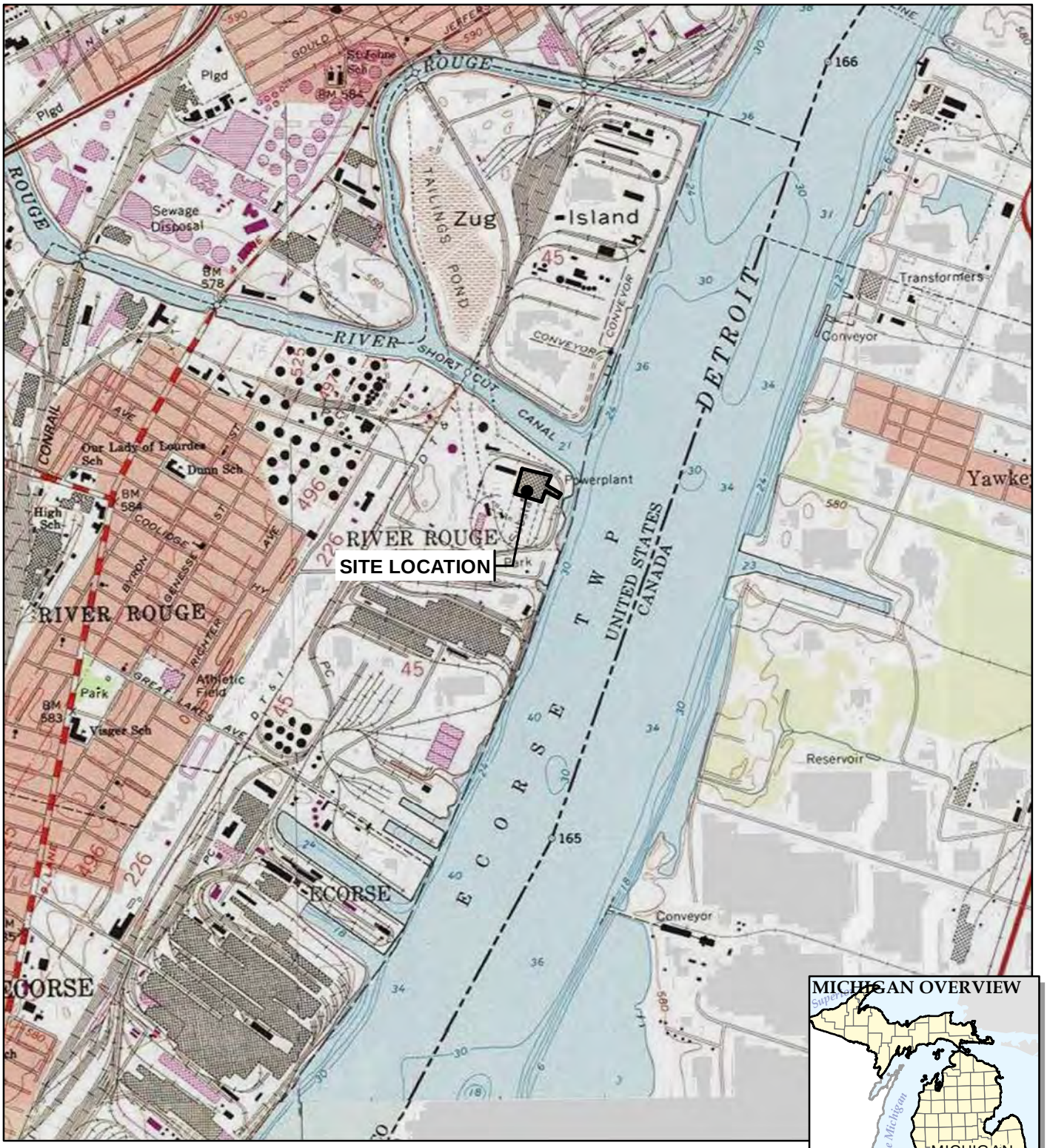
An exceedance occurs when the LCL exceeds the GWPS.

Table 6
Summary of Nature and Extent Analytical Data – October 2021
River Rouge Power Plant Bottom Ash Basin – RCRA CCR Monitoring Program
River Rouge, Michigan

						Sample Location:	MW-16-04S	MW-17-05	MW-17-14	MW-17-15	MW-17-18	MW-17-20
						Sample Date:	10/21/2021	10/21/2021	10/21/2021	10/21/2021	10/21/2021	10/20/2021
Constituent	Unit	EPA MCL	EPA RSL	UTL	GWPS	Nature and Extent						
Appendix III												
Boron	ug/L	NC	NA	NA	NA	1,100	220	210	570	360	440	
Calcium	ug/L	NC	NA	NA	NA	120,000	68,000	59,000	150,000	220,000	320,000	
Chloride	mg/L	250*	NA	NA	NA	270	59	45	430	520	1,000	
Fluoride	mg/L	4	NA	NA	NA	0.71	0.56	0.86	0.78	0.38	0.37	
pH, Field	su	6.5 - 8.5*	NA	NA	NA	6.7	7.0	7.2	7.0	7.0	6.6	
Sulfate	mg/L	250*	NA	NA	NA	200	17	3.6	28	140	380	
Total Dissolved Solids	mg/L	500*	NA	NA	NA	1,200	440	330	1,100	1,400	2,500	
Appendix IV												
Antimony	ug/L	6	NA	2.0	6	--	--	--	--	--	--	
Arsenic	ug/L	10	NA	32	32	< 5	< 5	< 5	23	< 5	< 5	
Barium	ug/L	2,000	NA	150	2,000	100	64	58	300	150	120	
Beryllium	ug/L	4	NA	1.0	4	< 1	< 1	< 1	< 1	< 1	< 1	
Cadmium	ug/L	5	NA	1.0	5	--	--	--	--	--	--	
Chromium	ug/L	100	NA	2.0	100	--	--	--	--	--	--	
Cobalt	ug/L	NC	6	23	23	< 1	< 1	< 1	< 1	< 1	1.4	
Fluoride	mg/L	4	NA	1.3	4	0.71	0.56	0.86	0.78	0.38	0.37	
Lead	ug/L	NC	15	1.0	15	--	--	--	--	--	--	
Lithium	ug/L	NC	40	34	40	36	11	< 8	30	20	29	
Mercury	ug/L	2	NA	0.20	2	--	--	--	--	--	--	
Molybdenum	ug/L	NC	100	22	100	5	< 5	< 5	< 5	< 5	< 5	
Radium-226	pCi/L	NC	NA	NA	NA	0.747	0.699	< 0.379	< 1.38	0.758	1.35	
Radium-228	pCi/L	NC	NA	NA	NA	0.634	1.41	< 0.694	2.97	1.85	2.38	
Radium-226/228	pCi/L	5	NA	2.83	5	1.38	0.712	< 0.694	< 2.11	1.09	1.03	
Selenium	ug/L	50	NA	5.0	50	--	--	--	--	--	--	
Thallium	ug/L	2	NA	1.0	2	--	--	--	--	--	--	

Notes:
ug/L - micrograms per liter.
mg/L - milligrams per liter.
SU - standard units; pH is a field parameter.
pCi/L - picocuries per liter.
NA - not applicable.
NC - no criteria.
-- - not analyzed.
MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.
RSL - Regional Screening Level from 83 FR 36435.
UTL - Upper Tolerance Limit (95%) of the background data set.
GWPS - Groundwater Protection Standard. GWPS is the higher of the MCL/RSL and UTL.
* - Secondary Maximum Contaminant Level (SMCL), EPA Secondary Drinking Water Regulations (SDWR) April, 2012.
Bold value indicates an exceedance of the GWPS. Data from downgradient monitoring wells are screened against the GWPS for evaluation purposes only. Confidence intervals will be used to determine compliance per the CCR rules.

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
RIVER ROUGE POWER PLANT
1 BELANGER PARK DRIVE
RIVER ROUGE, MICHIGAN

TITLE:
SITE LOCATION MAP

DRAWN BY:	A. FOJTIK
CHECKED BY:	B. YELEN
APPROVED BY:	V. BUENING
DATE:	JANUARY 2022
PROJ. NO.:	413591.0005
FILE:	413591-0005-001slm_af.mxd

FIGURE 1

E:\Projects\DTE\CCR_Sites\2017_265996\413591-0005-001slm_af.mxd -- Saved By: AFOJTIK on 12/23/2021, 09:23:18 AM

LEGEND

- COMPLIANCE WELLS
- MONITORING POINT
- NATURE AND EXTENT WELLS
- EXTRACTION WELL

NOTES

1. BASE MAP IMAGERY FROM GOOGLE, 03/2021.
2. WELL LOCATIONS SURVEYED BY BMJ ENGINEERS AND SURVEYORS INC. IN JUNE 2016 & JUNE 2017.

N

0 300 600 Feet

1 " = 300 '

1:3,600

PROJECT:

DTE ELECTRIC COMPANY
RIVER ROUGE POWER PLANT BOTTOM ASH BASIN
1 BELANGER PARK DRIVE
RIVER ROUGE, MICHIGAN

TITLE:

MONITORING NETWORK AND SITE PLAN

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0005
CHECKED BY:	B. YELEN		
APPROVED BY:	V. BUENING		**FIGURE 2**
DATE:	JANUARY 2022		

TRC
1540 Eisenhower Place
Ann Arbor, MI 48108-3284
Phone: 734.971.7080
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FILE NO.: 413591-0005-002_af.mxd

Plot Date: 12/23/2021, 13:43:03 PM by AFOJTIK - - LAYOUT: ANSI B(11"x17")
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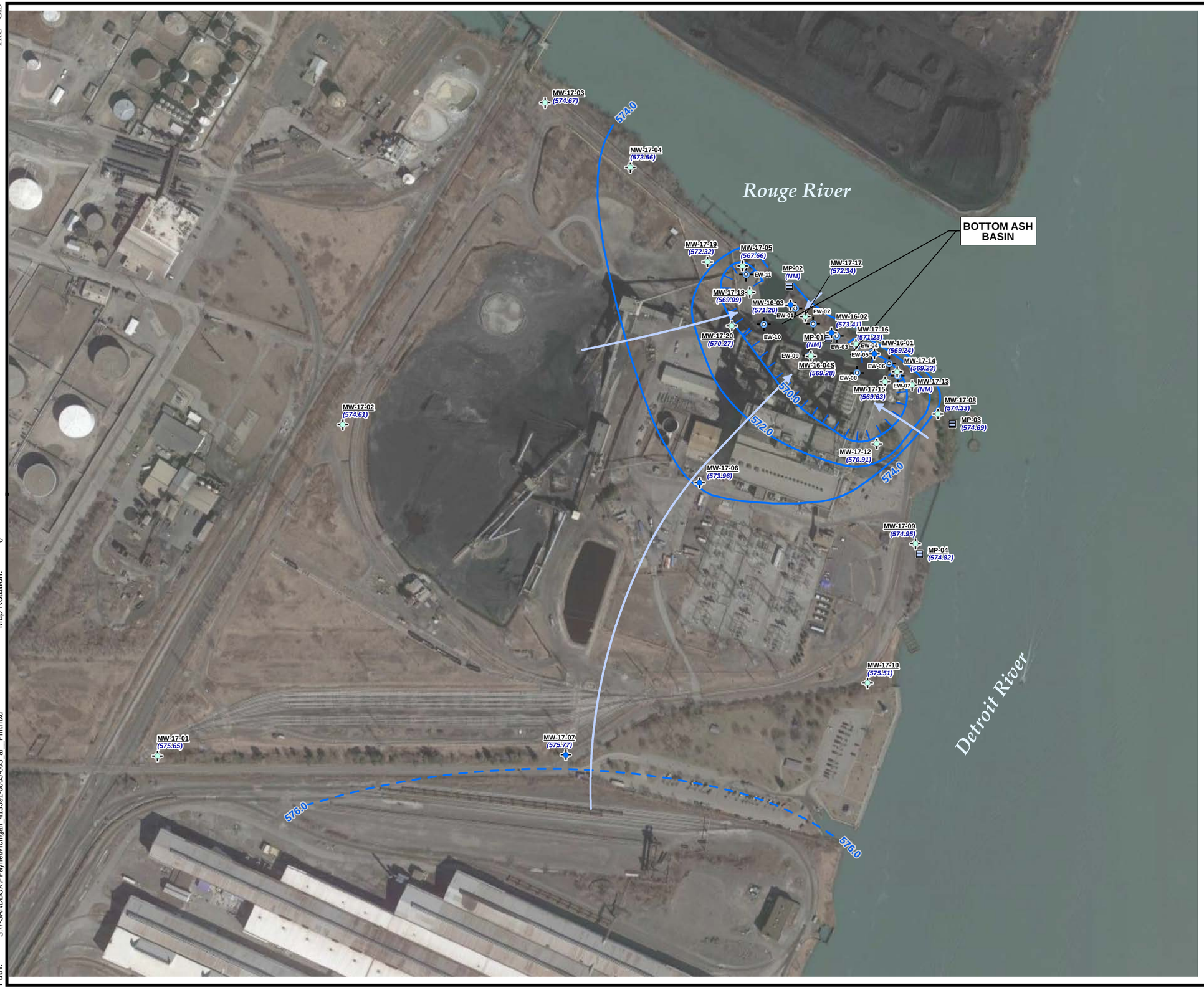
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS



LEGEND

- COMPLIANCE WELLS
- MONITORING POINT
- NATURE AND EXTENT WELLS
- EXTRACTION WELL
- GROUNDWATER CONTOUR (2' INTERVAL, DASHED WHERE INFERRED)
- INFERRED GROUNDWATER FLOW DIRECTION
- *(575.86)* ELEVATION FT (NAVD 88)

NOTES

1. BASE MAP IMAGERY FROM GOOGLE, 03/2021.
2. WELL LOCATIONS SURVEYED BY BMJ ENGINEERS AND SURVEYORS INC. IN JUNE 2016 & JUNE 2017.
3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988.

N

0 300 600 Feet

1 " = 350 '

1:4,196

PROJECT:
DTE ELECTRIC COMPANY
RIVER ROUGE POWER PLANT BOTTOM ASH BASIN
1 BELANGER PARK DRIVE
RIVER ROUGE, MICHIGAN

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP FEBRUARY 2021

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0005
CHECKED BY:	B. YELEN		
APPROVED BY:	V. BUENING		**FIGURE 3**
DATE:	JANUARY 2022		

TRC
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FILE NO.: Michigan_413591-0005-003_af__Phil.mxd

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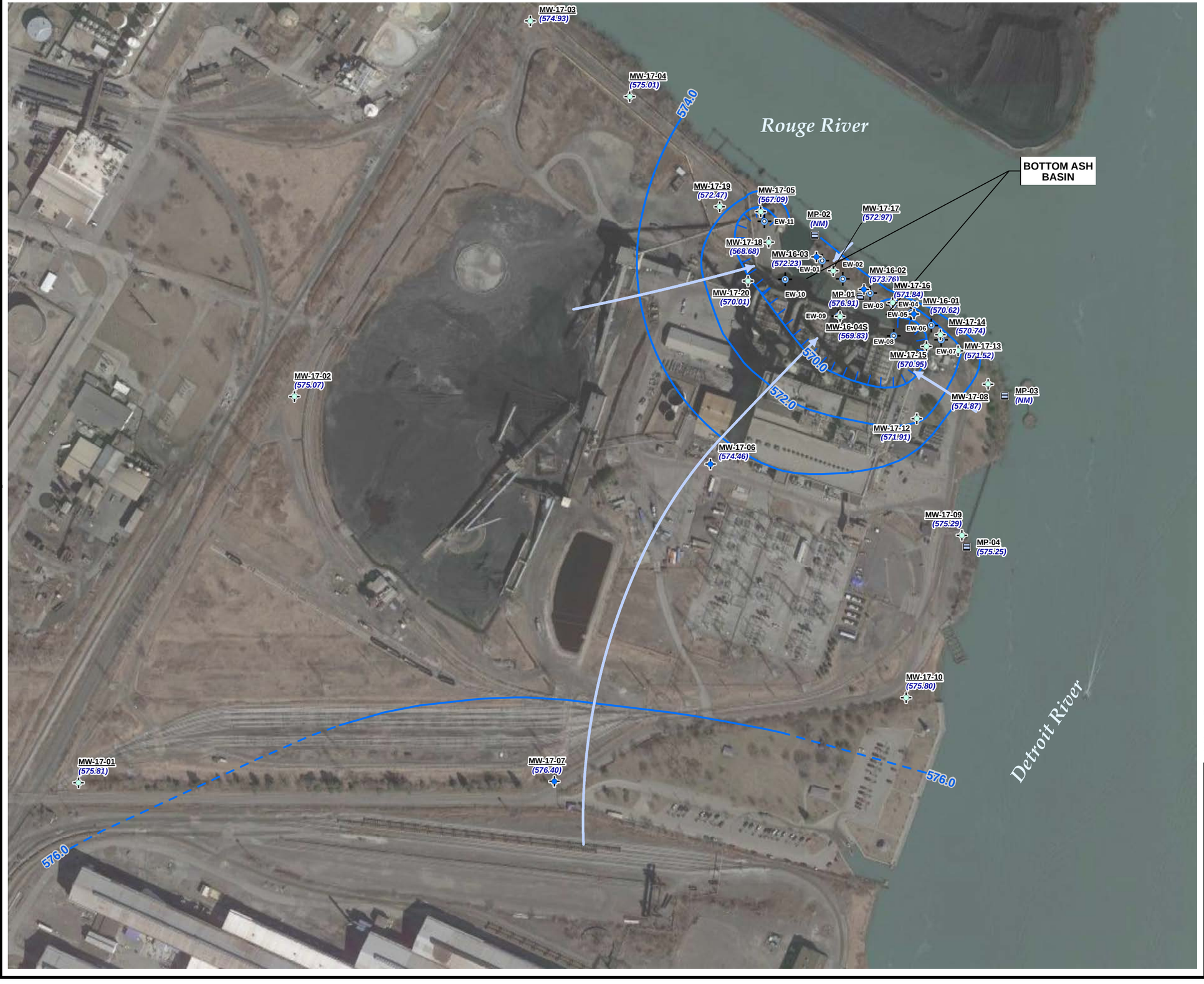

LEGEND

- COMPLIANCE WELLS
- MONITORING POINT
- NATURE AND EXTENT WELLS
- EXTRACTION WELL
- GROUNDWATER CONTOUR (2' INTERVAL, DASHED WHERE INFERRED)
- INFERRED GROUNDWATER FLOW DIRECTION
- *(575.86)* ELEVATION FT (NAVD 88)

NOTES

1. BASE MAP IMAGERY FROM GOOGLE, 03/2021.
2. WELL LOCATIONS SURVEYED BY BMJ ENGINEERS AND SURVEYORS INC. IN JUNE 2016 & JUNE 2017.
3. GROUNDWATER ELEVATIONS DISPLAYED IN FEET RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988.

N

0 300 600 Feet

1 " = 300 '

1:3,600

PROJECT:
DTE ELECTRIC COMPANY
RIVER ROUGE POWER PLANT BOTTOM ASH BASIN
1 BELANGER PARK DRIVE
RIVER ROUGE, MICHIGAN

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE MAP
OCTOBER 2021

DRAWN BY:	A. FOJTIK	PROJ NO.:	413591.0005
CHECKED BY:	B. YELEN		
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.: Michigan_413591-0005-004_af__Phil.mxd

Plot Date: 1/21/2022, 13:35:06 PM by PPAYNE -- LAYOUT: ANSI B(11"x17")
Path: S:\17-SANDBOX\PPayne\Michigan_413591-0005-004_af__Phil.mxd
Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl (Foot)
Map Rotation: 0

TRC - GIS

Appendix A
Laboratory 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: 240-145119-1
Client Project/Site: CCR DTE River Rouge Power Plant

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

Attn: Mr. Vincent Buening

Authorized for release by:
3/17/2021 7:22:08 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

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

Case Narrative

Client: TRC Environmental Corporation. Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Job ID: 240-145119-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-145119-1

Comments
The SW846 Method 9315 Radium-226, SW846 Method 9320 Radium-228 and the Ra226_Ra228 Combined Radium 226 and Radium 228 analysis were performed at the Eurofins TestAmerica St. Louis laboratory.

Receipt
The samples were received on 3/1/2021 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.5º C, 1.4º C and 2.0º C.

RAD
Methods 903.0, 9315: Radium-226 Batch 500604

Any minimum detectable concentration MDC, critical value DLC, or Safe Drinking Water Act detection limit SDWA DL is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-16-01_20210225 (240-145119-9), MW-16-02_20210225 (240-145119-10), MW-16-03_20210225 (240-145119-11), MW-17-06_20210225 (240-145119-12), MW-17-07_20210225 (240-145119-13), DUP-01_20210225 (240-145119-14), (LCS 160-500604/1-A), (MB 160-500604/22-A), (180-117674-B-2-A) and (180-117674-H-2-A DU)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-16-01_20210225 (240-145119-9), MW-16-02_20210225 (240-145119-10), MW-16-03_20210225 (240-145119-11), MW-17-06_20210225 (240-145119-12), MW-17-07_20210225 (240-145119-13), DUP-01_20210225 (240-145119-14), (LCS 160-500607/1-A), (MB 160-500607/22-A), (180-117674-B-2-B) and (180-117674-H-2-B DU)

The following samples were prepared at a reduced aliquot due to matrix: MW-16-01_20210225 (240-145119-9), MW-16-02_20210225 (240-145119-10), MW-17-06_20210225 (240-145119-12), MW-17-07_20210225 (240-145119-13) and DUP-01_20210225 (240-145119-14). The samples were yellow in color, and cloudy.

The following samples were prepared at a reduced aliquot due to matrix: MW-16-01_20210225 (240-145119-9), MW-16-02_20210225 (240-145119-10), MW-17-06_20210225 (240-145119-12), MW-17-07_20210225 (240-145119-13) and DUP-01_20210225 (240-145119-14). The samples were yellow in color, and cloudy.

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

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. Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	SW846	TAL CAN
9056A	Anions, Ion Chromatography	SW846	TAL CAN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CAN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN
7470A	Preparation, Mercury	SW846	TAL CAN
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None
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.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-145119-1	EW-05_20210225	Water	02/25/21 12:10	03/01/21 08:00	
240-145119-2	EW-06_20210225	Water	02/25/21 12:17	03/01/21 08:00	
240-145119-3	EW-07_20210225	Water	02/25/21 12:28	03/01/21 08:00	
240-145119-4	EW-08_20210225	Water	02/25/21 13:00	03/01/21 08:00	
240-145119-5	EW-09_20210225	Water	02/25/21 12:47	03/01/21 08:00	
240-145119-6	EW-10_20210225	Water	02/25/21 13:13	03/01/21 08:00	
240-145119-7	EW-11_20210225	Water	02/25/21 13:20	03/01/21 08:00	
240-145119-8	DUP-02_20210225	Water	02/25/21 00:00	03/01/21 08:00	
240-145119-9	MW-16-01_20210225	Water	02/25/21 12:31	03/01/21 08:00	
240-145119-10	MW-16-02_20210225	Water	02/25/21 11:18	03/01/21 08:00	
240-145119-11	MW-16-03_20210225	Water	02/25/21 10:14	03/01/21 08:00	
240-145119-12	MW-17-06_20210225	Water	02/25/21 14:20	03/01/21 08:00	
240-145119-13	MW-17-07_20210225	Water	02/25/21 15:48	03/01/21 08:00	
240-145119-14	DUP-01_20210225	Water	02/25/21 00:00	03/01/21 08:00	
240-145119-15	EW-01_20210225	Water	02/25/21 10:30	03/01/21 08:00	
240-145119-16	EW-03_20210225	Water	02/25/21 11:30	03/01/21 08:00	
240-145119-17	EW-04_20210225	Water	02/25/21 11:37	03/01/21 08:00	

Detection Summary

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

Job ID: 240-145119-1

Client Sample ID: EW-05_20210225 — Lab Sample ID: 240-145119-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	79		5.0	5.0	ug/L	1		6020	Total Recoverable
Lithium	59		8.0	8.0	ug/L	1		6020	Total Recoverable

Client Sample ID: EW-06_20210225 — Lab Sample ID: 240-145119-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	11		5.0	5.0	ug/L	1		6020	Total Recoverable
Lithium	20		8.0	8.0	ug/L	1		6020	Total Recoverable

Client Sample ID: EW-07_20210225 — Lab Sample ID: 240-145119-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	11		8.0	8.0	ug/L	1		6020	Total Recoverable

Client Sample ID: EW-08_20210225 — Lab Sample ID: 240-145119-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	24		5.0	5.0	ug/L	1		6020	Total Recoverable
Lithium	34		8.0	8.0	ug/L	1		6020	Total Recoverable

Client Sample ID: EW-09_20210225 — Lab Sample ID: 240-145119-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	24		8.0	8.0	ug/L	1		6020	Total Recoverable

Client Sample ID: EW-10_20210225 — Lab Sample ID: 240-145119-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	24		8.0	8.0	ug/L	1		6020	Total Recoverable

Client Sample ID: EW-11_20210225 — Lab Sample ID: 240-145119-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	26		8.0	8.0	ug/L	1		6020	Total Recoverable

Client Sample ID: DUP-02_20210225 — Lab Sample ID: 240-145119-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	10		8.0	8.0	ug/L	1		6020	Total Recoverable

Client Sample ID: MW-16-01_20210225 — Lab Sample ID: 240-145119-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	760		100	23	ug/L	1		6010B	Total Recoverable
Arsenic	110		5.0	0.75	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Detection Summary

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

Job ID: 240-145119-1

Client Sample ID: MW-16-01_20210225 (Continued) — Lab Sample ID: 240-145119-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	130		5.0	2.2	ug/L	1		6020	Total Recoverable
Calcium	60000		1000	580	ug/L	1		6020	Total Recoverable
Iron	2000		100	47	ug/L	1		6020	Total Recoverable
Lithium	38		8.0	1.7	ug/L	1		6020	Total Recoverable
Magnesium	19000		1000	200	ug/L	1		6020	Total Recoverable
Manganese	82		5.0	2.1	ug/L	1		6020	Total Recoverable
Molybdenum	3.4	J	5.0	1.1	ug/L	1		6020	Total Recoverable
Potassium	5800		1000	220	ug/L	1		6020	Total Recoverable
Sodium	32000		1000	330	ug/L	1		6020	Total Recoverable
Chloride	45		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.4		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	340		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02_20210225 — Lab Sample ID: 240-145119-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	360		100	23	ug/L	1		6010B	Total Recoverable
Arsenic	2.6	J	5.0	0.75	ug/L	1		6020	Total Recoverable
Barium	25		5.0	2.2	ug/L	1		6020	Total Recoverable
Calcium	48000		1000	580	ug/L	1		6020	Total Recoverable
Iron	700		100	47	ug/L	1		6020	Total Recoverable
Lithium	14		8.0	1.7	ug/L	1		6020	Total Recoverable
Magnesium	14000		1000	200	ug/L	1		6020	Total Recoverable
Manganese	210		5.0	2.1	ug/L	1		6020	Total Recoverable
Potassium	3300		1000	220	ug/L	1		6020	Total Recoverable
Sodium	24000		1000	330	ug/L	1		6020	Total Recoverable
Chloride	34		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.54		0.050	0.050	mg/L	1		9056A	Total/NA
Total Dissolved Solids	280		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03_20210225 — Lab Sample ID: 240-145119-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	79	J	100	23	ug/L	1		6010B	Total Recoverable
Barium	21		5.0	2.2	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16-03_20210225 (Continued) Lab Sample ID: 240-145119-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	52000		1000	580	ug/L	1		6020	Total Recoverable
Iron	95	J	100	47	ug/L	1		6020	Total Recoverable
Lithium	4.8	J	8.0	1.7	ug/L	1		6020	Total Recoverable
Magnesium	15000		1000	200	ug/L	1		6020	Total Recoverable
Manganese	310		5.0	2.1	ug/L	1		6020	Total Recoverable
Potassium	2100		1000	220	ug/L	1		6020	Total Recoverable
Sodium	32000		1000	330	ug/L	1		6020	Total Recoverable
Chloride	58		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.24		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	2.8		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	340		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-06_20210225 Lab Sample ID: 240-145119-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	390		100	23	ug/L	1		6010B	Total Recoverable
Arsenic	13		5.0	0.75	ug/L	1		6020	Total Recoverable
Barium	110		5.0	2.2	ug/L	1		6020	Total Recoverable
Calcium	260000		1000	580	ug/L	1		6020	Total Recoverable
Cobalt	1.0		1.0	0.19	ug/L	1		6020	Total Recoverable
Iron	13000		100	47	ug/L	1		6020	Total Recoverable
Lithium	18		8.0	1.7	ug/L	1		6020	Total Recoverable
Magnesium	140000		1000	200	ug/L	1		6020	Total Recoverable
Manganese	290		5.0	2.1	ug/L	1		6020	Total Recoverable
Molybdenum	8.1		5.0	1.1	ug/L	1		6020	Total Recoverable
Nickel	1.7	J	2.0	1.5	ug/L	1		6020	Total Recoverable
Potassium	2400		1000	220	ug/L	1		6020	Total Recoverable
Sodium	300000		1000	330	ug/L	1		6020	Total Recoverable
Chloride	690		10	10	mg/L	10		9056A	Total/NA
Fluoride	0.39		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	470		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	1900		40	40	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation.
Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-17-07_20210225
Lab Sample ID: 240-145119-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	600		100	23	ug/L	1		6010B	Total Recoverable
Arsenic	16		5.0	0.75	ug/L	1		6020	Total Recoverable
Barium	27		5.0	2.2	ug/L	1		6020	Total Recoverable
Calcium	360000		1000	580	ug/L	1		6020	Total Recoverable
Cobalt	8.0		1.0	0.19	ug/L	1		6020	Total Recoverable
Iron	14000		100	47	ug/L	1		6020	Total Recoverable
Lithium	24		8.0	1.7	ug/L	1		6020	Total Recoverable
Magnesium	160000		1000	200	ug/L	1		6020	Total Recoverable
Manganese	790		5.0	2.1	ug/L	1		6020	Total Recoverable
Molybdenum	13		5.0	1.1	ug/L	1		6020	Total Recoverable
Nickel	2.3		2.0	1.5	ug/L	1		6020	Total Recoverable
Potassium	2000		1000	220	ug/L	1		6020	Total Recoverable
Sodium	1400000		1000	330	ug/L	1		6020	Total Recoverable
Chloride	2200		25	25	mg/L	25		9056A	Total/NA
Fluoride	0.47		0.25	0.25	mg/L	5		9056A	Total/NA
Sulfate	1200		25	25	mg/L	25		9056A	Total/NA
Total Dissolved Solids	5900		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01_20210225
Lab Sample ID: 240-145119-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	76	J	100	23	ug/L	1		6010B	Total Recoverable
Barium	21		5.0	2.2	ug/L	1		6020	Total Recoverable
Calcium	50000		1000	580	ug/L	1		6020	Total Recoverable
Iron	95	J	100	47	ug/L	1		6020	Total Recoverable
Lithium	5.8	J	8.0	1.7	ug/L	1		6020	Total Recoverable
Magnesium	15000		1000	200	ug/L	1		6020	Total Recoverable
Manganese	300		5.0	2.1	ug/L	1		6020	Total Recoverable
Potassium	2100		1000	220	ug/L	1		6020	Total Recoverable
Sodium	32000		1000	330	ug/L	1		6020	Total Recoverable
Chloride	58		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.23		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	2.8		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	280		10	10	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 River Rouge Power Plant

Job ID: 240-145119-1

Client Sample ID: EW-01_20210225 — Lab Sample ID: 240-145119-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	9.6		8.0	8.0	ug/L	1		6020	Total Recoverable

Client Sample ID: EW-03_20210225 — Lab Sample ID: 240-145119-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	420		5.0	5.0	ug/L	1		6020	Total Recoverable
Lithium	44		8.0	8.0	ug/L	1		6020	Total Recoverable

Client Sample ID: EW-04_20210225 — Lab Sample ID: 240-145119-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	120		5.0	5.0	ug/L	1		6020	Total Recoverable
Lithium	81		8.0	8.0	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: TRC Environmental Corporation.
Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: EW-05_20210225
Lab Sample ID: 240-145119-1
Date Collected: 02/25/21 12:10
Matrix: Water
Date Received: 03/01/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	79		5.0	5.0	ug/L		03/02/21 14:00	03/03/21 17:25	1
Lithium	59		8.0	8.0	ug/L		03/02/21 14:00	03/03/21 17:25	1

Client Sample Results

Client: TRC Environmental Corporation.
Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: EW-06_20210225
Lab Sample ID: 240-145119-2
Date Collected: 02/25/21 12:17
Matrix: Water
Date Received: 03/01/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	11		5.0	5.0	ug/L		03/02/21 14:00	03/03/21 17:28	1
Lithium	20		8.0	8.0	ug/L		03/02/21 14:00	03/03/21 17:28	1

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

Job ID: 240-145119-1

Client Sample ID: EW-07_20210225
Date Collected: 02/25/21 12:28
Date Received: 03/01/21 08:00

Lab Sample ID: 240-145119-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		03/02/21 14:00	03/03/21 17:30	1
Lithium	11		8.0	8.0	ug/L		03/02/21 14:00	03/03/21 17:30	1

Client Sample Results

Client: TRC Environmental Corporation.
Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: EW-08_20210225
Lab Sample ID: 240-145119-4
Date Collected: 02/25/21 13:00
Matrix: Water
Date Received: 03/01/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	24		5.0	5.0	ug/L		03/02/21 14:00	03/03/21 17:33	1
Lithium	34		8.0	8.0	ug/L		03/02/21 14:00	03/03/21 17:33	1

Client: TRC Environmental Corporation.
Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: EW-09_20210225
Lab Sample ID: 240-145119-5
Date Collected: 02/25/21 12:47
Matrix: Water
Date Received: 03/01/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		03/02/21 14:00	03/03/21 17:35	1
Lithium	**24**		8.0	8.0	ug/L		03/02/21 14:00	03/03/21 17:35	1

Client Sample Results

Client: TRC Environmental Corporation.
Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: EW-10_20210225
Lab Sample ID: 240-145119-6
Date Collected: 02/25/21 13:13
Matrix: Water
Date Received: 03/01/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		03/02/21 14:00	03/03/21 17:38	1
Lithium	**24**		8.0	8.0	ug/L		03/02/21 14:00	03/03/21 17:38	1

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

Job ID: 240-145119-1

Client Sample ID: EW-11_20210225
Date Collected: 02/25/21 13:20
Date Received: 03/01/21 08:00

Lab Sample ID: 240-145119-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		03/02/21 14:00	03/03/21 17:40	1
Lithium	**26**		8.0	8.0	ug/L		03/02/21 14:00	03/03/21 17:40	1

Client Sample Results

Client: TRC Environmental Corporation. Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: DUP-02_20210225 Lab Sample ID: 240-145119-8

Date Collected: 02/25/21 00:00 **Matrix: Water**
Date Received: 03/01/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		03/02/21 14:00	03/03/21 17:43	1
Lithium	**10**		8.0	8.0	ug/L		03/02/21 14:00	03/03/21 17:43	1

Client Sample ID: MW-16-01_20210225
Lab Sample ID: 240-145119-9

Date Collected: 02/25/21 12:31
Matrix: Water
Date Received: 03/01/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**760**		100	23	ug/L		03/02/21 14:00	03/03/21 12:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	0.57	ug/L		03/02/21 14:00	03/03/21 14:30	1
Arsenic	**110**		5.0	0.75	ug/L		03/02/21 14:00	03/03/21 14:30	1
Barium	**130**		5.0	2.2	ug/L		03/02/21 14:00	03/03/21 14:30	1
Beryllium	1.0	U	1.0	0.31	ug/L		03/02/21 14:00	03/03/21 14:30	1
Cadmium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 14:30	1
Calcium	**60000**		1000	580	ug/L		03/02/21 14:00	03/03/21 14:30	1
Chromium	2.0	U	2.0	0.98	ug/L		03/02/21 14:00	03/03/21 14:30	1
Cobalt	1.0	U	1.0	0.19	ug/L		03/02/21 14:00	03/03/21 14:30	1
Copper	2.0	U	2.0	1.7	ug/L		03/02/21 14:00	03/03/21 14:30	1
Iron	**2000**		100	47	ug/L		03/02/21 14:00	03/03/21 14:30	1
Lead	1.0	U	1.0	0.45	ug/L		03/02/21 14:00	03/03/21 14:30	1
Lithium	**38**		8.0	1.7	ug/L		03/02/21 14:00	03/03/21 14:30	1
Magnesium	**19000**		1000	200	ug/L		03/02/21 14:00	03/03/21 14:30	1
Manganese	**82**		5.0	2.1	ug/L		03/02/21 14:00	03/03/21 14:30	1
Molybdenum	**3.4**	**J**	5.0	1.1	ug/L		03/02/21 14:00	03/03/21 14:30	1
Nickel	2.0	U	2.0	1.5	ug/L		03/02/21 14:00	03/03/21 14:30	1
Potassium	**5800**		1000	220	ug/L		03/02/21 14:00	03/03/21 14:30	1
Selenium	5.0	U	5.0	0.89	ug/L		03/02/21 14:00	03/03/21 14:30	1
Silver	1.0	U	1.0	0.053	ug/L		03/02/21 14:00	03/03/21 14:30	1
Sodium	**32000**		1000	330	ug/L		03/02/21 14:00	03/03/21 14:30	1
Thallium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 14:30	1
Vanadium	5.0	U	5.0	0.82	ug/L		03/02/21 14:00	03/03/21 14:30	1
Zinc	20	U	20	15	ug/L		03/02/21 14:00	03/03/21 14:30	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		03/02/21 10:30	03/02/21 14:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**45**		1.0	1.0	mg/L			03/06/21 07:42	1
Fluoride	**1.4**		0.050	0.050	mg/L			03/06/21 07:42	1
Sulfate	**14**		1.0	1.0	mg/L			03/06/21 07:42	1
Total Dissolved Solids	**340**		10	10	mg/L			03/02/21 08:55	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.314**		0.147	0.150	1.00	0.163	pCi/L	03/03/21 14:22	03/16/21 12:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.6*		*40 - 110*	*03/03/21 14:22*	*03/16/21 12:26*	*1*

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

Job ID: 240-145119-1

Client Sample ID: MW-16-01_20210225
Date Collected: 02/25/21 12:31
Date Received: 03/01/21 08:00

Lab Sample ID: 240-145119-9
Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.836		0.361	0.369	1.00	0.505	pCi/L	03/03/21 15:09	03/11/21 13:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.6*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:28*	*1*
Y Carrier	*86.0*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:28*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.15		0.390	0.398	5.00	0.505	pCi/L		03/17/21 13:47	1

Client: TRC Environmental Corporation.
Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-16-02_20210225
Lab Sample ID: 240-145119-10
Date Collected: 02/25/21 11:18
Matrix: Water
Date Received: 03/01/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**360**		100	23	ug/L		03/02/21 14:00	03/03/21 12:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	0.57	ug/L		03/02/21 14:00	03/03/21 14:32	1
Arsenic	**2.6**	**J**	5.0	0.75	ug/L		03/02/21 14:00	03/03/21 14:32	1
Barium	**25**		5.0	2.2	ug/L		03/02/21 14:00	03/03/21 14:32	1
Beryllium	1.0	U	1.0	0.31	ug/L		03/02/21 14:00	03/03/21 14:32	1
Cadmium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 14:32	1
Calcium	**48000**		1000	580	ug/L		03/02/21 14:00	03/03/21 14:32	1
Chromium	2.0	U	2.0	0.98	ug/L		03/02/21 14:00	03/03/21 14:32	1
Cobalt	1.0	U	1.0	0.19	ug/L		03/02/21 14:00	03/03/21 14:32	1
Copper	2.0	U	2.0	1.7	ug/L		03/02/21 14:00	03/03/21 14:32	1
Iron	**700**		100	47	ug/L		03/02/21 14:00	03/03/21 14:32	1
Lead	1.0	U	1.0	0.45	ug/L		03/02/21 14:00	03/03/21 14:32	1
Lithium	**14**		8.0	1.7	ug/L		03/02/21 14:00	03/03/21 14:32	1
Magnesium	**14000**		1000	200	ug/L		03/02/21 14:00	03/03/21 14:32	1
Manganese	**210**		5.0	2.1	ug/L		03/02/21 14:00	03/03/21 14:32	1
Molybdenum	5.0	U	5.0	1.1	ug/L		03/02/21 14:00	03/03/21 14:32	1
Nickel	2.0	U	2.0	1.5	ug/L		03/02/21 14:00	03/03/21 14:32	1
Potassium	**3300**		1000	220	ug/L		03/02/21 14:00	03/03/21 14:32	1
Selenium	5.0	U	5.0	0.89	ug/L		03/02/21 14:00	03/03/21 14:32	1
Silver	1.0	U	1.0	0.053	ug/L		03/02/21 14:00	03/03/21 14:32	1
Sodium	**24000**		1000	330	ug/L		03/02/21 14:00	03/03/21 14:32	1
Thallium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 14:32	1
Vanadium	5.0	U	5.0	0.82	ug/L		03/02/21 14:00	03/03/21 14:32	1
Zinc	20	U	20	15	ug/L		03/02/21 14:00	03/03/21 14:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		03/02/21 10:30	03/02/21 14:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**34**		1.0	1.0	mg/L			03/06/21 08:04	1
Fluoride	**0.54**		0.050	0.050	mg/L			03/06/21 08:04	1
Sulfate	1.0	U	1.0	1.0	mg/L			03/06/21 08:04	1
Total Dissolved Solids	**280**		10	10	mg/L			03/02/21 08:55	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.381**		0.167	0.170	1.00	0.196	pCi/L	03/03/21 14:22	03/16/21 12:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.9*		*40 - 110*	*03/03/21 14:22*	*03/16/21 12:27*	*1*

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

Job ID: 240-145119-1

Client Sample ID: MW-16-02_20210225
Date Collected: 02/25/21 11:18
Date Received: 03/01/21 08:00

Lab Sample ID: 240-145119-10
Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.37		0.432	0.450	1.00	0.567	pCi/L	03/03/21 15:09	03/11/21 13:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.9*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:28*	*1*
Y Carrier	*87.1*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:28*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.75		0.463	0.481	5.00	0.567	pCi/L		03/17/21 13:47	1

Client Sample ID: MW-16-03_20210225 Lab Sample ID: 240-145119-11

Date Collected: 02/25/21 10:14 **Matrix: Water**
Date Received: 03/01/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**79**	**J**	100	23	ug/L		03/02/21 14:00	03/03/21 12:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	0.57	ug/L		03/02/21 14:00	03/03/21 14:34	1
Arsenic	5.0	U	5.0	0.75	ug/L		03/02/21 14:00	03/03/21 14:34	1
Barium	**21**		5.0	2.2	ug/L		03/02/21 14:00	03/03/21 14:34	1
Beryllium	1.0	U	1.0	0.31	ug/L		03/02/21 14:00	03/03/21 14:34	1
Cadmium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 14:34	1
Calcium	**52000**		1000	580	ug/L		03/02/21 14:00	03/03/21 14:34	1
Chromium	2.0	U	2.0	0.98	ug/L		03/02/21 14:00	03/03/21 14:34	1
Cobalt	1.0	U	1.0	0.19	ug/L		03/02/21 14:00	03/03/21 14:34	1
Copper	2.0	U	2.0	1.7	ug/L		03/02/21 14:00	03/03/21 14:34	1
Iron	**95**	**J**	100	47	ug/L		03/02/21 14:00	03/03/21 14:34	1
Lead	1.0	U	1.0	0.45	ug/L		03/02/21 14:00	03/03/21 14:34	1
Lithium	**4.8**	**J**	8.0	1.7	ug/L		03/02/21 14:00	03/03/21 14:34	1
Magnesium	**15000**		1000	200	ug/L		03/02/21 14:00	03/03/21 14:34	1
Manganese	**310**		5.0	2.1	ug/L		03/02/21 14:00	03/03/21 14:34	1
Molybdenum	5.0	U	5.0	1.1	ug/L		03/02/21 14:00	03/03/21 14:34	1
Nickel	2.0	U	2.0	1.5	ug/L		03/02/21 14:00	03/03/21 14:34	1
Potassium	**2100**		1000	220	ug/L		03/02/21 14:00	03/03/21 14:34	1
Selenium	5.0	U	5.0	0.89	ug/L		03/02/21 14:00	03/03/21 14:34	1
Silver	1.0	U	1.0	0.053	ug/L		03/02/21 14:00	03/03/21 14:34	1
Sodium	**32000**		1000	330	ug/L		03/02/21 14:00	03/03/21 14:34	1
Thallium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 14:34	1
Vanadium	5.0	U	5.0	0.82	ug/L		03/02/21 14:00	03/03/21 14:34	1
Zinc	20	U	20	15	ug/L		03/02/21 14:00	03/03/21 14:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		03/02/21 10:30	03/02/21 14:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**58**		1.0	1.0	mg/L			03/06/21 09:09	1
Fluoride	**0.24**		0.050	0.050	mg/L			03/06/21 09:09	1
Sulfate	**2.8**		1.0	1.0	mg/L			03/06/21 09:09	1
Total Dissolved Solids	**340**		10	10	mg/L			03/02/21 08:55	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.177**		0.108	0.110	1.00	0.149	pCi/L	03/03/21 14:22	03/16/21 12:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.0*		*40 - 110*	*03/03/21 14:22*	*03/16/21 12:28*	*1*

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

Job ID: 240-145119-1

Client Sample ID: MW-16-03_20210225
Date Collected: 02/25/21 10:14
Date Received: 03/01/21 08:00

Lab Sample ID: 240-145119-11
Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.000	U	0.218	0.218	1.00	0.392	pCi/L	03/03/21 15:09	03/11/21 13:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.0*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:28*	*1*
Y Carrier	*88.2*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:28*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.177	U	0.243	0.244	5.00	0.392	pCi/L		03/17/21 13:47	1

Client Sample ID: MW-17-06_20210225
Date Collected: 02/25/21 14:20
Date Received: 03/01/21 08:00

Lab Sample ID: 240-145119-12
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**390**		100	23	ug/L		03/02/21 14:00	03/03/21 12:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	0.57	ug/L		03/02/21 14:00	03/03/21 14:37	1
Arsenic	**13**		5.0	0.75	ug/L		03/02/21 14:00	03/03/21 14:37	1
Barium	**110**		5.0	2.2	ug/L		03/02/21 14:00	03/03/21 14:37	1
Beryllium	1.0	U	1.0	0.31	ug/L		03/02/21 14:00	03/03/21 14:37	1
Cadmium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 14:37	1
Calcium	**260000**		1000	580	ug/L		03/02/21 14:00	03/03/21 14:37	1
Chromium	2.0	U	2.0	0.98	ug/L		03/02/21 14:00	03/03/21 14:37	1
Cobalt	**1.0**		1.0	0.19	ug/L		03/02/21 14:00	03/03/21 14:37	1
Copper	2.0	U	2.0	1.7	ug/L		03/02/21 14:00	03/03/21 14:37	1
Iron	**13000**		100	47	ug/L		03/02/21 14:00	03/03/21 14:37	1
Lead	1.0	U	1.0	0.45	ug/L		03/02/21 14:00	03/03/21 14:37	1
Lithium	**18**		8.0	1.7	ug/L		03/02/21 14:00	03/03/21 14:37	1
Magnesium	**140000**		1000	200	ug/L		03/02/21 14:00	03/03/21 14:37	1
Manganese	**290**		5.0	2.1	ug/L		03/02/21 14:00	03/03/21 14:37	1
Molybdenum	**8.1**		5.0	1.1	ug/L		03/02/21 14:00	03/03/21 14:37	1
Nickel	**1.7**	**J**	2.0	1.5	ug/L		03/02/21 14:00	03/03/21 14:37	1
Potassium	**2400**		1000	220	ug/L		03/02/21 14:00	03/03/21 14:37	1
Selenium	5.0	U	5.0	0.89	ug/L		03/02/21 14:00	03/03/21 14:37	1
Silver	1.0	U	1.0	0.053	ug/L		03/02/21 14:00	03/03/21 14:37	1
Sodium	**300000**		1000	330	ug/L		03/02/21 14:00	03/03/21 14:37	1
Thallium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 14:37	1
Vanadium	5.0	U	5.0	0.82	ug/L		03/02/21 14:00	03/03/21 14:37	1
Zinc	20	U	20	15	ug/L		03/02/21 14:00	03/03/21 14:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		03/02/21 10:30	03/02/21 14:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**690**		10	10	mg/L			03/06/21 09:52	10
Fluoride	**0.39**		0.050	0.050	mg/L			03/06/21 09:31	1
Sulfate	**470**		10	10	mg/L			03/06/21 09:52	10
Total Dissolved Solids	**1900**		40	40	mg/L			03/04/21 08:59	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.763**		0.204	0.216	1.00	0.176	pCi/L	03/03/21 14:22	03/16/21 12:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.3*		*40 - 110*	*03/03/21 14:22*	*03/16/21 12:28*	*1*

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

Job ID: 240-145119-1

Client Sample ID: MW-17-06_20210225

Date Collected: 02/25/21 14:20
Date Received: 03/01/21 08:00

Lab Sample ID: 240-145119-12

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.08		0.365	0.379	1.00	0.488	pCi/L	03/03/21 15:09	03/11/21 13:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.3*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:29*	*1*
Y Carrier	*88.2*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:29*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.85		0.418	0.436	5.00	0.488	pCi/L		03/17/21 13:47	1

Client Sample ID: MW-17-07_20210225
Date Collected: 02/25/21 15:48
Date Received: 03/01/21 08:00

Lab Sample ID: 240-145119-13
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**600**		100	23	ug/L		03/02/21 14:00	03/03/21 12:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	0.57	ug/L		03/02/21 14:00	03/03/21 14:40	1
Arsenic	**16**		5.0	0.75	ug/L		03/02/21 14:00	03/03/21 14:40	1
Barium	**27**		5.0	2.2	ug/L		03/02/21 14:00	03/03/21 14:40	1
Beryllium	1.0	U	1.0	0.31	ug/L		03/02/21 14:00	03/03/21 14:40	1
Cadmium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 14:40	1
Calcium	**360000**		1000	580	ug/L		03/02/21 14:00	03/03/21 14:40	1
Chromium	2.0	U	2.0	0.98	ug/L		03/02/21 14:00	03/03/21 14:40	1
Cobalt	**8.0**		1.0	0.19	ug/L		03/02/21 14:00	03/03/21 14:40	1
Copper	2.0	U	2.0	1.7	ug/L		03/02/21 14:00	03/03/21 14:40	1
Iron	**14000**		100	47	ug/L		03/02/21 14:00	03/03/21 14:40	1
Lead	1.0	U	1.0	0.45	ug/L		03/02/21 14:00	03/03/21 14:40	1
Lithium	**24**		8.0	1.7	ug/L		03/02/21 14:00	03/03/21 14:40	1
Magnesium	**160000**		1000	200	ug/L		03/02/21 14:00	03/03/21 14:40	1
Manganese	**790**		5.0	2.1	ug/L		03/02/21 14:00	03/03/21 14:40	1
Molybdenum	**13**		5.0	1.1	ug/L		03/02/21 14:00	03/03/21 14:40	1
Nickel	**2.3**		2.0	1.5	ug/L		03/02/21 14:00	03/03/21 14:40	1
Potassium	**2000**		1000	220	ug/L		03/02/21 14:00	03/03/21 14:40	1
Selenium	5.0	U	5.0	0.89	ug/L		03/02/21 14:00	03/03/21 14:40	1
Silver	1.0	U	1.0	0.053	ug/L		03/02/21 14:00	03/03/21 14:40	1
Sodium	**1400000**		1000	330	ug/L		03/02/21 14:00	03/03/21 14:40	1
Thallium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 14:40	1
Vanadium	5.0	U	5.0	0.82	ug/L		03/02/21 14:00	03/03/21 14:40	1
Zinc	20	U	20	15	ug/L		03/02/21 14:00	03/03/21 14:40	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		03/02/21 10:30	03/02/21 14:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2200**		25	25	mg/L			03/06/21 10:36	25
Fluoride	**0.47**		0.25	0.25	mg/L			03/06/21 10:14	5
Sulfate	**1200**		25	25	mg/L			03/06/21 10:36	25
Total Dissolved Solids	**5900**		50	50	mg/L			03/04/21 08:59	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.178**		0.122	0.123	1.00	0.169	pCi/L	03/03/21 14:22	03/16/21 12:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.0*		*40 - 110*	*03/03/21 14:22*	*03/16/21 12:28*	*1*

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

Job ID: 240-145119-1

Client Sample ID: MW-17-07_20210225

Date Collected: 02/25/21 15:48
Date Received: 03/01/21 08:00

Lab Sample ID: 240-145119-13

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.814		0.328	0.336	1.00	0.452	pCi/L	03/03/21 15:09	03/11/21 13:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.0*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:29*	*1*
Y Carrier	*87.9*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:29*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.991		0.350	0.358	5.00	0.452	pCi/L		03/17/21 13:47	1

Client Sample ID: DUP-01_20210225 Lab Sample ID: 240-145119-14

Date Collected: 02/25/21 00:00 **Matrix: Water**
Date Received: 03/01/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**76**	**J**	100	23	ug/L		03/02/21 14:00	03/03/21 12:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	0.57	ug/L		03/02/21 14:00	03/03/21 14:42	1
Arsenic	5.0	U	5.0	0.75	ug/L		03/02/21 14:00	03/03/21 14:42	1
Barium	**21**		5.0	2.2	ug/L		03/02/21 14:00	03/03/21 14:42	1
Beryllium	1.0	U	1.0	0.31	ug/L		03/02/21 14:00	03/03/21 14:42	1
Cadmium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 14:42	1
Calcium	**50000**		1000	580	ug/L		03/02/21 14:00	03/03/21 14:42	1
Chromium	2.0	U	2.0	0.98	ug/L		03/02/21 14:00	03/03/21 14:42	1
Cobalt	1.0	U	1.0	0.19	ug/L		03/02/21 14:00	03/03/21 14:42	1
Copper	2.0	U	2.0	1.7	ug/L		03/02/21 14:00	03/03/21 14:42	1
Iron	**95**	**J**	100	47	ug/L		03/02/21 14:00	03/03/21 14:42	1
Lead	1.0	U	1.0	0.45	ug/L		03/02/21 14:00	03/03/21 14:42	1
Lithium	**5.8**	**J**	8.0	1.7	ug/L		03/02/21 14:00	03/03/21 14:42	1
Magnesium	**15000**		1000	200	ug/L		03/02/21 14:00	03/03/21 14:42	1
Manganese	**300**		5.0	2.1	ug/L		03/02/21 14:00	03/03/21 14:42	1
Molybdenum	5.0	U	5.0	1.1	ug/L		03/02/21 14:00	03/03/21 14:42	1
Nickel	2.0	U	2.0	1.5	ug/L		03/02/21 14:00	03/03/21 14:42	1
Potassium	**2100**		1000	220	ug/L		03/02/21 14:00	03/03/21 14:42	1
Selenium	5.0	U	5.0	0.89	ug/L		03/02/21 14:00	03/03/21 14:42	1
Silver	1.0	U	1.0	0.053	ug/L		03/02/21 14:00	03/03/21 14:42	1
Sodium	**32000**		1000	330	ug/L		03/02/21 14:00	03/03/21 14:42	1
Thallium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 14:42	1
Vanadium	5.0	U	5.0	0.82	ug/L		03/02/21 14:00	03/03/21 14:42	1
Zinc	20	U	20	15	ug/L		03/02/21 14:00	03/03/21 14:42	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		03/02/21 10:30	03/02/21 14:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**58**		1.0	1.0	mg/L			03/06/21 11:41	1
Fluoride	**0.23**		0.050	0.050	mg/L			03/06/21 11:41	1
Sulfate	**2.8**		1.0	1.0	mg/L			03/06/21 11:41	1
Total Dissolved Solids	**280**		10	10	mg/L			03/04/21 08:59	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.179**		0.122	0.123	1.00	0.168	pCi/L	03/03/21 14:22	03/16/21 12:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.2*		*40 - 110*	*03/03/21 14:22*	*03/16/21 12:28*	*1*

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

Job ID: 240-145119-1

Client Sample ID: DUP-01_20210225

Date Collected: 02/25/21 00:00
Date Received: 03/01/21 08:00

Lab Sample ID: 240-145119-14

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0792	U	0.295	0.295	1.00	0.516	pCi/L	03/03/21 15:09	03/11/21 13:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.2*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:29*	*1*
Y Carrier	*86.4*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:29*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.259	U	0.319	0.320	5.00	0.516	pCi/L		03/17/21 13:47	1

Client: TRC Environmental Corporation.
Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: EW-01_20210225
Lab Sample ID: 240-145119-15
Date Collected: 02/25/21 10:30
Matrix: Water
Date Received: 03/01/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		03/02/21 14:00	03/03/21 17:45	1
Lithium	**9.6**		8.0	8.0	ug/L		03/02/21 14:00	03/03/21 17:45	1

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

Job ID: 240-145119-1

Client Sample ID: EW-03_20210225
Date Collected: 02/25/21 11:30
Date Received: 03/01/21 08:00

Lab Sample ID: 240-145119-16
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	420		5.0	5.0	ug/L		03/02/21 14:00	03/03/21 17:53	1
Lithium	44		8.0	8.0	ug/L		03/02/21 14:00	03/03/21 17:53	1

Client: TRC Environmental Corporation.
Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: EW-04_20210225
Lab Sample ID: 240-145119-17
Date Collected: 02/25/21 11:37
Matrix: Water
Date Received: 03/01/21 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	120		5.0	5.0	ug/L		03/02/21 14:00	03/03/21 17:55	1
Lithium	81		8.0	8.0	ug/L		03/02/21 14:00	03/03/21 17:55	1

Tracer/Carrier Summary

Client: TRC Environmental Corporation.
Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Method: 9315 - Radium-226 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
240-145119-9	MW-16-01_20210225	85.6
240-145119-10	MW-16-02_20210225	82.9
240-145119-11	MW-16-03_20210225	91.0
240-145119-12	MW-17-06_20210225	94.3
240-145119-13	MW-17-07_20210225	94.0
240-145119-14	DUP-01_20210225	92.2
LCS 160-500604/1-A	Lab Control Sample	88.6
MB 160-500604/22-A	Method Blank	91.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
240-145119-9	MW-16-01_20210225	85.6	86.0
240-145119-10	MW-16-02_20210225	82.9	87.1
240-145119-11	MW-16-03_20210225	91.0	88.2
240-145119-12	MW-17-06_20210225	94.3	88.2
240-145119-13	MW-17-07_20210225	94.0	87.9
240-145119-14	DUP-01_20210225	92.2	86.4
LCS 160-500607/1-A	Lab Control Sample	88.6	93.1
MB 160-500607/22-A	Method Blank	91.9	92.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-475010/1-A
Matrix: Water
Analysis Batch: 475313

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 475010

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	23	ug/L		03/02/21 14:00	03/03/21 11:15	1

Lab Sample ID: LCS 240-475010/2-A
Matrix: Water
Analysis Batch: 475313

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 475010

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	1020		ug/L		102	80 - 120

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-475000/1-A
Matrix: Water
Analysis Batch: 475432

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 475000

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		03/02/21 14:00	03/03/21 17:01	1
Lithium	8.0	U	8.0	8.0	ug/L		03/02/21 14:00	03/03/21 17:01	1

Lab Sample ID: LCS 240-475000/2-A
Matrix: Water
Analysis Batch: 475432

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 475000

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	938		ug/L		94	80 - 120
Lithium	500	471		ug/L		94	80 - 120

Lab Sample ID: MB 240-475010/1-A
Matrix: Water
Analysis Batch: 475432

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 475010

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	0.57	ug/L		03/02/21 14:00	03/03/21 13:48	1
Arsenic	5.0	U	5.0	0.75	ug/L		03/02/21 14:00	03/03/21 13:48	1
Barium	5.0	U	5.0	2.2	ug/L		03/02/21 14:00	03/03/21 13:48	1
Beryllium	1.0	U	1.0	0.31	ug/L		03/02/21 14:00	03/03/21 13:48	1
Cadmium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 13:48	1
Calcium	1000	U	1000	580	ug/L		03/02/21 14:00	03/03/21 13:48	1
Chromium	2.0	U	2.0	0.98	ug/L		03/02/21 14:00	03/03/21 13:48	1
Cobalt	1.0	U	1.0	0.19	ug/L		03/02/21 14:00	03/03/21 13:48	1
Copper	2.0	U	2.0	1.7	ug/L		03/02/21 14:00	03/03/21 13:48	1
Iron	100	U	100	47	ug/L		03/02/21 14:00	03/03/21 13:48	1
Lead	1.0	U	1.0	0.45	ug/L		03/02/21 14:00	03/03/21 13:48	1
Lithium	8.0	U	8.0	1.7	ug/L		03/02/21 14:00	03/03/21 13:48	1
Magnesium	1000	U	1000	200	ug/L		03/02/21 14:00	03/03/21 13:48	1
Manganese	5.0	U	5.0	2.1	ug/L		03/02/21 14:00	03/03/21 13:48	1
Molybdenum	5.0	U	5.0	1.1	ug/L		03/02/21 14:00	03/03/21 13:48	1
Nickel	2.0	U	2.0	1.5	ug/L		03/02/21 14:00	03/03/21 13:48	1
Potassium	1000	U	1000	220	ug/L		03/02/21 14:00	03/03/21 13:48	1
Selenium	5.0	U	5.0	0.89	ug/L		03/02/21 14:00	03/03/21 13:48	1

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

Lab Sample ID: MB 240-475010/1-A
Matrix: Water
Analysis Batch: 475432

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 475010

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	1.0	U	1.0	0.053	ug/L		03/02/21 14:00	03/03/21 13:48	1
Sodium	1000	U	1000	330	ug/L		03/02/21 14:00	03/03/21 13:48	1
Thallium	1.0	U	1.0	0.20	ug/L		03/02/21 14:00	03/03/21 13:48	1
Vanadium	5.0	U	5.0	0.82	ug/L		03/02/21 14:00	03/03/21 13:48	1
Zinc	20	U	20	15	ug/L		03/02/21 14:00	03/03/21 13:48	1

Lab Sample ID: LCS 240-475010/3-A
Matrix: Water
Analysis Batch: 475432

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 475010

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	100	90.7		ug/L		91	80 - 120
Arsenic	1000	929		ug/L		93	80 - 120
Barium	1000	905		ug/L		91	80 - 120
Beryllium	500	449		ug/L		90	80 - 120
Cadmium	500	464		ug/L		93	80 - 120
Calcium	25000	23200		ug/L		93	80 - 120
Chromium	500	465		ug/L		93	80 - 120
Cobalt	500	477		ug/L		95	80 - 120
Copper	500	467		ug/L		93	80 - 120
Iron	5000	4640		ug/L		93	80 - 120
Lead	500	462		ug/L		92	80 - 120
Lithium	500	462		ug/L		92	80 - 120
Magnesium	25000	23100		ug/L		92	80 - 120
Manganese	500	463		ug/L		93	80 - 120
Molybdenum	500	461		ug/L		92	80 - 120
Nickel	500	467		ug/L		93	80 - 120
Potassium	25000	23300		ug/L		93	80 - 120
Selenium	1000	911		ug/L		91	80 - 120
Silver	100	92.2		ug/L		92	80 - 120
Sodium	25000	23000		ug/L		92	80 - 120
Thallium	1000	917		ug/L		92	80 - 120
Vanadium	500	469		ug/L		94	80 - 120
Zinc	500	475		ug/L		95	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-475015/1-A
Matrix: Water
Analysis Batch: 475271

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 475015

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		03/02/21 10:30	03/02/21 13:24	1

Lab Sample ID: LCS 240-475015/2-A
Matrix: Water
Analysis Batch: 475271

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 475015

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.01		ug/L		100	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-475717/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 475717

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	1.0	mg/L			03/06/21 03:00	1
Fluoride	0.050	U	0.050	0.050	mg/L			03/06/21 03:00	1
Sulfate	1.0	U	1.0	1.0	mg/L			03/06/21 03:00	1

Lab Sample ID: LCS 240-475717/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 475717

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			50.0	51.8		mg/L		104	90 - 110		
Fluoride			2.50	2.59		mg/L		104	90 - 110		
Sulfate			50.0	52.9		mg/L		106	90 - 110		

Lab Sample ID: 240-145119-10 MS — **Client Sample ID: MW-16-02_20210225**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 475717

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	34		50.0	86.2		mg/L		104	80 - 120		
Fluoride	0.54		2.50	3.23		mg/L		108	80 - 120		
Sulfate	1.0	U	50.0	55.8		mg/L		112	80 - 120		

Lab Sample ID: 240-145119-10 MSD — **Client Sample ID: MW-16-02_20210225**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 475717

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	34		50.0	88.0		mg/L		107	80 - 120	2	15
Fluoride	0.54		2.50	3.36		mg/L		112	80 - 120	4	15
Sulfate	1.0	U	50.0	57.7		mg/L		115	80 - 120	3	15

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

Lab Sample ID: MB 240-475025/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 475025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	10	mg/L			03/02/21 08:55	1

Lab Sample ID: LCS 240-475025/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 475025

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			245	244		mg/L		100	80 - 120		

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

Lab Sample ID: MB 240-475440/1
Matrix: Water
Analysis Batch: 475440

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			03/04/21 08:59	1

Lab Sample ID: LCS 240-475440/2
Matrix: Water
Analysis Batch: 475440

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	245	223		mg/L		91	80 - 120

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-500604/22-A
Matrix: Water
Analysis Batch: 502061

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 500604

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.06070	U	0.111	0.112	1.00	0.196	pCi/L	03/03/21 14:22	03/16/21 14:34	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.9*		*40 - 110*	*03/03/21 14:22*	*03/16/21 14:34*	*1*

Lab Sample ID: LCS 160-500604/1-A
Matrix: Water
Analysis Batch: 502062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 500604

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.1	15.88		1.68	1.00	0.164	pCi/L	105	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.6*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-500607/22-A
Matrix: Water
Analysis Batch: 501570

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 500607

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.04834	U	0.289	0.289	1.00	0.508	pCi/L	03/03/21 15:09	03/11/21 13:34	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.9*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:34*	*1*
Y Carrier	*92.7*		*40 - 110*	*03/03/21 15:09*	*03/11/21 13:34*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-500607/1-A
Matrix: Water
Analysis Batch: 501603

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 500607

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			9.82	11.59		1.36	1.00	0.438	pCi/L	118	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.6*		*40 - 110*
Y Carrier	*93.1*		*40 - 110*

Metals

Prep Batch: 475000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145119-1	EW-05_20210225	Total Recoverable	Water	3005A	
240-145119-2	EW-06_20210225	Total Recoverable	Water	3005A	
240-145119-3	EW-07_20210225	Total Recoverable	Water	3005A	
240-145119-4	EW-08_20210225	Total Recoverable	Water	3005A	
240-145119-5	EW-09_20210225	Total Recoverable	Water	3005A	
240-145119-6	EW-10_20210225	Total Recoverable	Water	3005A	
240-145119-7	EW-11_20210225	Total Recoverable	Water	3005A	
240-145119-8	DUP-02_20210225	Total Recoverable	Water	3005A	
240-145119-15	EW-01_20210225	Total Recoverable	Water	3005A	
240-145119-16	EW-03_20210225	Total Recoverable	Water	3005A	
240-145119-17	EW-04_20210225	Total Recoverable	Water	3005A	
MB 240-475000/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-475000/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 475010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145119-9	MW-16-01_20210225	Total Recoverable	Water	3005A	
240-145119-10	MW-16-02_20210225	Total Recoverable	Water	3005A	
240-145119-11	MW-16-03_20210225	Total Recoverable	Water	3005A	
240-145119-12	MW-17-06_20210225	Total Recoverable	Water	3005A	
240-145119-13	MW-17-07_20210225	Total Recoverable	Water	3005A	
240-145119-14	DUP-01_20210225	Total Recoverable	Water	3005A	
MB 240-475010/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-475010/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-475010/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 475015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145119-9	MW-16-01_20210225	Total/NA	Water	7470A	
240-145119-10	MW-16-02_20210225	Total/NA	Water	7470A	
240-145119-11	MW-16-03_20210225	Total/NA	Water	7470A	
240-145119-12	MW-17-06_20210225	Total/NA	Water	7470A	
240-145119-13	MW-17-07_20210225	Total/NA	Water	7470A	
240-145119-14	DUP-01_20210225	Total/NA	Water	7470A	
MB 240-475015/1-A	Method Blank	Total/NA	Water	7470A	
LCS 240-475015/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 475271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145119-9	MW-16-01_20210225	Total/NA	Water	7470A	475015
240-145119-10	MW-16-02_20210225	Total/NA	Water	7470A	475015
240-145119-11	MW-16-03_20210225	Total/NA	Water	7470A	475015
240-145119-12	MW-17-06_20210225	Total/NA	Water	7470A	475015
240-145119-13	MW-17-07_20210225	Total/NA	Water	7470A	475015
240-145119-14	DUP-01_20210225	Total/NA	Water	7470A	475015
MB 240-475015/1-A	Method Blank	Total/NA	Water	7470A	475015
LCS 240-475015/2-A	Lab Control Sample	Total/NA	Water	7470A	475015

Analysis Batch: 475313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145119-9	MW-16-01_20210225	Total Recoverable	Water	6010B	475010

Metals (Continued)

Analysis Batch: 475313 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145119-10	MW-16-02_20210225	Total Recoverable	Water	6010B	475010
240-145119-11	MW-16-03_20210225	Total Recoverable	Water	6010B	475010
240-145119-12	MW-17-06_20210225	Total Recoverable	Water	6010B	475010
240-145119-13	MW-17-07_20210225	Total Recoverable	Water	6010B	475010
240-145119-14	DUP-01_20210225	Total Recoverable	Water	6010B	475010
MB 240-475010/1-A	Method Blank	Total Recoverable	Water	6010B	475010
LCS 240-475010/2-A	Lab Control Sample	Total Recoverable	Water	6010B	475010

Analysis Batch: 475432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145119-1	EW-05_20210225	Total Recoverable	Water	6020	475000
240-145119-2	EW-06_20210225	Total Recoverable	Water	6020	475000
240-145119-3	EW-07_20210225	Total Recoverable	Water	6020	475000
240-145119-4	EW-08_20210225	Total Recoverable	Water	6020	475000
240-145119-5	EW-09_20210225	Total Recoverable	Water	6020	475000
240-145119-6	EW-10_20210225	Total Recoverable	Water	6020	475000
240-145119-7	EW-11_20210225	Total Recoverable	Water	6020	475000
240-145119-8	DUP-02_20210225	Total Recoverable	Water	6020	475000
240-145119-9	MW-16-01_20210225	Total Recoverable	Water	6020	475010
240-145119-10	MW-16-02_20210225	Total Recoverable	Water	6020	475010
240-145119-11	MW-16-03_20210225	Total Recoverable	Water	6020	475010
240-145119-12	MW-17-06_20210225	Total Recoverable	Water	6020	475010
240-145119-13	MW-17-07_20210225	Total Recoverable	Water	6020	475010
240-145119-14	DUP-01_20210225	Total Recoverable	Water	6020	475010
240-145119-15	EW-01_20210225	Total Recoverable	Water	6020	475000
240-145119-16	EW-03_20210225	Total Recoverable	Water	6020	475000
240-145119-17	EW-04_20210225	Total Recoverable	Water	6020	475000
MB 240-475000/1-A	Method Blank	Total Recoverable	Water	6020	475000
MB 240-475010/1-A	Method Blank	Total Recoverable	Water	6020	475010
LCS 240-475000/2-A	Lab Control Sample	Total Recoverable	Water	6020	475000
LCS 240-475010/3-A	Lab Control Sample	Total Recoverable	Water	6020	475010

General Chemistry

Analysis Batch: 475025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145119-9	MW-16-01_20210225	Total/NA	Water	SM 2540C	
240-145119-10	MW-16-02_20210225	Total/NA	Water	SM 2540C	
240-145119-11	MW-16-03_20210225	Total/NA	Water	SM 2540C	
MB 240-475025/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-475025/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 475440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145119-12	MW-17-06_20210225	Total/NA	Water	SM 2540C	
240-145119-13	MW-17-07_20210225	Total/NA	Water	SM 2540C	
240-145119-14	DUP-01_20210225	Total/NA	Water	SM 2540C	
MB 240-475440/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-475440/2	Lab Control Sample	Total/NA	Water	SM 2540C	

QC Association Summary

Client: TRC Environmental Corporation. Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

General Chemistry

Analysis Batch: 475717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145119-9	MW-16-01_20210225	Total/NA	Water	9056A	
240-145119-10	MW-16-02_20210225	Total/NA	Water	9056A	
240-145119-11	MW-16-03_20210225	Total/NA	Water	9056A	
240-145119-12	MW-17-06_20210225	Total/NA	Water	9056A	
240-145119-12	MW-17-06_20210225	Total/NA	Water	9056A	
240-145119-13	MW-17-07_20210225	Total/NA	Water	9056A	
240-145119-13	MW-17-07_20210225	Total/NA	Water	9056A	
240-145119-14	DUP-01_20210225	Total/NA	Water	9056A	
MB 240-475717/3	Method Blank	Total/NA	Water	9056A	
LCS 240-475717/4	Lab Control Sample	Total/NA	Water	9056A	
240-145119-10 MS	MW-16-02_20210225	Total/NA	Water	9056A	
240-145119-10 MSD	MW-16-02_20210225	Total/NA	Water	9056A	

Rad

Prep Batch: 500604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145119-9	MW-16-01_20210225	Total/NA	Water	PrecSep-21	
240-145119-10	MW-16-02_20210225	Total/NA	Water	PrecSep-21	
240-145119-11	MW-16-03_20210225	Total/NA	Water	PrecSep-21	
240-145119-12	MW-17-06_20210225	Total/NA	Water	PrecSep-21	
240-145119-13	MW-17-07_20210225	Total/NA	Water	PrecSep-21	
240-145119-14	DUP-01_20210225	Total/NA	Water	PrecSep-21	
MB 160-500604/22-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-500604/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 500607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-145119-9	MW-16-01_20210225	Total/NA	Water	PrecSep_0	
240-145119-10	MW-16-02_20210225	Total/NA	Water	PrecSep_0	
240-145119-11	MW-16-03_20210225	Total/NA	Water	PrecSep_0	
240-145119-12	MW-17-06_20210225	Total/NA	Water	PrecSep_0	
240-145119-13	MW-17-07_20210225	Total/NA	Water	PrecSep_0	
240-145119-14	DUP-01_20210225	Total/NA	Water	PrecSep_0	
MB 160-500607/22-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-500607/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

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

Job ID: 240-145119-1

Client Sample ID: EW-05_20210225
Lab Sample ID: 240-145119-1
Date Collected: 02/25/21 12:10
Matrix: Water
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475000	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 17:25	RKT	TAL CAN

Client Sample ID: EW-06_20210225
Lab Sample ID: 240-145119-2
Date Collected: 02/25/21 12:17
Matrix: Water
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475000	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 17:28	RKT	TAL CAN

Client Sample ID: EW-07_20210225
Lab Sample ID: 240-145119-3
Date Collected: 02/25/21 12:28
Matrix: Water
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475000	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 17:30	RKT	TAL CAN

Client Sample ID: EW-08_20210225
Lab Sample ID: 240-145119-4
Date Collected: 02/25/21 13:00
Matrix: Water
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475000	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 17:33	RKT	TAL CAN

Client Sample ID: EW-09_20210225
Lab Sample ID: 240-145119-5
Date Collected: 02/25/21 12:47
Matrix: Water
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475000	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 17:35	RKT	TAL CAN

Client Sample ID: EW-10_20210225
Lab Sample ID: 240-145119-6
Date Collected: 02/25/21 13:13
Matrix: Water
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475000	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 17:38	RKT	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: EW-11_20210225 — Lab Sample ID: 240-145119-7

Date Collected: 02/25/21 13:20 — **Matrix: Water**
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475000	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 17:40	RKT	TAL CAN

Client Sample ID: DUP-02_20210225 — Lab Sample ID: 240-145119-8

Date Collected: 02/25/21 00:00 — **Matrix: Water**
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475000	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 17:43	RKT	TAL CAN

Client Sample ID: MW-16-01_20210225 — Lab Sample ID: 240-145119-9

Date Collected: 02/25/21 12:31 — **Matrix: Water**
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475010	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6010B		1	475313	03/03/21 12:14	DSH	TAL CAN
Total Recoverable	Prep	3005A			475010	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 14:30	RKT	TAL CAN
Total/NA	Prep	7470A			475015	03/02/21 10:30	SLD	TAL CAN
Total/NA	Analysis	7470A		1	475271	03/02/21 14:00	SLD	TAL CAN
Total/NA	Analysis	9056A		1	475717	03/06/21 07:42	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	475025	03/02/21 08:55	AJ	TAL CAN
Total/NA	Prep	PrecSep-21			500604	03/03/21 14:22	HRT	TAL SL
Total/NA	Analysis	9315		1	502062	03/16/21 12:26	AK	TAL SL
Total/NA	Prep	PrecSep_0			500607	03/03/21 15:09	HRT	TAL SL
Total/NA	Analysis	9320		1	501603	03/11/21 13:28	ANW	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	502263	03/17/21 13:47	FLC	TAL SL

Client Sample ID: MW-16-02_20210225 — Lab Sample ID: 240-145119-10

Date Collected: 02/25/21 11:18 — **Matrix: Water**
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475010	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6010B		1	475313	03/03/21 12:19	DSH	TAL CAN
Total Recoverable	Prep	3005A			475010	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 14:32	RKT	TAL CAN
Total/NA	Prep	7470A			475015	03/02/21 10:30	SLD	TAL CAN
Total/NA	Analysis	7470A		1	475271	03/02/21 14:02	SLD	TAL CAN
Total/NA	Analysis	9056A		1	475717	03/06/21 08:04	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	475025	03/02/21 08:55	AJ	TAL CAN
Total/NA	Prep	PrecSep-21			500604	03/03/21 14:22	HRT	TAL SL
Total/NA	Analysis	9315		1	502061	03/16/21 12:27	AK	TAL SL

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: MW-16-02_20210225 Lab Sample ID: 240-145119-10

Date Collected: 02/25/21 11:18 **Matrix: Water**
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			500607	03/03/21 15:09	HRT	TAL SL
Total/NA	Analysis	9320		1	501603	03/11/21 13:28	ANW	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	502263	03/17/21 13:47	FLC	TAL SL

Client Sample ID: MW-16-03_20210225 Lab Sample ID: 240-145119-11

Date Collected: 02/25/21 10:14 **Matrix: Water**
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475010	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6010B		1	475313	03/03/21 12:23	DSH	TAL CAN
Total Recoverable	Prep	3005A			475010	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 14:34	RKT	TAL CAN
Total/NA	Prep	7470A			475015	03/02/21 10:30	SLD	TAL CAN
Total/NA	Analysis	7470A		1	475271	03/02/21 14:04	SLD	TAL CAN
Total/NA	Analysis	9056A		1	475717	03/06/21 09:09	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	475025	03/02/21 08:55	AJ	TAL CAN
Total/NA	Prep	PrecSep-21			500604	03/03/21 14:22	HRT	TAL SL
Total/NA	Analysis	9315		1	502061	03/16/21 12:28	AK	TAL SL
Total/NA	Prep	PrecSep_0			500607	03/03/21 15:09	HRT	TAL SL
Total/NA	Analysis	9320		1	501603	03/11/21 13:28	ANW	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	502263	03/17/21 13:47	FLC	TAL SL

Client Sample ID: MW-17-06_20210225 Lab Sample ID: 240-145119-12

Date Collected: 02/25/21 14:20 **Matrix: Water**
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475010	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6010B		1	475313	03/03/21 12:28	DSH	TAL CAN
Total Recoverable	Prep	3005A			475010	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 14:37	RKT	TAL CAN
Total/NA	Prep	7470A			475015	03/02/21 10:30	SLD	TAL CAN
Total/NA	Analysis	7470A		1	475271	03/02/21 14:06	SLD	TAL CAN
Total/NA	Analysis	9056A		1	475717	03/06/21 09:31	AGC	TAL CAN
Total/NA	Analysis	9056A		10	475717	03/06/21 09:52	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	475440	03/04/21 08:59	AJ	TAL CAN
Total/NA	Prep	PrecSep-21			500604	03/03/21 14:22	HRT	TAL SL
Total/NA	Analysis	9315		1	502061	03/16/21 12:28	AK	TAL SL
Total/NA	Prep	PrecSep_0			500607	03/03/21 15:09	HRT	TAL SL
Total/NA	Analysis	9320		1	501603	03/11/21 13:29	ANW	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	502263	03/17/21 13:47	FLC	TAL SL

Lab Chronicle

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

Job ID: 240-145119-1

Client Sample ID: MW-17-07_20210225

Lab Sample ID: 240-145119-13

Date Collected: 02/25/21 15:48

Matrix: Water

Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475010	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6010B		1	475313	03/03/21 12:32	DSH	TAL CAN
Total Recoverable	Prep	3005A			475010	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 14:40	RKT	TAL CAN
Total/NA	Prep	7470A			475015	03/02/21 10:30	SLD	TAL CAN
Total/NA	Analysis	7470A		1	475271	03/02/21 14:08	SLD	TAL CAN
Total/NA	Analysis	9056A		5	475717	03/06/21 10:14	AGC	TAL CAN
Total/NA	Analysis	9056A		25	475717	03/06/21 10:36	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	475440	03/04/21 08:59	AJ	TAL CAN
Total/NA	Prep	PrecSep-21			500604	03/03/21 14:22	HRT	TAL SL
Total/NA	Analysis	9315		1	502061	03/16/21 12:28	AK	TAL SL
Total/NA	Prep	PrecSep_0			500607	03/03/21 15:09	HRT	TAL SL
Total/NA	Analysis	9320		1	501603	03/11/21 13:29	ANW	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	502263	03/17/21 13:47	FLC	TAL SL

Client Sample ID: DUP-01_20210225

Lab Sample ID: 240-145119-14

Date Collected: 02/25/21 00:00

Matrix: Water

Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475010	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6010B		1	475313	03/03/21 12:37	DSH	TAL CAN
Total Recoverable	Prep	3005A			475010	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 14:42	RKT	TAL CAN
Total/NA	Prep	7470A			475015	03/02/21 10:30	SLD	TAL CAN
Total/NA	Analysis	7470A		1	475271	03/02/21 14:17	SLD	TAL CAN
Total/NA	Analysis	9056A		1	475717	03/06/21 11:41	AGC	TAL CAN
Total/NA	Analysis	SM 2540C		1	475440	03/04/21 08:59	AJ	TAL CAN
Total/NA	Prep	PrecSep-21			500604	03/03/21 14:22	HRT	TAL SL
Total/NA	Analysis	9315		1	502061	03/16/21 12:28	AK	TAL SL
Total/NA	Prep	PrecSep_0			500607	03/03/21 15:09	HRT	TAL SL
Total/NA	Analysis	9320		1	501603	03/11/21 13:29	ANW	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	502263	03/17/21 13:47	FLC	TAL SL

Client Sample ID: EW-01_20210225

Lab Sample ID: 240-145119-15

Date Collected: 02/25/21 10:30

Matrix: Water

Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475000	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 17:45	RKT	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Client Sample ID: EW-03_20210225 Lab Sample ID: 240-145119-16

Date Collected: 02/25/21 11:30 **Matrix: Water**
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475000	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 17:53	RKT	TAL CAN

Client Sample ID: EW-04_20210225 Lab Sample ID: 240-145119-17

Date Collected: 02/25/21 11:37 **Matrix: Water**
Date Received: 03/01/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			475000	03/02/21 14:00	SLD	TAL CAN
Total Recoverable	Analysis	6020		1	475432	03/03/21 17:55	RKT	TAL CAN

Laboratory References:

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

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

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	02-23-21 *
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21 *
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	03-31-21
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

Laboratory: Eurofins TestAmerica, St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-21
California	Los Angeles County Sanitation Districts	10259	06-30-21
California	State	2886	06-30-21
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-21
HI - RadChem Recognition	State	n/a	06-30-21
Illinois	NELAP	004553	11-30-21
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-21
Kentucky (DW)	State	KY90125	01-01-22
Louisiana	NELAP	04080	06-30-21
Louisiana (DW)	State	LA011	12-31-21
Maryland	State	310	09-30-21
MI - RadChem Recognition	State	9005	06-30-21
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-21
New Jersey	NELAP	MO002	06-30-21
New York	NELAP	11616	04-01-21
North Dakota	State	R-207	06-30-21
NRC	NRC	24-24817-01	12-31-22

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

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-145119-1
Project/Site: CCR DTE River Rouge Power Plant

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Oklahoma	State	9997	08-31-21
Oregon	NELAP	4157	09-01-21
Pennsylvania	NELAP	68-00540	03-01-22
South Carolina	State	85002001	06-30-21
Texas	NELAP	T104704193-19-13	07-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-21
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-21
West Virginia DEP	State	381	10-31-21

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

MICHIGAN 190

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: JAULA JASS	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-80311-31405.2
Client Contact: Chris Scieszka	Phone: 5344041 3316	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:
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, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, H 4-5, ner (specify)
State, Zip: MI, 48108-7080	Compliance Project: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: TBD			
Email: CScieszka@trccompanies.com	WO #: 413519.0005			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: Michigan	SSOW#:			

240-145119 Chain of Custody

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, 7470A	9315_Ra226, 9320_Ra228	2540C_Calcd, 9056A_28D	6020 - (MOD) Metals - As, Li	Total	Special Instructions/Note:
			Preservation Code:				D	D	N	D		
EW-05 - 20210225	2/25/21	1216	G	Water	N	N				X	1	* PUT Fe, Cu, Ni, Ag, V, Zn ON SEPERATE LAB REPORT
EW-06 - 20210225	" "	1317	G	Water	N	N				X	1	
EW-07 - 20210225	" "	1230	G	Water	N	N				X	1	
EW-08 - 20210225	" "	1300	G	Water	N	N				X	1	
EW-09 - 20210225	" "	1241	G	Water	N	N				X	1	
EW-10 - 20210225	" "	1313	G	Water	N	N				X	1	
EW-11 - 20210225	" "	1320	G	Water	N	N				X	1	
DUP-02 - 20210225	2/25/21	—	G	Water	N	N				X	1	
				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: 2/25/21 1736	Company: TRC	Received by:	Date/Time: 2/26/21 0730	Company: TRC
Relinquished by:	Date/Time: 2-26-21 11:04	Company: TRC	Received by:	Date/Time: 2/26/21 1108	Company: ETA
Relinquished by:	Date/Time: 2/26/21 1100	Company: ETA	Received by: MJS ETA CANTON	Date/Time: FEB 27 2021	Company: 800

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 11.01.2020

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3/17/2021

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

MICHIGAN 190

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: JADE TASY	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-80311-31405.1
Client Contact: Chris Scieszka	Phone: 734 404 3716	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: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: TBD			
Email: CScieszka@trccompanies.com	WO #: 413519.0005			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: Michigan	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010B, 6020, 7470A	9315_Ra226, 9320_Ra228	2540C_Calcd, 9056A_28D	6020 - (MOD) Metals - As, Li	Iron 6010B *	Cobalt, Nickel, Silver, Vanadium, Zinc (6020) *									Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	D	N	D												
MW-16-01 - 20210225	2/25/21	1231	G	Water	N	N	X	X	X	X	X	X									4	* PUT Fe, Cu, Ni, Ag, V, Zn ON SEPERATE LAB REPORT
MW-16-02 - 20210225	2/25/21	1114	C	Water	N	N	X	X	X	X	X	X									4	
MW-16-03 - 20210225	2/25/21	1014	G	Water	N	N	X	X	X	X	X	X									4	
MW-17-06 - 20210225	2/25/21	1412	G	Water	N	N	X	X	X	X	X	X									4	
MW-17-07 - 20210225	2/25/21	1546		Water	N	N	X	X	X	X	X	X										
DUP-01 - 20210225	2/25/21	—	G	Water	N	N	X	X	X	X	X	X									4	
				Water																		
EW-01 - 20210225	2/25/21	1012	C	Water	N	N				X											1	
EW-02 - 20210225				Water																		
EW-03 - 20210225	2/25/21	1130	C	Water	N	N				X											1	
EW-04 - 20210225	2/25/21	1137		Water	N	N				X											1	

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		2/25/21 1736	TRC		2/25/21 1736	TRC
2		2/26/21 11:04	TRC		2/26/21 1108	ETA
3		2/26/21 1109	ETA	MJS ETA CANTON	FEB 27 2021 800	

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

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3/17/2021

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 145119
Canton Facility

Client IRC Site Name

Cooler Received on FEB 27 2021 Opened on FEB 27 2021

Cooler unpacked by: MJS ETA CANTON

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

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

TestAmerica Cooler # 14 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. 0.4 °C Corrected Cooler Temp. ____ °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 2	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# HC907861
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 # : 145119

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
(TA) Client Box Other	(IR-11) IR-12	0.4	0.5	(Wet Ice) Blue Ice Dry Ice Water None
(TA) Client Box Other	(IR-11) IR-12	1.3	1.4	(Wet Ice) Blue Ice Dry Ice Water None
(TA) Client Box Other	(IR-11) IR-12	1.9	2.0	(Wet Ice) Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-11 IR-12			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

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

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
EW-05_20210225	240-145119-A-1	Plastic 250ml - with Nitric Acid	<2			
EW-06_20210225	240-145119-A-2	Plastic 250ml - with Nitric Acid	<2			
EW-07_20210225	240-145119-A-3	Plastic 250ml - with Nitric Acid	<2			
EW-08_20210225	240-145119-A-4	Plastic 250ml - with Nitric Acid	<2			
EW-09_20210225	240-145119-A-5	Plastic 250ml - with Nitric Acid	<2			
EW-10_20210225	240-145119-A-6	Plastic 250ml - with Nitric Acid	<2			
EW-11_20210225	240-145119-A-7	Plastic 250ml - with Nitric Acid	<2			
DUP-02_20210225	240-145119-A-8	Plastic 250ml - with Nitric Acid	<2			
MW-16-01_20210225	240-145119-B-9	Plastic 500ml - with Nitric Acid	<2			
MW-16-01_20210225	240-145119-C-9	Plastic 1 liter - Nitric Acid	<2			
MW-16-01_20210225	240-145119-D-9	Plastic 1 liter - Nitric Acid	<2			
MW-16-02_20210225	240-145119-B-10	Plastic 500ml - with Nitric Acid	<2			
MW-16-02_20210225	240-145119-C-10	Plastic 1 liter - Nitric Acid	<2			
MW-16-02_20210225	240-145119-D-10	Plastic 1 liter - Nitric Acid	<2			
MW-16-03_20210225	240-145119-B-11	Plastic 500ml - with Nitric Acid	<2			
MW-16-03_20210225	240-145119-C-11	Plastic 1 liter - Nitric Acid	<2			
MW-16-03_20210225	240-145119-D-11	Plastic 1 liter - Nitric Acid	<2			
MW-17-06_20210225	240-145119-B-12	Plastic 500ml - with Nitric Acid	<2			
MW-17-06_20210225	240-145119-C-12	Plastic 1 liter - Nitric Acid	<2			
MW-17-06_20210225	240-145119-D-12	Plastic 1 liter - Nitric Acid	<2			
MW-17-07_20210225	240-145119-B-13	Plastic 500ml - with Nitric Acid	<2			
MW-17-07_20210225	240-145119-C-13	Plastic 1 liter - Nitric Acid	<2			
MW-17-07_20210225	240-145119-D-13	Plastic 1 liter - Nitric Acid	<2			
DUP-01_20210225	240-145119-B-14	Plastic 500ml - with Nitric Acid	<2			
DUP-01_20210225	240-145119-C-14	Plastic 1 liter - Nitric Acid	<2			
DUP-01_20210225	240-145119-D-14	Plastic 1 liter - Nitric Acid	<2			
EW-01_20210225	240-145119-A-15	Plastic 250ml - with Nitric Acid	<2			
EW-03_20210225	240-145119-A-16	Plastic 250ml - with Nitric Acid	<2			
EW-04_20210225	240-145119-A-17	Plastic 250ml - with Nitric Acid	<2			

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

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-132688.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin: Michigan	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 240-145119-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/31/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: TRC CCR DTE River Rouge Power Plant	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 - Client ID (Lab ID)	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)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-16-01_20210225 (240-145119-9)	2/25/21	12:31 Eastern		Water			X	X	X	2	
MW-16-02_20210225 (240-145119-10)	2/25/21	11:18 Eastern		Water			X	X	X	2	
MW-16-03_20210225 (240-145119-11)	2/25/21	10:14 Eastern		Water			X	X	X	2	
MW-17-06_20210225 (240-145119-12)	2/25/21	14:20 Eastern		Water			X	X	X	2	
MW-17-07_20210225 (240-145119-13)	2/25/21	15:48 Eastern		Water			X	X	X	2	
DUP-01_20210225 (240-145119-14)	2/25/21	Eastern		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature] FED EX	3-1-21 1722	ETA			
2	FED EX			[signature] FED EX	3/2/21 1020	GTAST
3						

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

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: TRC Environmental Corporation.

Job Number: 240-145119-1

Login Number: 145119
List Number: 2
Creator: O'Gara, Mallory L

List Source: Eurofins TestAmerica, St. Louis
List Creation: 03/02/21 02:58 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

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

Laboratory Job ID: 240-158615-1
Client Project/Site: CCR DTE RRRP

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

Attn: Mr. Vincent Buening

Authorized for release by:
11/11/2021 4:31:06 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-1

Qualifiers

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
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: 240-158615-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-158615-1

Comments
No additional comments.

Receipt
The samples were received on 10/23/2021 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 8 coolers at receipt time were 0.8º C, 1.4º C, 2.0º C, 2.5º C, 3.4º C, 3.9º C, 4.2º C and 4.3º C.

Metals
Methods 6020, 6020A: The continuing calibration verification (CCV) associated with batch 240-510255 recovered above the upper control limit for Chromium. The samples associated with this CCV were below the reporting limit for the affected analytes; therefore, the data have been reported. The associated samples are impacted: MW-16-01_20211020 (240-158615-1), MW-16-02_20211020 (240-158615-2), MW-16-03_20211020 (240-158615-3), MW-17-06_20211020 (240-158615-4), MW-17-07_20211021 (240-158615-5) and DUP-01_20211020 (240-158615-6).

No additional analytical or quality issues were noted, other than those described above or 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 RRRP

Job ID: 240-158615-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
7470A	Mercury (CVAA)	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
7470A	Preparation, Mercury	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 RRRP

Job ID: 240-158615-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-158615-1	MW-16-01_20211020	Water	10/20/21 11:30	10/23/21 08:00
240-158615-2	MW-16-02_20211020	Water	10/20/21 10:20	10/23/21 08:00
240-158615-3	MW-16-03_20211020	Water	10/20/21 09:25	10/23/21 08:00
240-158615-4	MW-17-06_20211020	Water	10/20/21 12:55	10/23/21 08:00
240-158615-5	MW-17-07_20211021	Water	10/21/21 13:00	10/23/21 08:00
240-158615-6	DUP-01_20211020	Water	10/20/21 00:00	10/23/21 08:00

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-1

Client Sample ID: MW-16-01_20211020 — Lab Sample ID: 240-158615-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	480		100	100	ug/L	1		6010B	Total Recoverable
Arsenic	200		5.0	5.0	ug/L	1		6020	Total Recoverable
Barium	120		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	54000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	4100		100	100	ug/L	1		6020	Total Recoverable
Lithium	34		8.0	8.0	ug/L	1		6020	Total Recoverable
Magnesium	16000		1000	1000	ug/L	1		6020	Total Recoverable
Manganese	140		10	10	ug/L	1		6020	Total Recoverable
Potassium	5700		1000	1000	ug/L	1		6020	Total Recoverable
Sodium	28000		1000	1000	ug/L	1		6020	Total Recoverable
Chloride	43		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.5		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	2.2		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	260		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-02_20211020 — Lab Sample ID: 240-158615-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	280		100	100	ug/L	1		6010B	Total Recoverable
Barium	27		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	61000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	550		100	100	ug/L	1		6020	Total Recoverable
Lithium	14		8.0	8.0	ug/L	1		6020	Total Recoverable
Magnesium	17000		1000	1000	ug/L	1		6020	Total Recoverable
Manganese	250		10	10	ug/L	1		6020	Total Recoverable
Potassium	3700		1000	1000	ug/L	1		6020	Total Recoverable
Sodium	31000		1000	1000	ug/L	1		6020	Total Recoverable
Chloride	45		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.53		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	310		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-16-03_20211020 — Lab Sample ID: 240-158615-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	150		100	100	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16-03_20211020 (Continued) — Lab Sample ID: 240-158615-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	30		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	63000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	19000		1000	1000	ug/L	1		6020	Total Recoverable
Manganese	390		10	10	ug/L	1		6020	Total Recoverable
Potassium	2900		1000	1000	ug/L	1		6020	Total Recoverable
Sodium	30000		1000	1000	ug/L	1		6020	Total Recoverable
Chloride	42		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.24		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	2.7		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	340		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-06_20211020 — Lab Sample ID: 240-158615-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	360		100	100	ug/L	1		6010B	Total Recoverable
Arsenic	17		5.0	5.0	ug/L	1		6020	Total Recoverable
Barium	110		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	240000		1000	1000	ug/L	1		6020	Total Recoverable
Iron	14000		100	100	ug/L	1		6020	Total Recoverable
Lithium	17		8.0	8.0	ug/L	1		6020	Total Recoverable
Magnesium	130000		1000	1000	ug/L	1		6020	Total Recoverable
Manganese	290		10	10	ug/L	1		6020	Total Recoverable
Molybdenum	8.5		5.0	5.0	ug/L	1		6020	Total Recoverable
Potassium	2300		1000	1000	ug/L	1		6020	Total Recoverable
Sodium	330000		1000	1000	ug/L	1		6020	Total Recoverable
Chloride	830		10	10	mg/L	10		9056A	Total/NA
Fluoride	0.42		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	390		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2200		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-07_20211021 — Lab Sample ID: 240-158615-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	490		100	100	ug/L	1		6010B	Total Recoverable
Arsenic	25		5.0	5.0	ug/L	1		6020	Total Recoverable
Barium	33		5.0	5.0	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-17-07_20211021 (Continued) — Lab Sample ID: 240-158615-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	370000		1000	1000	ug/L	1		6020	Total Recoverable
Cobalt	8.1		1.0	1.0	ug/L	1		6020	Total Recoverable
Iron	24000		100	100	ug/L	1		6020	Total Recoverable
Lithium	25		8.0	8.0	ug/L	1		6020	Total Recoverable
Magnesium	170000		1000	1000	ug/L	1		6020	Total Recoverable
Manganese	880		10	10	ug/L	1		6020	Total Recoverable
Molybdenum	14		5.0	5.0	ug/L	1		6020	Total Recoverable
Nickel	2.7		2.0	2.0	ug/L	1		6020	Total Recoverable
Potassium	1900		1000	1000	ug/L	1		6020	Total Recoverable
Sodium	1500000		1000	1000	ug/L	1		6020	Total Recoverable
Chloride	2300		25	25	mg/L	25		9056A	Total/NA
Fluoride	0.45		0.25	0.25	mg/L	5		9056A	Total/NA
Sulfate	1300		25	25	mg/L	25		9056A	Total/NA
Total Dissolved Solids	6000		50	50	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-01_20211020 — Lab Sample ID: 240-158615-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	150		100	100	ug/L	1		6010B	Total Recoverable
Barium	31		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	64000		1000	1000	ug/L	1		6020	Total Recoverable
Magnesium	19000		1000	1000	ug/L	1		6020	Total Recoverable
Manganese	400		10	10	ug/L	1		6020	Total Recoverable
Potassium	2900		1000	1000	ug/L	1		6020	Total Recoverable
Sodium	31000		1000	1000	ug/L	1		6020	Total Recoverable
Chloride	42		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.24		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	2.8		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	310		10	10	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-1

Client Sample ID: MW-16-01_20211020

Date Collected: 10/20/21 11:30
Date Received: 10/23/21 08:00

Lab Sample ID: 240-158615-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**480**		100	100	ug/L		10/26/21 14:00	10/28/21 02:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Arsenic	**200**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Barium	**120**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Cadmium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Calcium	**54000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:50	1
Chromium	5.0	U ^+	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Copper	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Iron	**4100**		100	100	ug/L		10/26/21 14:00	10/28/21 01:50	1
Lead	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Lithium	**34**		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Magnesium	**16000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:50	1
Manganese	**140**		10	10	ug/L		10/26/21 14:00	10/28/21 01:50	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Nickel	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Potassium	**5700**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:50	1
Selenium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Silver	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Sodium	**28000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:50	1
Thallium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Vanadium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:50	1
Zinc	20	U	20	20	ug/L		10/26/21 14:00	10/28/21 01:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		10/26/21 16:00	10/28/21 19:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**43**		1.0	1.0	mg/L			11/10/21 13:18	1
Fluoride	**1.5**		0.050	0.050	mg/L			11/10/21 13:18	1
Sulfate	**2.2**		1.0	1.0	mg/L			11/10/21 13:18	1
Total Dissolved Solids	**260**		10	10	mg/L			10/27/21 07:54	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-1

Client Sample ID: MW-16-02_20211020

Date Collected: 10/20/21 10:20
Date Received: 10/23/21 08:00

Lab Sample ID: 240-158615-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**280**		100	100	ug/L		10/26/21 14:00	10/28/21 02:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Barium	**27**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Cadmium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Calcium	**61000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:53	1
Chromium	5.0	U ^+	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Copper	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Iron	**550**		100	100	ug/L		10/26/21 14:00	10/28/21 01:53	1
Lead	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Lithium	**14**		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Magnesium	**17000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:53	1
Manganese	**250**		10	10	ug/L		10/26/21 14:00	10/28/21 01:53	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Nickel	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Potassium	**3700**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:53	1
Selenium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Silver	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Sodium	**31000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:53	1
Thallium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Vanadium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:53	1
Zinc	20	U	20	20	ug/L		10/26/21 14:00	10/28/21 01:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		10/26/21 16:00	10/28/21 19:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**45**		1.0	1.0	mg/L			11/10/21 13:40	1
Fluoride	**0.53**		0.050	0.050	mg/L			11/10/21 13:40	1
Sulfate	**1.5**		1.0	1.0	mg/L			11/10/21 13:40	1
Total Dissolved Solids	**310**		10	10	mg/L			10/27/21 07:54	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-1

Client Sample ID: MW-16-03_20211020

Date Collected: 10/20/21 09:25
Date Received: 10/23/21 08:00

Lab Sample ID: 240-158615-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**150**		100	100	ug/L		10/26/21 14:00	10/28/21 02:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Barium	**30**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Cadmium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Calcium	**63000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:55	1
Chromium	5.0	U ^+	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Copper	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Iron	100	U	100	100	ug/L		10/26/21 14:00	10/28/21 01:55	1
Lead	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Lithium	8.0	U	8.0	8.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Magnesium	**19000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:55	1
Manganese	**390**		10	10	ug/L		10/26/21 14:00	10/28/21 01:55	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Nickel	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Potassium	**2900**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:55	1
Selenium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Silver	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Sodium	**30000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:55	1
Thallium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Vanadium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:55	1
Zinc	20	U	20	20	ug/L		10/26/21 14:00	10/28/21 01:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		10/26/21 16:00	10/28/21 19:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**42**		1.0	1.0	mg/L			11/10/21 14:45	1
Fluoride	**0.24**		0.050	0.050	mg/L			11/10/21 14:45	1
Sulfate	**2.7**		1.0	1.0	mg/L			11/10/21 14:45	1
Total Dissolved Solids	**340**		10	10	mg/L			10/27/21 07:54	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-1

Client Sample ID: MW-17-06_20211020

Date Collected: 10/20/21 12:55
Date Received: 10/23/21 08:00

Lab Sample ID: 240-158615-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**360**		100	100	ug/L		10/26/21 14:00	10/28/21 03:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Arsenic	**17**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Barium	**110**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Cadmium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Calcium	**240000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:58	1
Chromium	5.0	U ^+	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Copper	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Iron	**14000**		100	100	ug/L		10/26/21 14:00	10/28/21 01:58	1
Lead	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Lithium	**17**		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Magnesium	**130000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:58	1
Manganese	**290**		10	10	ug/L		10/26/21 14:00	10/28/21 01:58	1
Molybdenum	**8.5**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Nickel	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Potassium	**2300**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:58	1
Selenium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Silver	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Sodium	**330000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 01:58	1
Thallium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Vanadium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 01:58	1
Zinc	20	U	20	20	ug/L		10/26/21 14:00	10/28/21 01:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		10/26/21 16:00	10/28/21 19:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**830**		10	10	mg/L			11/10/21 15:29	10
Fluoride	**0.42**		0.050	0.050	mg/L			11/10/21 15:07	1
Sulfate	**390**		10	10	mg/L			11/10/21 15:29	10
Total Dissolved Solids	**2200**		40	40	mg/L			10/27/21 07:54	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-1

Client Sample ID: MW-17-07_20211021
Date Collected: 10/21/21 13:00
Date Received: 10/23/21 08:00

Lab Sample ID: 240-158615-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**490**		100	100	ug/L		10/26/21 14:00	10/28/21 03:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Arsenic	**25**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Barium	**33**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Cadmium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Calcium	**370000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 02:00	1
Chromium	5.0	U ^+	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Cobalt	**8.1**		1.0	1.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Copper	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Iron	**24000**		100	100	ug/L		10/26/21 14:00	10/28/21 02:00	1
Lead	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Lithium	**25**		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Magnesium	**170000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 02:00	1
Manganese	**880**		10	10	ug/L		10/26/21 14:00	10/28/21 02:00	1
Molybdenum	**14**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Nickel	**2.7**		2.0	2.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Potassium	**1900**		1000	1000	ug/L		10/26/21 14:00	10/28/21 02:00	1
Selenium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Silver	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Sodium	**1500000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 02:00	1
Thallium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Vanadium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 02:00	1
Zinc	20	U	20	20	ug/L		10/26/21 14:00	10/28/21 02:00	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		10/26/21 16:00	10/28/21 19:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2300**		25	25	mg/L			11/10/21 16:56	25
Fluoride	**0.45**		0.25	0.25	mg/L			11/10/21 15:51	5
Sulfate	**1300**		25	25	mg/L			11/10/21 16:56	25
Total Dissolved Solids	**6000**		50	50	mg/L			10/28/21 08:38	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-1

Client Sample ID: DUP-01_20211020

Date Collected: 10/20/21 00:00
Date Received: 10/23/21 08:00

Lab Sample ID: 240-158615-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**150**		100	100	ug/L		10/26/21 14:00	10/28/21 03:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Barium	**31**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Cadmium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Calcium	**64000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 02:03	1
Chromium	5.0	U ^+	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Copper	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Iron	100	U	100	100	ug/L		10/26/21 14:00	10/28/21 02:03	1
Lead	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Lithium	8.0	U	8.0	8.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Magnesium	**19000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 02:03	1
Manganese	**400**		10	10	ug/L		10/26/21 14:00	10/28/21 02:03	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Nickel	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Potassium	**2900**		1000	1000	ug/L		10/26/21 14:00	10/28/21 02:03	1
Selenium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Silver	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Sodium	**31000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 02:03	1
Thallium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Vanadium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 02:03	1
Zinc	20	U	20	20	ug/L		10/26/21 14:00	10/28/21 02:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		10/26/21 16:00	10/28/21 19:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**42**		1.0	1.0	mg/L			11/10/21 17:17	1
Fluoride	**0.24**		0.050	0.050	mg/L			11/10/21 17:17	1
Sulfate	**2.8**		1.0	1.0	mg/L			11/10/21 17:17	1
Total Dissolved Solids	**310**		10	10	mg/L			10/27/21 07:54	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-509907/1-A
Matrix: Water
Analysis Batch: 510254

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 509907

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	100	ug/L		10/26/21 14:00	10/28/21 01:04	1

Lab Sample ID: LCS 240-509907/2-A
Matrix: Water
Analysis Batch: 510254

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 509907

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	1020		ug/L		102	80 - 120

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-509907/1-A
Matrix: Water
Analysis Batch: 510255

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 509907

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Barium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Cadmium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Calcium	1000	U	1000	1000	ug/L		10/26/21 14:00	10/28/21 00:51	1
Chromium	5.0	U ^+	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Copper	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Iron	100	U	100	100	ug/L		10/26/21 14:00	10/28/21 00:51	1
Lead	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Lithium	8.0	U	8.0	8.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Magnesium	1000	U	1000	1000	ug/L		10/26/21 14:00	10/28/21 00:51	1
Manganese	10	U	10	10	ug/L		10/26/21 14:00	10/28/21 00:51	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Nickel	2.0	U	2.0	2.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Potassium	1000	U	1000	1000	ug/L		10/26/21 14:00	10/28/21 00:51	1
Selenium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Silver	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Sodium	1000	U	1000	1000	ug/L		10/26/21 14:00	10/28/21 00:51	1
Thallium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Vanadium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 00:51	1
Zinc	20	U	20	20	ug/L		10/26/21 14:00	10/28/21 00:51	1

Lab Sample ID: LCS 240-509907/3-A
Matrix: Water
Analysis Batch: 510255

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 509907

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	100	97.5		ug/L		98	80 - 120
Arsenic	2000	1790		ug/L		90	80 - 120
Barium	2000	1970		ug/L		98	80 - 120
Beryllium	1000	939		ug/L		94	80 - 120

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

Lab Sample ID: LCS 240-509907/3-A
Matrix: Water
Analysis Batch: 510255

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 509907

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	1000	971		ug/L		97	80 - 120
Calcium	25000	23900		ug/L		96	80 - 120
Cobalt	1000	942		ug/L		94	80 - 120
Copper	1000	929		ug/L		93	80 - 120
Iron	5000	4850		ug/L		97	80 - 120
Lead	1000	1010		ug/L		101	80 - 120
Lithium	1000	930		ug/L		93	80 - 120
Magnesium	25000	23800		ug/L		95	80 - 120
Manganese	1000	930		ug/L		93	80 - 120
Molybdenum	1000	972		ug/L		97	80 - 120
Nickel	1000	936		ug/L		94	80 - 120
Potassium	25000	23600		ug/L		94	80 - 120
Selenium	2000	1800		ug/L		90	80 - 120
Silver	100	93.2		ug/L		93	80 - 120
Sodium	25000	24300		ug/L		97	80 - 120
Thallium	2000	1980		ug/L		99	80 - 120
Vanadium	1000	933		ug/L		93	80 - 120
Zinc	500	450		ug/L		90	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-509908/1-A
Matrix: Water
Analysis Batch: 510451

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 509908

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		10/26/21 16:00	10/28/21 19:00	1

Lab Sample ID: LCS 240-509908/2-A
Matrix: Water
Analysis Batch: 510451

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 509908

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.52		ug/L		110	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-511988/3
Matrix: Water
Analysis Batch: 511988

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			11/10/21 03:53	1
Fluoride	0.050	U	0.050	0.050	mg/L			11/10/21 03:53	1
Sulfate	1.0	U	1.0	1.0	mg/L			11/10/21 03:53	1

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

Lab Sample ID: LCS 240-511988/4
Matrix: Water
Analysis Batch: 511988

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	51.9		mg/L		104	90 - 110		
Fluoride			2.50	2.67		mg/L		107	90 - 110		
Sulfate			50.0	53.1		mg/L		106	90 - 110		

Lab Sample ID: 240-158615-2 MS
Matrix: Water
Analysis Batch: 511988

Client Sample ID: MW-16-02_20211020
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	45		50.0	98.3		mg/L		106	80 - 120		
Fluoride	0.53		2.50	3.35		mg/L		113	80 - 120		
Sulfate	1.5		50.0	56.4		mg/L		110	80 - 120		

Lab Sample ID: 240-158615-2 MSD
Matrix: Water
Analysis Batch: 511988

Client Sample ID: MW-16-02_20211020
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	45		50.0	99.9		mg/L		109	80 - 120	2	15
Fluoride	0.53		2.50	3.44		mg/L		116	80 - 120	3	15
Sulfate	1.5		50.0	58.4		mg/L		114	80 - 120	3	15

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

Lab Sample ID: MB 240-510070/1
Matrix: Water
Analysis Batch: 510070

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			10/27/21 07:54	1

Lab Sample ID: LCS 240-510070/2
Matrix: Water
Analysis Batch: 510070

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	492		mg/L		98	80 - 120		

Lab Sample ID: 240-158615-1 DU
Matrix: Water
Analysis Batch: 510070

Client Sample ID: MW-16-01_20211020
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	260			297		mg/L				14	20

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

Lab Sample ID: MB 240-510261/1
Matrix: Water
Analysis Batch: 510261

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			10/28/21 08:38	1

Lab Sample ID: LCS 240-510261/2
Matrix: Water
Analysis Batch: 510261

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	516		mg/L		103	80 - 120

Metals

Prep Batch: 509907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158615-1	MW-16-01_20211020	Total Recoverable	Water	3005A	
240-158615-2	MW-16-02_20211020	Total Recoverable	Water	3005A	
240-158615-3	MW-16-03_20211020	Total Recoverable	Water	3005A	
240-158615-4	MW-17-06_20211020	Total Recoverable	Water	3005A	
240-158615-5	MW-17-07_20211021	Total Recoverable	Water	3005A	
240-158615-6	DUP-01_20211020	Total Recoverable	Water	3005A	
MB 240-509907/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-509907/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-509907/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 509908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158615-1	MW-16-01_20211020	Total/NA	Water	7470A	
240-158615-2	MW-16-02_20211020	Total/NA	Water	7470A	
240-158615-3	MW-16-03_20211020	Total/NA	Water	7470A	
240-158615-4	MW-17-06_20211020	Total/NA	Water	7470A	
240-158615-5	MW-17-07_20211021	Total/NA	Water	7470A	
240-158615-6	DUP-01_20211020	Total/NA	Water	7470A	
MB 240-509908/1-A	Method Blank	Total/NA	Water	7470A	
LCS 240-509908/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 510254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158615-1	MW-16-01_20211020	Total Recoverable	Water	6010B	509907
240-158615-2	MW-16-02_20211020	Total Recoverable	Water	6010B	509907
240-158615-3	MW-16-03_20211020	Total Recoverable	Water	6010B	509907
240-158615-4	MW-17-06_20211020	Total Recoverable	Water	6010B	509907
240-158615-5	MW-17-07_20211021	Total Recoverable	Water	6010B	509907
240-158615-6	DUP-01_20211020	Total Recoverable	Water	6010B	509907
MB 240-509907/1-A	Method Blank	Total Recoverable	Water	6010B	509907
LCS 240-509907/2-A	Lab Control Sample	Total Recoverable	Water	6010B	509907

Analysis Batch: 510255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158615-1	MW-16-01_20211020	Total Recoverable	Water	6020	509907
240-158615-2	MW-16-02_20211020	Total Recoverable	Water	6020	509907
240-158615-3	MW-16-03_20211020	Total Recoverable	Water	6020	509907
240-158615-4	MW-17-06_20211020	Total Recoverable	Water	6020	509907
240-158615-5	MW-17-07_20211021	Total Recoverable	Water	6020	509907
240-158615-6	DUP-01_20211020	Total Recoverable	Water	6020	509907
MB 240-509907/1-A	Method Blank	Total Recoverable	Water	6020	509907
LCS 240-509907/3-A	Lab Control Sample	Total Recoverable	Water	6020	509907

Analysis Batch: 510451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158615-1	MW-16-01_20211020	Total/NA	Water	7470A	509908
240-158615-2	MW-16-02_20211020	Total/NA	Water	7470A	509908
240-158615-3	MW-16-03_20211020	Total/NA	Water	7470A	509908
240-158615-4	MW-17-06_20211020	Total/NA	Water	7470A	509908
240-158615-5	MW-17-07_20211021	Total/NA	Water	7470A	509908
240-158615-6	DUP-01_20211020	Total/NA	Water	7470A	509908

Metals (Continued)

Analysis Batch: 510451 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-509908/1-A	Method Blank	Total/NA	Water	7470A	509908
LCS 240-509908/2-A	Lab Control Sample	Total/NA	Water	7470A	509908

General Chemistry

Analysis Batch: 510070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158615-1	MW-16-01_20211020	Total/NA	Water	SM 2540C	
240-158615-2	MW-16-02_20211020	Total/NA	Water	SM 2540C	
240-158615-3	MW-16-03_20211020	Total/NA	Water	SM 2540C	
240-158615-4	MW-17-06_20211020	Total/NA	Water	SM 2540C	
240-158615-6	DUP-01_20211020	Total/NA	Water	SM 2540C	
MB 240-510070/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-510070/2	Lab Control Sample	Total/NA	Water	SM 2540C	
240-158615-1 DU	MW-16-01_20211020	Total/NA	Water	SM 2540C	

Analysis Batch: 510261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158615-5	MW-17-07_20211021	Total/NA	Water	SM 2540C	
MB 240-510261/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-510261/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 511988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158615-1	MW-16-01_20211020	Total/NA	Water	9056A	
240-158615-2	MW-16-02_20211020	Total/NA	Water	9056A	
240-158615-3	MW-16-03_20211020	Total/NA	Water	9056A	
240-158615-4	MW-17-06_20211020	Total/NA	Water	9056A	
240-158615-4	MW-17-06_20211020	Total/NA	Water	9056A	
240-158615-5	MW-17-07_20211021	Total/NA	Water	9056A	
240-158615-5	MW-17-07_20211021	Total/NA	Water	9056A	
240-158615-6	DUP-01_20211020	Total/NA	Water	9056A	
MB 240-511988/3	Method Blank	Total/NA	Water	9056A	
LCS 240-511988/4	Lab Control Sample	Total/NA	Water	9056A	
240-158615-2 MS	MW-16-02_20211020	Total/NA	Water	9056A	
240-158615-2 MSD	MW-16-02_20211020	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-1

Client Sample ID: MW-16-01_20211020

Lab Sample ID: 240-158615-1

Date Collected: 10/20/21 11:30

Matrix: Water

Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509907	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510254	10/28/21 02:47	RKT	TAL CAN
Total Recoverable	Prep	3005A			509907	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510255	10/28/21 01:50	AJC	TAL CAN
Total/NA	Prep	7470A			509908	10/26/21 16:00	SHB	TAL CAN
Total/NA	Analysis	7470A		1	510451	10/28/21 19:46	DSH	TAL CAN
Total/NA	Analysis	9056A		1	511988	11/10/21 13:18	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510070	10/27/21 07:54	AJ	TAL CAN

Client Sample ID: MW-16-02_20211020

Lab Sample ID: 240-158615-2

Date Collected: 10/20/21 10:20

Matrix: Water

Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509907	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510254	10/28/21 02:52	RKT	TAL CAN
Total Recoverable	Prep	3005A			509907	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510255	10/28/21 01:53	AJC	TAL CAN
Total/NA	Prep	7470A			509908	10/26/21 16:00	SHB	TAL CAN
Total/NA	Analysis	7470A		1	510451	10/28/21 19:48	DSH	TAL CAN
Total/NA	Analysis	9056A		1	511988	11/10/21 13:40	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510070	10/27/21 07:54	AJ	TAL CAN

Client Sample ID: MW-16-03_20211020

Lab Sample ID: 240-158615-3

Date Collected: 10/20/21 09:25

Matrix: Water

Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509907	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510254	10/28/21 02:56	RKT	TAL CAN
Total Recoverable	Prep	3005A			509907	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510255	10/28/21 01:55	AJC	TAL CAN
Total/NA	Prep	7470A			509908	10/26/21 16:00	SHB	TAL CAN
Total/NA	Analysis	7470A		1	510451	10/28/21 19:50	DSH	TAL CAN
Total/NA	Analysis	9056A		1	511988	11/10/21 14:45	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510070	10/27/21 07:54	AJ	TAL CAN

Client Sample ID: MW-17-06_20211020

Lab Sample ID: 240-158615-4

Date Collected: 10/20/21 12:55

Matrix: Water

Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509907	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510254	10/28/21 03:00	RKT	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-1

Client Sample ID: MW-17-06_20211020

Lab Sample ID: 240-158615-4

Date Collected: 10/20/21 12:55
Matrix: Water
Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509907	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510255	10/28/21 01:58	AJC	TAL CAN
Total/NA	Prep	7470A			509908	10/26/21 16:00	SHB	TAL CAN
Total/NA	Analysis	7470A		1	510451	10/28/21 19:52	DSH	TAL CAN
Total/NA	Analysis	9056A		1	511988	11/10/21 15:07	JWW	TAL CAN
Total/NA	Analysis	9056A		10	511988	11/10/21 15:29	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510070	10/27/21 07:54	AJ	TAL CAN

Client Sample ID: MW-17-07_20211021

Lab Sample ID: 240-158615-5

Date Collected: 10/21/21 13:00
Matrix: Water
Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509907	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510254	10/28/21 03:05	RKT	TAL CAN
Total Recoverable	Prep	3005A			509907	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510255	10/28/21 02:00	AJC	TAL CAN
Total/NA	Prep	7470A			509908	10/26/21 16:00	SHB	TAL CAN
Total/NA	Analysis	7470A		1	510451	10/28/21 19:54	DSH	TAL CAN
Total/NA	Analysis	9056A		5	511988	11/10/21 15:51	JWW	TAL CAN
Total/NA	Analysis	9056A		25	511988	11/10/21 16:56	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510261	10/28/21 08:38	AJ	TAL CAN

Client Sample ID: DUP-01_20211020

Lab Sample ID: 240-158615-6

Date Collected: 10/20/21 00:00
Matrix: Water
Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509907	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510254	10/28/21 03:10	RKT	TAL CAN
Total Recoverable	Prep	3005A			509907	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510255	10/28/21 02:03	AJC	TAL CAN
Total/NA	Prep	7470A			509908	10/26/21 16:00	SHB	TAL CAN
Total/NA	Analysis	7470A		1	510451	10/28/21 19:56	DSH	TAL CAN
Total/NA	Analysis	9056A		1	511988	11/10/21 17:17	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510070	10/27/21 07:54	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: 240-158615-1
Project/Site: CCR DTE RRRP

Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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

Chain of Custody Record

MICHIGAN 190

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Client Information	Sampler: B. YELEN	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-87281-30604.1
Client Contact: Mr. Vincent Buening	Phone:	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: TRC Environmental Corporation.	PWSID:	Analysis Requested		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~~ 164688			
Email: vbuening@trccompanies.com	WO #: 413519.0005			
Project Name: CCR DTE RRPP CCR	Project #: 24016806			
Site: Michigan	SSOW#:			

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd TDS, 9056A_28D Chloride, Sulfate, Fluoride	6010B Ba, 6020 Ca,Sb,AsBa,Be,Cd,Cr,Co,Li,Mo,Se,Tl, 7470 Hg	9315_Ra226 - Standard Target List	9320_Ra228, Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	D	D		
MW-16-01_20211020	10.20.21	1130	G	Water	N	N	X	X	X	X		
MW-16-02_20211020		1020		Water			X	X	X	X		
MW-16-03_20211020		0925		Water			X	X	X	X		
~~MW-16-06~~ MW-17-06_20211020		1255		Water			X	X	X	X		
~~MW-16-07~~ MW-17-07_20211021	10.21.21	1300		Water			X	X	X	X		
DUP-01_20211020	10.20.21			Water			X	X	X	X		
				Water								

240-158615 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
B. YELEN	10.21.21 1700	TRC	TRC STOR.	10.21.21 1700	TRC
[signature]	10/22/21 1135	TRC	[signature]	10/22/21 1131	GT
[signature]	10/22/21 1430	GT	[signature]	10-23-21 0800	TA

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

11/11/2021

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 158615**
Canton Facility

Client TRC Site Name _____ Cooler unpacked by: Brandon

Cooler Received on 10-23-21 Opened on 10-25-21

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

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

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

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

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

Concerning _____

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

Samples processed by:

19. SAMPLE CONDITION

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

20. SAMPLE PRESERVATION

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

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login # : 158615

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form				
Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	**IR-14** IR-15	1.3	1.4	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	**IR-14** IR-15	2.4	2.5	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	**IR-14** IR-15	3.3	3.4	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	**IR-14** IR-15	4.2	4.3	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	**IR-14** IR-15	1.9	2.0	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	**IR-14** IR-15	0.7	0.8	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	**IR-14** IR-15	3.8	3.9	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	**IR-14** IR-15	4.1	4.2	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
				☐ See Temperature Excursion Form

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

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-01_20211020	240-158615-B-1	Plastic 500ml - with Nitric Acid	<2			
MW-16-01_20211020	240-158615-C-1	Plastic 1 liter - Nitric Acid	<2			
MW-16-01_20211020	240-158615-D-1	Plastic 1 liter - Nitric Acid	<2			
MW-16-02_20211020	240-158615-B-2	Plastic 500ml - with Nitric Acid	<2			
MW-16-02_20211020	240-158615-C-2	Plastic 1 liter - Nitric Acid	<2			
MW-16-02_20211020	240-158615-D-2	Plastic 1 liter - Nitric Acid	<2			
MW-16-03_20211020	240-158615-B-3	Plastic 500ml - with Nitric Acid	<2			
MW-16-03_20211020	240-158615-C-3	Plastic 1 liter - Nitric Acid	<2			
MW-16-03_20211020	240-158615-D-3	Plastic 1 liter - Nitric Acid	<2			
MW-17-06_20211020	240-158615-B-4	Plastic 500ml - with Nitric Acid	<2			
MW-17-06_20211020	240-158615-C-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-06_20211020	240-158615-D-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-07_20211021	240-158615-B-5	Plastic 500ml - with Nitric Acid	<2			
MW-17-07_20211021	240-158615-C-5	Plastic 1 liter - Nitric Acid	<2			
MW-17-07_20211021	240-158615-D-5	Plastic 1 liter - Nitric Acid	<2			
DUP-01_20211020	240-158615-B-6	Plastic 500ml - with Nitric Acid	<2			
DUP-01_20211020	240-158615-C-6	Plastic 1 liter - Nitric Acid	<2			
DUP-01_20211020	240-158615-D-6	Plastic 1 liter - Nitric Acid	<2			

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ANALYTICAL REPORT

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

Laboratory Job ID: 240-158615-2
Client Project/Site: CCR DTE RRRP

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

Attn: Mr. Vincent Buening

Authorized for release by:
11/24/2021 8:41:38 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

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: 240-158615-2

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-158615-2

Comments
No additional comments.

Receipt
The samples were received on 10/23/2021 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 8 coolers at receipt time were 0.8º C, 1.4º C, 2.0º C, 2.5º C, 3.4º C, 3.9º C, 4.2º C and 4.3º C.

RAD
Methods 903.0, 9315: Radium 226 batch 534284
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-16-01_20211020 (240-158615-1), (LCS 160-534284/1-A), (LCSD 160-534284/2-A) and (MB 160-534284/18-A)

Methods 903.0, 9315: Radium 226 batch 534284
The LCS recovered at (71%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (67-118) per method requirements. The LCS passes, no further action is required (LCS 160-534284/1-A)

Methods 903.0, 9315: Radium-226 prep batch 160-533998:
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
MW-16-02_20211020 (240-158615-2), MW-16-03_20211020 (240-158615-3), MW-17-06_20211020 (240-158615-4), MW-17-07_20211021 (240-158615-5), DUP-01_20211020 (240-158615-6), (LCS 160-533998/1-A), (LCSD 160-533998/2-A) and (MB 160-533998/23-A)

Methods 904.0, 9320: Radium 228 batch 534288
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-16-01_20211020 (240-158615-1), (LCS 160-534288/1-A), (LCSD 160-534288/2-A) and (MB 160-534288/18-A)

Methods 904.0, 9320: Radium-228 prep batch 160-534002:
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-16-02_20211020 (240-158615-2), MW-16-03_20211020 (240-158615-3), MW-17-06_20211020 (240-158615-4), MW-17-07_20211021 (240-158615-5), DUP-01_20211020 (240-158615-6), (LCS 160-534002/1-A), (LCSD 160-534002/2-A) and (MB 160-534002/23-A)

Method PrecSep_0: Radium-228 Prep Batch 160-534002
The following samples were prepared at a reduced aliquot due to Matrix: MW-16-02_20211020 (240-158615-2), MW-16-03_20211020 (240-158615-3), MW-17-06_20211020 (240-158615-4), MW-17-07_20211021 (240-158615-5) and DUP-01_20211020 (240-158615-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0: Radium-228 Prep Batch 160-534288
The following samples were prepared at a reduced aliquot due to Matrix: MW-16-01_20211020 (240-158615-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Job ID: 240-158615-2 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

Method PrecSep-21: Radium-226 Prep Batch 160-533998
The following samples were prepared at a reduced aliquot due to Matrix: MW-16-02_20211020 (240-158615-2), MW-16-03_20211020 (240-158615-3), MW-17-06_20211020 (240-158615-4), MW-17-07_20211021 (240-158615-5) and DUP-01_20211020 (240-158615-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-534284
The following samples were prepared at a reduced aliquot due to Matrix: MW-16-01_20211020 (240-158615-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

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 RRRP

Job ID: 240-158615-2

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-158615-1	MW-16-01_20211020	Water	10/20/21 11:30	10/23/21 08:00
240-158615-2	MW-16-02_20211020	Water	10/20/21 10:20	10/23/21 08:00
240-158615-3	MW-16-03_20211020	Water	10/20/21 09:25	10/23/21 08:00
240-158615-4	MW-17-06_20211020	Water	10/20/21 12:55	10/23/21 08:00
240-158615-5	MW-17-07_20211021	Water	10/21/21 13:00	10/23/21 08:00
240-158615-6	DUP-01_20211020	Water	10/20/21 00:00	10/23/21 08:00

Detection Summary

Client: TRC Environmental Corporation.
Job ID: 240-158615-2
Project/Site: CCR DTE RRRP

Client Sample ID: MW-16-01_20211020 — Lab Sample ID: 240-158615-1

No Detections.

Client Sample ID: MW-16-02_20211020 — Lab Sample ID: 240-158615-2

No Detections.

Client Sample ID: MW-16-03_20211020 — Lab Sample ID: 240-158615-3

No Detections.

Client Sample ID: MW-17-06_20211020 — Lab Sample ID: 240-158615-4

No Detections.

Client Sample ID: MW-17-07_20211021 — Lab Sample ID: 240-158615-5

No Detections.

Client Sample ID: DUP-01_20211020 — Lab Sample ID: 240-158615-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16-01_20211020

Date Collected: 10/20/21 11:30
Date Received: 10/23/21 08:00

Lab Sample ID: 240-158615-1

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.620**		0.395	0.399	1.00	0.563	pCi/L	10/29/21 13:06	11/18/21 20:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*10/29/21 13:06*	*11/18/21 20:43*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.173	U	0.297	0.297	1.00	0.503	pCi/L	10/29/21 13:44	11/18/21 16:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*10/29/21 13:44*	*11/18/21 16:29*	*1*
Y Carrier	*86.7*		*40 - 110*	*10/29/21 13:44*	*11/18/21 16:29*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.793**		0.494	0.497	5.00	0.563	pCi/L		11/22/21 21:03	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-2

Client Sample ID: MW-16-02_20211020
Date Collected: 10/20/21 10:20
Date Received: 10/23/21 08:00

Lab Sample ID: 240-158615-2
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.214	U	0.162	0.163	1.00	0.236	pCi/L	10/28/21 09:58	11/22/21 21:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*40 - 110*	*10/28/21 09:58*	*11/22/21 21:52*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.168	U	0.316	0.317	1.00	0.541	pCi/L	10/28/21 11:04	11/19/21 17:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*40 - 110*	*10/28/21 11:04*	*11/19/21 17:38*	*1*
Y Carrier	*80.0*		*40 - 110*	*10/28/21 11:04*	*11/19/21 17:38*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.382	U	0.355	0.356	5.00	0.541	pCi/L		11/24/21 17:15	1

Client Sample ID: MW-16-03_20211020

Date Collected: 10/20/21 09:25
Date Received: 10/23/21 08:00

Lab Sample ID: 240-158615-3

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**1.08**		0.284	0.300	1.00	0.259	pCi/L	10/28/21 09:58	11/22/21 20:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.0*		*40 - 110*	*10/28/21 09:58*	*11/22/21 20:03*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.343	U	0.360	0.362	1.00	0.588	pCi/L	10/28/21 11:04	11/19/21 17:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.0*		*40 - 110*	*10/28/21 11:04*	*11/19/21 17:38*	*1*
Y Carrier	*83.4*		*40 - 110*	*10/28/21 11:04*	*11/19/21 17:38*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.42**		0.459	0.470	5.00	0.588	pCi/L		11/24/21 17:15	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-2

Client Sample ID: MW-17-06_20211020
Date Collected: 10/20/21 12:55
Date Received: 10/23/21 08:00

Lab Sample ID: 240-158615-4
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.47		0.308	0.335	1.00	0.225	pCi/L	10/28/21 09:58	11/22/21 20:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*10/28/21 09:58*	*11/22/21 20:03*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.66		0.456	0.481	1.00	0.581	pCi/L	10/28/21 11:04	11/19/21 17:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*98.8*		*40 - 110*	*10/28/21 11:04*	*11/19/21 17:39*	*1*
Y Carrier	*85.2*		*40 - 110*	*10/28/21 11:04*	*11/19/21 17:39*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	3.14		0.550	0.586	5.00	0.581	pCi/L		11/24/21 17:15	1

Client Sample ID: MW-17-07_20211021

Date Collected: 10/21/21 13:00
Date Received: 10/23/21 08:00

Lab Sample ID: 240-158615-5

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.53		0.492	0.510	1.00	0.530	pCi/L	10/28/21 09:58	11/22/21 20:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.5*		*40 - 110*	*10/28/21 09:58*	*11/22/21 20:03*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.995		0.646	0.652	1.00	0.986	pCi/L	10/28/21 11:04	11/19/21 17:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.5*		*40 - 110*	*10/28/21 11:04*	*11/19/21 17:39*	*1*
Y Carrier	*84.1*		*40 - 110*	*10/28/21 11:04*	*11/19/21 17:39*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.52		0.812	0.828	5.00	0.986	pCi/L		11/24/21 17:15	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-2

Client Sample ID: DUP-01_20211020

Date Collected: 10/20/21 00:00
Date Received: 10/23/21 08:00

Lab Sample ID: 240-158615-6

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.415		0.184	0.188	1.00	0.218	pCi/L	10/28/21 09:58	11/22/21 21:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*10/28/21 09:58*	*11/22/21 21:58*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0277	U	0.365	0.365	1.00	0.650	pCi/L	10/28/21 11:04	11/19/21 17:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*10/28/21 11:04*	*11/19/21 17:39*	*1*
Y Carrier	*84.9*		*40 - 110*	*10/28/21 11:04*	*11/19/21 17:39*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.388	U	0.409	0.411	5.00	0.650	pCi/L		11/24/21 17:15	1

Tracer/Carrier Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-2

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
240-158615-1	MW-16-01_20211020	95.3
240-158615-2	MW-16-02_20211020	93.8
240-158615-3	MW-16-03_20211020	97.0
240-158615-4	MW-17-06_20211020	98.8
240-158615-5	MW-17-07_20211021	78.5
240-158615-6	DUP-01_20211020	102
LCS 160-533998/1-A	Lab Control Sample	75.5
LCS 160-534284/1-A	Lab Control Sample	101
LCSD 160-533998/2-A	Lab Control Sample Dup	92.8
LCSD 160-534284/2-A	Lab Control Sample Dup	94.0
MB 160-533998/23-A	Method Blank	102
MB 160-534284/18-A	Method Blank	94.8

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
240-158615-1	MW-16-01_20211020	95.3	86.7
240-158615-2	MW-16-02_20211020	93.8	80.0
240-158615-3	MW-16-03_20211020	97.0	83.4
240-158615-4	MW-17-06_20211020	98.8	85.2
240-158615-5	MW-17-07_20211021	78.5	84.1
240-158615-6	DUP-01_20211020	102	84.9
LCS 160-534002/1-A	Lab Control Sample	75.5	83.4
LCS 160-534288/1-A	Lab Control Sample	101	84.9
LCSD 160-534002/2-A	Lab Control Sample Dup	92.8	83.7
LCSD 160-534288/2-A	Lab Control Sample Dup	94.0	87.1
MB 160-534002/23-A	Method Blank	102	89.0
MB 160-534288/18-A	Method Blank	94.8	92.0

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-533998/23-A
Matrix: Water
Analysis Batch: 537997

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 533998

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.4705		0.193	0.197	1.00	0.221	pCi/L	10/28/21 09:58	11/22/21 21:51	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*40 - 110*	*10/28/21 09:58*	*11/22/21 21:51*	*1*

Lab Sample ID: LCS 160-533998/1-A
Matrix: Water
Analysis Batch: 537997

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 533998

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			15.1	12.74		1.48	1.00	0.294	pCi/L	84	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*75.5*		*40 - 110*

Lab Sample ID: LCSD 160-533998/2-A
Matrix: Water
Analysis Batch: 537997

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 533998

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			15.1	14.61		1.61	1.00	0.226	pCi/L	97	75 - 125	0.61	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*92.8*		*40 - 110*

Lab Sample ID: MB 160-534284/18-A
Matrix: Water
Analysis Batch: 537292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 534284

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.1614	U	0.267	0.267	1.00	0.587	pCi/L	10/29/21 13:06	11/18/21 20:46	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.8*		*40 - 110*	*10/29/21 13:06*	*11/18/21 20:46*	*1*

Lab Sample ID: LCS 160-534284/1-A
Matrix: Water
Analysis Batch: 537291

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 534284

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			15.1	10.77		1.49	1.00	0.464	pCi/L	71	75 - 125		

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-534284/1-A
Matrix: Water
Analysis Batch: 537291

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 534284

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	101		40 - 110

Lab Sample ID: LCSD 160-534284/2-A
Matrix: Water
Analysis Batch: 537291

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 534284

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			15.1	13.64		1.80	1.00	0.579	pCi/L	90	75 - 125	0.87	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	94.0		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-534002/23-A
Matrix: Water
Analysis Batch: 537574

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 534002

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.008447	U	0.309	0.309	1.00	0.551	pCi/L	10/28/21 11:04	11/19/21 17:42	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110	10/28/21 11:04	11/19/21 17:42	1
Y Carrier	89.0		40 - 110	10/28/21 11:04	11/19/21 17:42	1

Lab Sample ID: LCS 160-534002/1-A
Matrix: Water
Analysis Batch: 537539

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 534002

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.2	10.99		1.45	1.00	0.768	pCi/L	90	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	75.5		40 - 110
Y Carrier	83.4		40 - 110

Lab Sample ID: LCSD 160-534002/2-A
Matrix: Water
Analysis Batch: 537539

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 534002

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			12.2	10.80		1.34	1.00	0.566	pCi/L	89	75 - 125	0.07	1

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-534002/2-A
Matrix: Water
Analysis Batch: 537539

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 534002

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	92.8		40 - 110
Y Carrier	83.7		40 - 110

Lab Sample ID: MB 160-534288/18-A
Matrix: Water
Analysis Batch: 537490

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 534288

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2033	U	0.310	0.311	1.00	0.521	pCi/L	10/29/21 13:44	11/18/21 16:43	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.8		40 - 110	10/29/21 13:44	11/18/21 16:43	1
Y Carrier	92.0		40 - 110	10/29/21 13:44	11/18/21 16:43	1

Lab Sample ID: LCS 160-534288/1-A
Matrix: Water
Analysis Batch: 537275

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 534288

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.2	11.18		1.31	1.00	0.393	pCi/L	92	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	84.9		40 - 110

Lab Sample ID: LCSD 160-534288/2-A
Matrix: Water
Analysis Batch: 537275

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 534288

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			12.2	10.71		1.28	1.00	0.489	pCi/L	88	75 - 125	0.18	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	94.0		40 - 110
Y Carrier	87.1		40 - 110

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Prep Batch: 533998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158615-2	MW-16-02_20211020	Total/NA	Water	PrecSep-21	
240-158615-3	MW-16-03_20211020	Total/NA	Water	PrecSep-21	
240-158615-4	MW-17-06_20211020	Total/NA	Water	PrecSep-21	
240-158615-5	MW-17-07_20211021	Total/NA	Water	PrecSep-21	
240-158615-6	DUP-01_20211020	Total/NA	Water	PrecSep-21	
MB 160-533998/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-533998/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-533998/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 534002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158615-2	MW-16-02_20211020	Total/NA	Water	PrecSep_0	
240-158615-3	MW-16-03_20211020	Total/NA	Water	PrecSep_0	
240-158615-4	MW-17-06_20211020	Total/NA	Water	PrecSep_0	
240-158615-5	MW-17-07_20211021	Total/NA	Water	PrecSep_0	
240-158615-6	DUP-01_20211020	Total/NA	Water	PrecSep_0	
MB 160-534002/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-534002/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-534002/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 534284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158615-1	MW-16-01_20211020	Total/NA	Water	PrecSep-21	
MB 160-534284/18-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-534284/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-534284/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 534288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158615-1	MW-16-01_20211020	Total/NA	Water	PrecSep_0	
MB 160-534288/18-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-534288/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-534288/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-2

Client Sample ID: MW-16-01_20211020
Lab Sample ID: 240-158615-1
Date Collected: 10/20/21 11:30
Matrix: Water
Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534284	10/29/21 13:06	BMP	TAL SL
Total/NA	Analysis	9315		1	537291	11/18/21 20:43	FLC	TAL SL
Total/NA	Prep	PrecSep_0			534288	10/29/21 13:44	BMP	TAL SL
Total/NA	Analysis	9320		1	537275	11/18/21 16:29	ANW	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	538191	11/22/21 21:03	EMH	TAL SL

Client Sample ID: MW-16-02_20211020
Lab Sample ID: 240-158615-2
Date Collected: 10/20/21 10:20
Matrix: Water
Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			533998	10/28/21 09:58	BMP	TAL SL
Total/NA	Analysis	9315		1	537997	11/22/21 21:52	EMH	TAL SL
Total/NA	Prep	PrecSep_0			534002	10/28/21 11:04	BMP	TAL SL
Total/NA	Analysis	9320		1	537522	11/19/21 17:38	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	538643	11/24/21 17:15	EMH	TAL SL

Client Sample ID: MW-16-03_20211020
Lab Sample ID: 240-158615-3
Date Collected: 10/20/21 09:25
Matrix: Water
Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			533998	10/28/21 09:58	BMP	TAL SL
Total/NA	Analysis	9315		1	538004	11/22/21 20:03	EMH	TAL SL
Total/NA	Prep	PrecSep_0			534002	10/28/21 11:04	BMP	TAL SL
Total/NA	Analysis	9320		1	537522	11/19/21 17:38	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	538643	11/24/21 17:15	EMH	TAL SL

Client Sample ID: MW-17-06_20211020
Lab Sample ID: 240-158615-4
Date Collected: 10/20/21 12:55
Matrix: Water
Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			533998	10/28/21 09:58	BMP	TAL SL
Total/NA	Analysis	9315		1	538004	11/22/21 20:03	EMH	TAL SL
Total/NA	Prep	PrecSep_0			534002	10/28/21 11:04	BMP	TAL SL
Total/NA	Analysis	9320		1	537522	11/19/21 17:39	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	538643	11/24/21 17:15	EMH	TAL SL

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRRP

Job ID: 240-158615-2

Client Sample ID: MW-17-07_20211021

Lab Sample ID: 240-158615-5

Date Collected: 10/21/21 13:00

Matrix: Water

Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			533998	10/28/21 09:58	BMP	TAL SL
Total/NA	Analysis	9315		1	538004	11/22/21 20:03	EMH	TAL SL
Total/NA	Prep	PrecSep_0			534002	10/28/21 11:04	BMP	TAL SL
Total/NA	Analysis	9320		1	537522	11/19/21 17:39	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	538643	11/24/21 17:15	EMH	TAL SL

Client Sample ID: DUP-01_20211020

Lab Sample ID: 240-158615-6

Date Collected: 10/20/21 00:00

Matrix: Water

Date Received: 10/23/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			533998	10/28/21 09:58	BMP	TAL SL
Total/NA	Analysis	9315		1	537997	11/22/21 21:58	EMH	TAL SL
Total/NA	Prep	PrecSep_0			534002	10/28/21 11:04	BMP	TAL SL
Total/NA	Analysis	9320		1	537522	11/19/21 17:39	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	538643	11/24/21 17:15	EMH	TAL SL

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-158615-2
Project/Site: CCR DTE RRRP

Laboratory: Eurofins TestAmerica, St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-21
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	06-30-21 *
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	01-01-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-21
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-21
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-22
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	03-01-22
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

* 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

Chain of Custody Record

MICHIGAN 190

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Client Information	Sampler: B. YELEN	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-87281-30604.1
Client Contact: Mr. Vincent Buening	Phone:	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: TRC Environmental Corporation.	PWSID:	Analysis Requested		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~~ 164688			
Email: vbuening@trccompanies.com	WO #: 413519.0005			
Project Name: CCR DTE RRPP CCR	Project #: 24016806			
Site: Michigan	SSOW#:			

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd TDS, 9056A_28D Chloride, Sulfate, Fluoride	6010B Bo, 6020 Ca,Sb,AsBa,Be,Cd,Cr,Co,Li,Mo,Se,Tl, 7470 Hg	9315_Ra226 - Standard Target List	9320_Ra228, Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	D	D		
MW-16-01 _ 20211020	10.20.21	1130	G	Water	N	N	X	X	X	X		
MW-16-02 _ 20211020		1020		Water			X	X	X	X		
MW-16-03 _ 20211020		0925		Water			X	X	X	X		
~~MW-16-06~~ MW-17-06_20211020		1255		Water			X	X	X	X		
~~MW-16-07~~ MW-17-07_20211021	10.21.21	1300		Water			X	X	X	X		
DUP-01 _ 20211020	10.20.21			Water			X	X	X	X		
				Water								

240-158615 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
B. YELEN	10.21.21 1700	TRC	TRC STOR.	10.21.21 1700	TRC
[signature]	10/22/21 1135	TRC	[signature]	10/22/21 1131	GT
[signature]	10/22/21 1430	GT	[signature]	10-23-21 0800	TA

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

11/24/2021

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 158615**
Canton Facility

Client TRC Site Name _____ Cooler unpacked by: Brandon

Cooler Received on 10-23-21 Opened on 10-25-21

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._____°C Corrected Cooler Temp._____°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_____	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: _____

Login # : 158615

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form				
Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	IR-14 IR-15	1.3	1.4	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	2.4	2.5	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	3.3	3.4	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	4.2	4.3	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	1.9	2.0	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	0.7	0.8	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	3.8	3.9	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	4.1	4.2	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
				☐ See Temperature Excursion Form

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

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-01_20211020	240-158615-B-1	Plastic 500ml - with Nitric Acid	<2			
MW-16-01_20211020	240-158615-C-1	Plastic 1 liter - Nitric Acid	<2			
MW-16-01_20211020	240-158615-D-1	Plastic 1 liter - Nitric Acid	<2			
MW-16-02_20211020	240-158615-B-2	Plastic 500ml - with Nitric Acid	<2			
MW-16-02_20211020	240-158615-C-2	Plastic 1 liter - Nitric Acid	<2			
MW-16-02_20211020	240-158615-D-2	Plastic 1 liter - Nitric Acid	<2			
MW-16-03_20211020	240-158615-B-3	Plastic 500ml - with Nitric Acid	<2			
MW-16-03_20211020	240-158615-C-3	Plastic 1 liter - Nitric Acid	<2			
MW-16-03_20211020	240-158615-D-3	Plastic 1 liter - Nitric Acid	<2			
MW-17-06_20211020	240-158615-B-4	Plastic 500ml - with Nitric Acid	<2			
MW-17-06_20211020	240-158615-C-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-06_20211020	240-158615-D-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-07_20211021	240-158615-B-5	Plastic 500ml - with Nitric Acid	<2			
MW-17-07_20211021	240-158615-C-5	Plastic 1 liter - Nitric Acid	<2			
MW-17-07_20211021	240-158615-D-5	Plastic 1 liter - Nitric Acid	<2			
DUP-01_20211020	240-158615-B-6	Plastic 500ml - with Nitric Acid	<2			
DUP-01_20211020	240-158615-C-6	Plastic 1 liter - Nitric Acid	<2			
DUP-01_20211020	240-158615-D-6	Plastic 1 liter - Nitric Acid	<2			

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

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-144698.1
Client Contact: Shipping/Receiving	Phone	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin: Michigan	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note)		Job #: 240-158615-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/7/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: TRC CCR DTE River Rouge Power Plant	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	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)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-16-01_20211020 (240-158615-1)	10/20/21	11:30 Eastern		Water			X	X	X	2	
MW-16-02_20211020 (240-158615-2)	10/20/21	10:20 Eastern		Water			X	X	X	2	
MW-16-03_20211020 (240-158615-3)	10/20/21	09:25 Eastern		Water			X	X	X	2	
MW-17-06_20211020 (240-158615-4)	10/20/21	12:55 Eastern		Water			X	X	X	2	
MW-17-07_20211021 (240-158615-5)	10/21/21	13:00 Eastern		Water			X	X	X	2	
DUP-01_20211020 (240-158615-6)	10/20/21	Eastern		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature]	10-25-21 1622	ETA	FED EX		
2	FED EX			[signature]	10/26/21 0910	ETA SFL
3						

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

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: TRC Environmental Corporation.

Job Number: 240-158615-2

Login Number: 158615
List Number: 2
Creator: Johnson, Autumn R

List Source: Eurofins TestAmerica, St. Louis
List Creation: 10/26/21 11:14 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 240-158608-1
Client Project/Site: CCR DTE RRPP Nature and Extent

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

Attn: Mr. Vincent Buening

Authorized for release by:
11/11/2021 4:01:07 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-158608-1
Project/Site: CCR DTE RRPP Nature and Extent

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: 240-158608-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-158608-1

Comments
No additional comments.

Receipt
The samples were received on 10/25/2021 2:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 8 coolers at receipt time were 0.8º C, 1.4º C, 2.0º C, 2.5º C, 3.4º C, 3.9º C, 4.2º C and 4.3º 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.
Job ID: 240-158608-1
Project/Site: CCR DTE RRPP Nature and Extent

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.
Job ID: 240-158608-1
Project/Site: CCR DTE RRPP Nature and Extent

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-158608-1	MW-16-04S_20211021	Water	10/21/21 09:50	10/25/21 14:30
240-158608-2	MW-17-05_20211021	Water	10/21/21 12:05	10/25/21 14:30
240-158608-3	MW-17-08_20211021	Water	10/21/21 11:10	10/25/21 14:30
240-158608-4	MW-17-12_20211021	Water	10/21/21 13:40	10/25/21 14:30
240-158608-5	MW-17-13_20211021	Water	10/21/21 10:00	10/25/21 14:30
240-158608-6	MW-17-14_20211021	Water	10/21/21 10:45	10/25/21 14:30
240-158608-7	MW-17-15_20211021	Water	10/21/21 15:00	10/25/21 14:30
240-158608-8	MW-17-18_20211021	Water	10/21/21 12:40	10/25/21 14:30
240-158608-9	MW-17-19_20211021	Water	10/21/21 11:50	10/25/21 14:30
240-158608-10	MW-17-20_20211020	Water	10/20/21 14:20	10/25/21 14:30
240-158608-11	DUP-02_20211021	Water	10/21/21 00:00	10/25/21 14:30

Detection Summary

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-16-04S_20211021 — Lab Sample ID: 240-158608-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1100		100	100	ug/L	1		6010B	Total Recoverable
Barium	100		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	120000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	36		8.0	8.0	ug/L	1		6020	Total Recoverable
Molybdenum	5.0		5.0	5.0	ug/L	1		6020	Total Recoverable
Chloride	270		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	0.71		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	200		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1200		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-05_20211021 — Lab Sample ID: 240-158608-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	220		100	100	ug/L	1		6010B	Total Recoverable
Barium	64		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	68000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	11		8.0	8.0	ug/L	1		6020	Total Recoverable
Chloride	59		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.56		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	17		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	440		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-08_20211021 — Lab Sample ID: 240-158608-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	250		100	100	ug/L	1		6010B	Total Recoverable
Barium	52		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	85000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	12		8.0	8.0	ug/L	1		6020	Total Recoverable
Chloride	84		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.50		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	610		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-12_20211021 — Lab Sample ID: 240-158608-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	130		100	100	ug/L	1		6010B	Total Recoverable
Barium	550		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	250000		1000	1000	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: TRC Environmental Corporation.
Job ID: 240-158608-1
Project/Site: CCR DTE RRPP Nature and Extent

Client Sample ID: MW-17-12_20211021 (Continued)
Lab Sample ID: 240-158608-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	13		8.0	8.0	ug/L	1		6020	Total Recoverable
Chloride	1100		10	10	mg/L	10		9056A	Total/NA
Fluoride	0.41		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	9.6		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	2000		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-13_20211021
Lab Sample ID: 240-158608-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	300		100	100	ug/L	1		6010B	Total Recoverable
Barium	64		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	120000		1000	1000	ug/L	1		6020	Total Recoverable
Cobalt	1.0		1.0	1.0	ug/L	1		6020	Total Recoverable
Chloride	85		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.48		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	8.1		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	650		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-14_20211021
Lab Sample ID: 240-158608-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	210		100	100	ug/L	1		6010B	Total Recoverable
Barium	58		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	59000		1000	1000	ug/L	1		6020	Total Recoverable
Chloride	45		1.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	0.86		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	3.6		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	330		10	10	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-15_20211021
Lab Sample ID: 240-158608-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	570		100	100	ug/L	1		6010B	Total Recoverable
Arsenic	23		5.0	5.0	ug/L	1		6020	Total Recoverable
Barium	300		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	150000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	30		8.0	8.0	ug/L	1		6020	Total Recoverable
Chloride	430		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	0.78		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 RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-17-18_20211021 — Lab Sample ID: 240-158608-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	360		100	100	ug/L	1		6010B	Total Recoverable
Barium	150		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	220000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	20		8.0	8.0	ug/L	1		6020	Total Recoverable
Chloride	520		10	10	mg/L	10		9056A	Total/NA
Fluoride	0.38		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	140		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1400		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-19_20211021 — Lab Sample ID: 240-158608-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	980		100	100	ug/L	1		6010B	Total Recoverable
Barium	9.2		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	260000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	46		8.0	8.0	ug/L	1		6020	Total Recoverable
Molybdenum	7.1		5.0	5.0	ug/L	1		6020	Total Recoverable
Chloride	230		10	10	mg/L	10		9056A	Total/NA
Fluoride	0.45		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	1300		10	10	mg/L	10		9056A	Total/NA
Total Dissolved Solids	2300		20	20	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17-20_20211020 — Lab Sample ID: 240-158608-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	440		100	100	ug/L	1		6010B	Total Recoverable
Barium	120		5.0	5.0	ug/L	1		6020	Total Recoverable
Calcium	320000		1000	1000	ug/L	1		6020	Total Recoverable
Cobalt	1.4		1.0	1.0	ug/L	1		6020	Total Recoverable
Lithium	29		8.0	8.0	ug/L	1		6020	Total Recoverable
Chloride	1000		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	0.37		0.25	0.25	mg/L	5		9056A	Total/NA
Sulfate	380		5.0	5.0	mg/L	5		9056A	Total/NA
Total Dissolved Solids	2500		40	40	mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUP-02_20211021 — Lab Sample ID: 240-158608-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1200		100	100	ug/L	1		6010B	Total Recoverable
Barium	120		5.0	5.0	ug/L	1		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: DUP-02_20211021 (Continued) Lab Sample ID: 240-158608-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	130000		1000	1000	ug/L	1		6020	Total Recoverable
Lithium	40		8.0	8.0	ug/L	1		6020	Total Recoverable
Molybdenum	6.2		5.0	5.0	ug/L	1		6020	Total Recoverable
Chloride	260		5.0	5.0	mg/L	5		9056A	Total/NA
Fluoride	0.68		0.050	0.050	mg/L	1		9056A	Total/NA
Sulfate	190		1.0	1.0	mg/L	1		9056A	Total/NA
Total Dissolved Solids	1200		20	20	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-16-04S_20211021
Date Collected: 10/21/21 09:50
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1100**		100	100	ug/L		10/26/21 14:00	10/28/21 01:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:42	1
Barium	**100**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:42	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:42	1
Calcium	**120000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 12:42	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:42	1
Lithium	**36**		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 12:42	1
Molybdenum	**5.0**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**270**		5.0	5.0	mg/L			11/10/21 19:28	5
Fluoride	**0.71**		0.050	0.050	mg/L			11/10/21 19:06	1
Sulfate	**200**		1.0	1.0	mg/L			11/10/21 19:06	1
Total Dissolved Solids	**1200**		20	20	mg/L			10/28/21 08:38	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-17-05_20211021

Date Collected: 10/21/21 12:05
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**220**		100	100	ug/L		10/26/21 14:00	10/28/21 01:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:45	1
Barium	**64**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:45	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:45	1
Calcium	**68000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 12:45	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:45	1
Lithium	**11**		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 12:45	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**59**		1.0	1.0	mg/L			11/09/21 20:22	1
Fluoride	**0.56**		0.050	0.050	mg/L			11/09/21 20:22	1
Sulfate	**17**		1.0	1.0	mg/L			11/09/21 20:22	1
Total Dissolved Solids	**440**		10	10	mg/L			10/28/21 08:38	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-17-08_20211021
Date Collected: 10/21/21 11:10
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**250**		100	100	ug/L		10/26/21 14:00	10/28/21 01:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:47	1
Barium	**52**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:47	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:47	1
Calcium	**85000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 12:47	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:47	1
Lithium	**12**		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 12:47	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**84**		1.0	1.0	mg/L			11/09/21 20:42	1
Fluoride	**0.50**		0.050	0.050	mg/L			11/09/21 20:42	1
Sulfate	**120**		1.0	1.0	mg/L			11/09/21 20:42	1
Total Dissolved Solids	**610**		10	10	mg/L			10/28/21 08:38	1

Client: TRC Environmental Corporation.
Job ID: 240-158608-1
Project/Site: CCR DTE RRPP Nature and Extent

Client Sample ID: MW-17-12_20211021
Lab Sample ID: 240-158608-4
Date Collected: 10/21/21 13:40
Matrix: Water
Date Received: 10/25/21 14:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**130**		100	100	ug/L		10/26/21 14:00	10/28/21 01:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:50	1
Barium	**550**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:50	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:50	1
Calcium	**250000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 12:50	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:50	1
Lithium	**13**		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 12:50	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1100**		10	10	mg/L			11/09/21 21:43	10
Fluoride	**0.41**		0.050	0.050	mg/L			11/09/21 21:23	1
Sulfate	**9.6**		1.0	1.0	mg/L			11/09/21 21:23	1
Total Dissolved Solids	**2000**		40	40	mg/L			10/28/21 08:38	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-17-13_20211021

Date Collected: 10/21/21 10:00
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**300**		100	100	ug/L		10/26/21 14:00	10/28/21 01:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:52	1
Barium	**64**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:52	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:52	1
Calcium	**120000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 12:52	1
Cobalt	**1.0**		1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:52	1
Lithium	8.0	U	8.0	8.0	ug/L		10/26/21 14:00	10/28/21 12:52	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**85**		1.0	1.0	mg/L			11/09/21 22:03	1
Fluoride	**0.48**		0.050	0.050	mg/L			11/09/21 22:03	1
Sulfate	**8.1**		1.0	1.0	mg/L			11/09/21 22:03	1
Total Dissolved Solids	**650**		10	10	mg/L			10/28/21 08:38	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-17-14_20211021

Date Collected: 10/21/21 10:45
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**210**		100	100	ug/L		10/26/21 14:00	10/28/21 01:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:55	1
Barium	**58**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:55	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:55	1
Calcium	**59000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 12:55	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:55	1
Lithium	8.0	U	8.0	8.0	ug/L		10/26/21 14:00	10/28/21 12:55	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**45**		1.0	1.0	mg/L			11/09/21 22:44	1
Fluoride	**0.86**		0.050	0.050	mg/L			11/09/21 22:44	1
Sulfate	**3.6**		1.0	1.0	mg/L			11/09/21 22:44	1
Total Dissolved Solids	**330**		10	10	mg/L			10/28/21 08:38	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-17-15_20211021
Date Collected: 10/21/21 15:00
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	570		100	100	ug/L		10/26/21 14:00	10/28/21 01:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	23		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:57	1
Barium	300		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:57	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:57	1
Calcium	150000		1000	1000	ug/L		10/26/21 14:00	10/28/21 12:57	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 12:57	1
Lithium	30		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 12:57	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 12:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	430		5.0	5.0	mg/L			11/10/21 00:44	5
Fluoride	0.78		0.050	0.050	mg/L			11/10/21 00:24	1
Sulfate	28		1.0	1.0	mg/L			11/10/21 00:24	1
Total Dissolved Solids	1100		20	20	mg/L			10/28/21 08:38	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-17-18_20211021

Date Collected: 10/21/21 12:40
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-8

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**360**		100	100	ug/L		10/26/21 14:00	10/28/21 01:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 13:00	1
Barium	**150**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 13:00	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 13:00	1
Calcium	**220000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 13:00	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 13:00	1
Lithium	**20**		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 13:00	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 13:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**520**		10	10	mg/L			11/10/21 01:25	10
Fluoride	**0.38**		0.050	0.050	mg/L			11/10/21 01:05	1
Sulfate	**140**		1.0	1.0	mg/L			11/10/21 01:05	1
Total Dissolved Solids	**1400**		20	20	mg/L			10/28/21 08:38	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-17-19_20211021

Date Collected: 10/21/21 11:50
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-9

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**980**		100	100	ug/L		10/26/21 14:00	10/28/21 01:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 13:07	1
Barium	**9.2**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 13:07	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 13:07	1
Calcium	**260000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 13:07	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 13:07	1
Lithium	**46**		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 13:07	1
Molybdenum	**7.1**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 13:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**230**		10	10	mg/L			11/10/21 02:05	10
Fluoride	**0.45**		0.050	0.050	mg/L			11/10/21 01:45	1
Sulfate	**1300**		10	10	mg/L			11/10/21 02:05	10
Total Dissolved Solids	**2300**		20	20	mg/L			10/28/21 08:38	1

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-17-20_20211020

Date Collected: 10/20/21 14:20
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-10

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**440**		100	100	ug/L		10/26/21 14:00	10/28/21 01:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 13:10	1
Barium	**120**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 13:10	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 13:10	1
Calcium	**320000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 13:10	1
Cobalt	**1.4**		1.0	1.0	ug/L		10/26/21 14:00	10/28/21 13:10	1
Lithium	**29**		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 13:10	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 13:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1000**		5.0	5.0	mg/L			11/10/21 02:25	5
Fluoride	**0.37**		0.25	0.25	mg/L			11/10/21 02:25	5
Sulfate	**380**		5.0	5.0	mg/L			11/10/21 02:25	5
Total Dissolved Solids	**2500**		40	40	mg/L			10/27/21 08:38	1

Client: TRC Environmental Corporation.
Job ID: 240-158608-1
Project/Site: CCR DTE RRPP Nature and Extent

Client Sample ID: DUP-02_20211021
Lab Sample ID: 240-158608-11

Date Collected: 10/21/21 00:00
Matrix: Water
Date Received: 10/25/21 14:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**1200**		100	100	ug/L		10/26/21 14:00	10/28/21 01:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 13:12	1
Barium	**120**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 13:12	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 13:12	1
Calcium	**130000**		1000	1000	ug/L		10/26/21 14:00	10/28/21 13:12	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 13:12	1
Lithium	**40**		8.0	8.0	ug/L		10/26/21 14:00	10/28/21 13:12	1
Molybdenum	**6.2**		5.0	5.0	ug/L		10/26/21 14:00	10/28/21 13:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**260**		5.0	5.0	mg/L			11/10/21 04:06	5
Fluoride	**0.68**		0.050	0.050	mg/L			11/10/21 03:46	1
Sulfate	**190**		1.0	1.0	mg/L			11/10/21 03:46	1
Total Dissolved Solids	**1200**		20	20	mg/L			10/28/21 08:38	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-509944/1-A
Matrix: Water
Analysis Batch: 510238

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 509944

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	U	100	100	ug/L		10/26/21 14:00	10/27/21 23:51	1

Lab Sample ID: LCS 240-509944/2-A
Matrix: Water
Analysis Batch: 510238

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 509944

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	1040		ug/L		104	80 - 120

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-509944/1-A
Matrix: Water
Analysis Batch: 510457

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 509944

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 11:56	1
Barium	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 11:56	1
Beryllium	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 11:56	1
Calcium	1000	U	1000	1000	ug/L		10/26/21 14:00	10/28/21 11:56	1
Cobalt	1.0	U	1.0	1.0	ug/L		10/26/21 14:00	10/28/21 11:56	1
Lithium	8.0	U	8.0	8.0	ug/L		10/26/21 14:00	10/28/21 11:56	1
Molybdenum	5.0	U	5.0	5.0	ug/L		10/26/21 14:00	10/28/21 11:56	1

Lab Sample ID: LCS 240-509944/3-A
Matrix: Water
Analysis Batch: 510457

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 509944

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	997		ug/L		100	80 - 120
Barium	1000	986		ug/L		99	80 - 120
Beryllium	500	480		ug/L		96	80 - 120
Calcium	25000	24600		ug/L		98	80 - 120
Cobalt	500	523		ug/L		105	80 - 120
Lithium	500	502		ug/L		100	80 - 120
Molybdenum	500	497		ug/L		99	80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 240-511988/3
Matrix: Water
Analysis Batch: 511988

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			11/10/21 03:53	1
Fluoride	0.050	U	0.050	0.050	mg/L			11/10/21 03:53	1
Sulfate	1.0	U	1.0	1.0	mg/L			11/10/21 03:53	1

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

Lab Sample ID: LCS 240-511988/4
Matrix: Water
Analysis Batch: 511988

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	51.9		mg/L		104	90 - 110
Fluoride	2.50	2.67		mg/L		107	90 - 110
Sulfate	50.0	53.1		mg/L		106	90 - 110

Lab Sample ID: MB 240-511989/3
Matrix: Water
Analysis Batch: 511989

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			11/09/21 19:42	1
Fluoride	0.050	U	0.050	0.050	mg/L			11/09/21 19:42	1
Sulfate	1.0	U	1.0	1.0	mg/L			11/09/21 19:42	1

Lab Sample ID: LCS 240-511989/4
Matrix: Water
Analysis Batch: 511989

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	50.7		mg/L		101	90 - 110
Fluoride	2.50	2.56		mg/L		102	90 - 110
Sulfate	50.0	51.1		mg/L		102	90 - 110

Lab Sample ID: 240-158608-6 MS
Matrix: Water
Analysis Batch: 511989

Client Sample ID: MW-17-14_20211021
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	45		50.0	95.9		mg/L		102	80 - 120
Fluoride	0.86		2.50	3.48		mg/L		104	80 - 120
Sulfate	3.6		50.0	55.8		mg/L		104	80 - 120

Lab Sample ID: 240-158608-6 MSD
Matrix: Water
Analysis Batch: 511989

Client Sample ID: MW-17-14_20211021
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	45		50.0	98.3		mg/L		106	80 - 120	2	15
Fluoride	0.86		2.50	3.59		mg/L		109	80 - 120	3	15
Sulfate	3.6		50.0	57.9		mg/L		109	80 - 120	4	15

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

Lab Sample ID: MB 240-510077/1
Matrix: Water
Analysis Batch: 510077

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			10/27/21 08:38	1

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

Lab Sample ID: LCS 240-510077/2
Matrix: Water
Analysis Batch: 510077

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	458		mg/L		92	80 - 120		

Lab Sample ID: MB 240-510261/1
Matrix: Water
Analysis Batch: 510261

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			10/28/21 08:38	1

Lab Sample ID: LCS 240-510261/2
Matrix: Water
Analysis Batch: 510261

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	516		mg/L		103	80 - 120		

Lab Sample ID: 240-158608-1 DU
Matrix: Water
Analysis Batch: 510261

Client Sample ID: MW-16-04S_20211021
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1200			1180		mg/L				1	20

Metals

Prep Batch: 509944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158608-1	MW-16-04S_20211021	Total Recoverable	Water	3005A	
240-158608-2	MW-17-05_20211021	Total Recoverable	Water	3005A	
240-158608-3	MW-17-08_20211021	Total Recoverable	Water	3005A	
240-158608-4	MW-17-12_20211021	Total Recoverable	Water	3005A	
240-158608-5	MW-17-13_20211021	Total Recoverable	Water	3005A	
240-158608-6	MW-17-14_20211021	Total Recoverable	Water	3005A	
240-158608-7	MW-17-15_20211021	Total Recoverable	Water	3005A	
240-158608-8	MW-17-18_20211021	Total Recoverable	Water	3005A	
240-158608-9	MW-17-19_20211021	Total Recoverable	Water	3005A	
240-158608-10	MW-17-20_20211020	Total Recoverable	Water	3005A	
240-158608-11	DUP-02_20211021	Total Recoverable	Water	3005A	
MB 240-509944/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-509944/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-509944/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 510238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158608-1	MW-16-04S_20211021	Total Recoverable	Water	6010B	509944
240-158608-2	MW-17-05_20211021	Total Recoverable	Water	6010B	509944
240-158608-3	MW-17-08_20211021	Total Recoverable	Water	6010B	509944
240-158608-4	MW-17-12_20211021	Total Recoverable	Water	6010B	509944
240-158608-5	MW-17-13_20211021	Total Recoverable	Water	6010B	509944
240-158608-6	MW-17-14_20211021	Total Recoverable	Water	6010B	509944
240-158608-7	MW-17-15_20211021	Total Recoverable	Water	6010B	509944
240-158608-8	MW-17-18_20211021	Total Recoverable	Water	6010B	509944
240-158608-9	MW-17-19_20211021	Total Recoverable	Water	6010B	509944
240-158608-10	MW-17-20_20211020	Total Recoverable	Water	6010B	509944
240-158608-11	DUP-02_20211021	Total Recoverable	Water	6010B	509944
MB 240-509944/1-A	Method Blank	Total Recoverable	Water	6010B	509944
LCS 240-509944/2-A	Lab Control Sample	Total Recoverable	Water	6010B	509944

Analysis Batch: 510457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158608-1	MW-16-04S_20211021	Total Recoverable	Water	6020	509944
240-158608-2	MW-17-05_20211021	Total Recoverable	Water	6020	509944
240-158608-3	MW-17-08_20211021	Total Recoverable	Water	6020	509944
240-158608-4	MW-17-12_20211021	Total Recoverable	Water	6020	509944
240-158608-5	MW-17-13_20211021	Total Recoverable	Water	6020	509944
240-158608-6	MW-17-14_20211021	Total Recoverable	Water	6020	509944
240-158608-7	MW-17-15_20211021	Total Recoverable	Water	6020	509944
240-158608-8	MW-17-18_20211021	Total Recoverable	Water	6020	509944
240-158608-9	MW-17-19_20211021	Total Recoverable	Water	6020	509944
240-158608-10	MW-17-20_20211020	Total Recoverable	Water	6020	509944
240-158608-11	DUP-02_20211021	Total Recoverable	Water	6020	509944
MB 240-509944/1-A	Method Blank	Total Recoverable	Water	6020	509944
LCS 240-509944/3-A	Lab Control Sample	Total Recoverable	Water	6020	509944

General Chemistry

Analysis Batch: 510077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158608-10	MW-17-20_20211020	Total/NA	Water	SM 2540C	
MB 240-510077/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-510077/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 510261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158608-1	MW-16-04S_20211021	Total/NA	Water	SM 2540C	
240-158608-2	MW-17-05_20211021	Total/NA	Water	SM 2540C	
240-158608-3	MW-17-08_20211021	Total/NA	Water	SM 2540C	
240-158608-4	MW-17-12_20211021	Total/NA	Water	SM 2540C	
240-158608-5	MW-17-13_20211021	Total/NA	Water	SM 2540C	
240-158608-6	MW-17-14_20211021	Total/NA	Water	SM 2540C	
240-158608-7	MW-17-15_20211021	Total/NA	Water	SM 2540C	
240-158608-8	MW-17-18_20211021	Total/NA	Water	SM 2540C	
240-158608-9	MW-17-19_20211021	Total/NA	Water	SM 2540C	
240-158608-11	DUP-02_20211021	Total/NA	Water	SM 2540C	
MB 240-510261/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 240-510261/2	Lab Control Sample	Total/NA	Water	SM 2540C	
240-158608-1 DU	MW-16-04S_20211021	Total/NA	Water	SM 2540C	

Analysis Batch: 511988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158608-1	MW-16-04S_20211021	Total/NA	Water	9056A	
240-158608-1	MW-16-04S_20211021	Total/NA	Water	9056A	
MB 240-511988/3	Method Blank	Total/NA	Water	9056A	
LCS 240-511988/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 511989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158608-2	MW-17-05_20211021	Total/NA	Water	9056A	
240-158608-3	MW-17-08_20211021	Total/NA	Water	9056A	
240-158608-4	MW-17-12_20211021	Total/NA	Water	9056A	
240-158608-4	MW-17-12_20211021	Total/NA	Water	9056A	
240-158608-5	MW-17-13_20211021	Total/NA	Water	9056A	
240-158608-6	MW-17-14_20211021	Total/NA	Water	9056A	
240-158608-7	MW-17-15_20211021	Total/NA	Water	9056A	
240-158608-7	MW-17-15_20211021	Total/NA	Water	9056A	
240-158608-8	MW-17-18_20211021	Total/NA	Water	9056A	
240-158608-8	MW-17-18_20211021	Total/NA	Water	9056A	
240-158608-9	MW-17-19_20211021	Total/NA	Water	9056A	
240-158608-9	MW-17-19_20211021	Total/NA	Water	9056A	
240-158608-10	MW-17-20_20211020	Total/NA	Water	9056A	
240-158608-11	DUP-02_20211021	Total/NA	Water	9056A	
240-158608-11	DUP-02_20211021	Total/NA	Water	9056A	
MB 240-511989/3	Method Blank	Total/NA	Water	9056A	
LCS 240-511989/4	Lab Control Sample	Total/NA	Water	9056A	
240-158608-6 MS	MW-17-14_20211021	Total/NA	Water	9056A	
240-158608-6 MSD	MW-17-14_20211021	Total/NA	Water	9056A	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-158608-1
Project/Site: CCR DTE RRPP Nature and Extent

Client Sample ID: MW-16-04S_20211021 Lab Sample ID: 240-158608-1

Date Collected: 10/21/21 09:50 **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510238	10/28/21 01:02	KLC	TAL CAN
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510457	10/28/21 12:42	AJC	TAL CAN
Total/NA	Analysis	9056A		1	511988	11/10/21 19:06	JWW	TAL CAN
Total/NA	Analysis	9056A		5	511988	11/10/21 19:28	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510261	10/28/21 08:38	AJ	TAL CAN

Client Sample ID: MW-17-05_20211021 Lab Sample ID: 240-158608-2

Date Collected: 10/21/21 12:05 **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510238	10/28/21 01:15	KLC	TAL CAN
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510457	10/28/21 12:45	AJC	TAL CAN
Total/NA	Analysis	9056A		1	511989	11/09/21 20:22	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510261	10/28/21 08:38	AJ	TAL CAN

Client Sample ID: MW-17-08_20211021 Lab Sample ID: 240-158608-3

Date Collected: 10/21/21 11:10 **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510238	10/28/21 01:19	KLC	TAL CAN
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510457	10/28/21 12:47	AJC	TAL CAN
Total/NA	Analysis	9056A		1	511989	11/09/21 20:42	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510261	10/28/21 08:38	AJ	TAL CAN

Client Sample ID: MW-17-12_20211021 Lab Sample ID: 240-158608-4

Date Collected: 10/21/21 13:40 **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510238	10/28/21 01:23	KLC	TAL CAN
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510457	10/28/21 12:50	AJC	TAL CAN
Total/NA	Analysis	9056A		1	511989	11/09/21 21:23	JWW	TAL CAN
Total/NA	Analysis	9056A		10	511989	11/09/21 21:43	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510261	10/28/21 08:38	AJ	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-17-13_20211021
Date Collected: 10/21/21 10:00
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510238	10/28/21 01:28	KLC	TAL CAN
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510457	10/28/21 12:52	AJC	TAL CAN
Total/NA	Analysis	9056A		1	511989	11/09/21 22:03	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510261	10/28/21 08:38	AJ	TAL CAN

Client Sample ID: MW-17-14_20211021
Date Collected: 10/21/21 10:45
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510238	10/28/21 01:32	KLC	TAL CAN
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510457	10/28/21 12:55	AJC	TAL CAN
Total/NA	Analysis	9056A		1	511989	11/09/21 22:44	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510261	10/28/21 08:38	AJ	TAL CAN

Client Sample ID: MW-17-15_20211021
Date Collected: 10/21/21 15:00
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510238	10/28/21 01:36	KLC	TAL CAN
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510457	10/28/21 12:57	AJC	TAL CAN
Total/NA	Analysis	9056A		1	511989	11/10/21 00:24	JWW	TAL CAN
Total/NA	Analysis	9056A		5	511989	11/10/21 00:44	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510261	10/28/21 08:38	AJ	TAL CAN

Client Sample ID: MW-17-18_20211021
Date Collected: 10/21/21 12:40
Date Received: 10/25/21 14:30

Lab Sample ID: 240-158608-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510238	10/28/21 01:40	KLC	TAL CAN
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510457	10/28/21 13:00	AJC	TAL CAN
Total/NA	Analysis	9056A		1	511989	11/10/21 01:05	JWW	TAL CAN
Total/NA	Analysis	9056A		10	511989	11/10/21 01:25	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510261	10/28/21 08:38	AJ	TAL CAN

Lab Chronicle

Client: TRC Environmental Corporation.
Project/Site: CCR DTE RRPP Nature and Extent

Job ID: 240-158608-1

Client Sample ID: MW-17-19_20211021

Lab Sample ID: 240-158608-9

Date Collected: 10/21/21 11:50
Matrix: Water
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510238	10/28/21 01:45	KLC	TAL CAN
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510457	10/28/21 13:07	AJC	TAL CAN
Total/NA	Analysis	9056A		1	511989	11/10/21 01:45	JWW	TAL CAN
Total/NA	Analysis	9056A		10	511989	11/10/21 02:05	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510261	10/28/21 08:38	AJ	TAL CAN

Client Sample ID: MW-17-20_20211020

Lab Sample ID: 240-158608-10

Date Collected: 10/20/21 14:20
Matrix: Water
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510238	10/28/21 01:49	KLC	TAL CAN
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510457	10/28/21 13:10	AJC	TAL CAN
Total/NA	Analysis	9056A		5	511989	11/10/21 02:25	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510077	10/27/21 08:38	AJ	TAL CAN

Client Sample ID: DUP-02_20211021

Lab Sample ID: 240-158608-11

Date Collected: 10/21/21 00:00
Matrix: Water
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6010B		1	510238	10/28/21 01:53	KLC	TAL CAN
Total Recoverable	Prep	3005A			509944	10/26/21 14:00	SHB	TAL CAN
Total Recoverable	Analysis	6020		1	510457	10/28/21 13:12	AJC	TAL CAN
Total/NA	Analysis	9056A		1	511989	11/10/21 03:46	JWW	TAL CAN
Total/NA	Analysis	9056A		5	511989	11/10/21 04:06	JWW	TAL CAN
Total/NA	Analysis	SM 2540C		1	510261	10/28/21 08:38	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: 240-158608-1
Project/Site: CCR DTE RRPP Nature and Extent

Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

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

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler: B. YELEN, A. WHALEY	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-87279-30605.1
Client Contact: Mr. Vincent Buening	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: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: ~~TBD~~ 164688			
Email: vbuening@trccompanies.com	WO #: 413519.0005			
Project Name: CCR DTE RRPP Nature and Extent	Project #: 24016806			
Site: Michigan	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd, 9056A_28D	6010B, 6020	9315_Ra226 - Radium 226	9320_Ra228, Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	D	D		
MW-16-04S _ 20211021	10.21.21	0950	G	Water	N	N	X	X	X	X		
MW-17-05 _ 20211021		1205		Water			X	X	X	X		
MW-17-08 _ 20211021		1110		Water			X	X	X	X		
MW-17-12 _ 20211021		1340		Water			X	X	X	X		
MW-17-13 _ 20211021		1000		Water			X	X	X	X		
MW-17-14 _ 20211021		1045		Water			X	X	X	X		
MW-17-15 _ 20211021		1500		Water			X	X	X	X		
MW-17-18 _ 20211021		1240		Water			X	X	X	X		
MW-17-19 _ 20211021		1150		Water			X	X	X	X		
MW-17-20 _ 20211020	10.20.21	1420		Water			X	X	X	X		
DUP-02 _ 20211021	10.21.21	/		Water			X	X	X	X		

240-158608 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
X Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ 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: B. YELEN	Date/Time: 10.21.21 1700	Company: TRC	Received by: JRC STOR.	Date/Time: 10.21.21 1700	Company: TRC
Relinquished by: K Thurnau	Date/Time: 10/22/21 1135	Company: TRC	Received by:	Date/Time: 10/22/21 1431	Company: GT
Relinquished by:	Date/Time: 10/22/21 1431	Company: GT	Received by:	Date/Time: 10-23-21 0800	Company: TA

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

Ver: 01/16/2019

11/11/2021

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 158608**
Canton Facility

Client TRC Site Name _____ Cooler unpacked by: Brandon

Cooler Received on 10-23-21 Opened on 10-25-21

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

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

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

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

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

Concerning _____

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

Samples processed by:

_____

_____

_____

_____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login # : 158608

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form				
Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	IR-14 IR-15	1.3	1.4	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	2.4	2.5	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	3.3	3.4	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	4.2	4.3	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	1.9	2.0	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	0.7	0.8	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	3.8	3.9	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	4.1	4.2	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
			☐ See Temperature Excursion Form	

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

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-04S_20211021	240-158608-B-1	Plastic 500ml - with Nitric Acid	<2			
MW-16-04S_20211021	240-158608-C-1	Plastic 1 liter - Nitric Acid	<2			
MW-16-04S_20211021	240-158608-D-1	Plastic 1 liter - Nitric Acid	<2			
MW-17-05_20211021	240-158608-B-2	Plastic 500ml - with Nitric Acid	<2			
MW-17-05_20211021	240-158608-C-2	Plastic 1 liter - Nitric Acid	<2			
MW-17-05_20211021	240-158608-D-2	Plastic 1 liter - Nitric Acid	<2			
MW-17-08_20211021	240-158608-B-3	Plastic 500ml - with Nitric Acid	<2			
MW-17-08_20211021	240-158608-C-3	Plastic 1 liter - Nitric Acid	<2			
MW-17-08_20211021	240-158608-D-3	Plastic 1 liter - Nitric Acid	<2			
MW-17-12_20211021	240-158608-B-4	Plastic 500ml - with Nitric Acid	<2			
MW-17-12_20211021	240-158608-C-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-12_20211021	240-158608-D-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-13_20211021	240-158608-B-5	Plastic 500ml - with Nitric Acid	<2			
MW-17-13_20211021	240-158608-C-5	Plastic 1 liter - Nitric Acid	<2			
MW-17-13_20211021	240-158608-D-5	Plastic 1 liter - Nitric Acid	<2			
MW-17-14_20211021	240-158608-B-6	Plastic 500ml - with Nitric Acid	<2			
MW-17-14_20211021	240-158608-C-6	Plastic 1 liter - Nitric Acid	<2			
MW-17-14_20211021	240-158608-D-6	Plastic 1 liter - Nitric Acid	<2			
MW-17-15_20211021	240-158608-B-7	Plastic 500ml - with Nitric Acid	<2			
MW-17-15_20211021	240-158608-C-7	Plastic 1 liter - Nitric Acid	<2			
MW-17-15_20211021	240-158608-D-7	Plastic 1 liter - Nitric Acid	<2			
MW-17-18_20211021	240-158608-B-8	Plastic 500ml - with Nitric Acid	<2			
MW-17-18_20211021	240-158608-C-8	Plastic 1 liter - Nitric Acid	<2			
MW-17-18_20211021	240-158608-D-8	Plastic 1 liter - Nitric Acid	<2			
MW-17-19_20211021	240-158608-B-9	Plastic 500ml - with Nitric Acid	<2			
MW-17-19_20211021	240-158608-C-9	Plastic 1 liter - Nitric Acid	<2			
MW-17-19_20211021	240-158608-D-9	Plastic 1 liter - Nitric Acid	<2			
MW-17-20_20211021	240-158608-B-10	Plastic 500ml - with Nitric Acid	<2			
MW-17-20_20211021	240-158608-C-10	Plastic 1 liter - Nitric Acid	<2			
MW-17-20_20211021	240-158608-D-10	Plastic 1 liter - Nitric Acid	<2			
DUP-02_20211021	240-158608-B-11	Plastic 500ml - with Nitric Acid	<2			
DUP-02_20211021	240-158608-C-11	Plastic 1 liter - Nitric Acid	<2			
DUP-02_20211021	240-158608-D-11	Plastic 1 liter - 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: 240-158608-2
Client Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

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

Attn: Mr. Vincent Buening

Kris Brooks

Authorized for release by:
12/1/2021 7:18:45 PM

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

Table of Contents

Definitions/Glossary

Client: TRC Environmental Corporation. Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

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: 240-158608-2

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-158608-2

Comments
The SW846 Method 9315 Radium-226, SW846 Method 9320 Radium-228 (GFPC), and Ra226_Ra228 Combined Radium 226 and Radium 228 analyses were performed at the Eurofins TestAmerica St. Louis laboratory.

Receipt
The samples were received on 10/25/2021 2:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 8 coolers at receipt time were 0.8º C, 1.4º C, 2.0º C, 2.5º C, 3.4º C, 3.9º C, 4.2º C and 4.3º C.

RAD
Method 9315: Radium 226 batch 534003
The detection goal was not met for the following sample: MW-17-15_20211021 (240-158608-7). Samples were prepped at a reduced volume due to the presence of matrix interferences. Analytical results are reported with the detection limit achieved.

Methods 903.0, 9315: Radium 226 batch 534003
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-16-04S_20211021 (240-158608-1), MW-17-05_20211021 (240-158608-2), MW-17-08_20211021 (240-158608-3), MW-17-12_20211021 (240-158608-4), MW-17-13_20211021 (240-158608-5), MW-17-14_20211021 (240-158608-6), MW-17-15_20211021 (240-158608-7), MW-17-18_20211021 (240-158608-8), MW-17-19_20211021 (240-158608-9), MW-17-20_20211020 (240-158608-10), DUP-02_20211021 (240-158608-11), (LCS 160-534003/1-A), (LCSD 160-534003/2-A) and (MB 160-534003/23-A)

Methods 904.0, 9320: Radium 228 batch 534011
The method blank (MB) has activity above the MDC and RL. The following associated samples are either below the reporting limit for the contaminant or exhibit concentrations greater than five (5) times the concentrations observed in the MB), therefore, re-analysis is not required. The data have been reported. (MB 160-534011/23-A)

Methods 904.0, 9320: Radium 228 batch 534011
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-17-13_20211021 (240-158608-5), (LCS 160-534011/1-A), (LCSD 160-534011/2-A) and (MB 160-534011/23-A)

Method 9320: Ra-228 prep batch 160-537972: The detection goal was not met for the following sample due to a reduced aliquot to limit matrix interferences noted during preparation: MW-17-15_20211021 (240-158608-7). Analytical results are reported with the detection limit achieved.

Methods 904.0, 9320: Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-16-04S_20211021 (240-158608-1), MW-17-05_20211021 (240-158608-2), MW-17-08_20211021 (240-158608-3), MW-17-12_20211021 (240-158608-4), MW-17-14_20211021 (240-158608-6), MW-17-15_20211021 (240-158608-7), MW-17-18_20211021 (240-158608-8), MW-17-19_20211021 (240-158608-9), MW-17-20_20211020 (240-158608-10), DUP-02_20211021 (240-158608-11), (LCS 160-537972/1-A), (LCSD 160-537972/2-A) and (MB 160-537972/17-A)

Method PrecSep_0: Radium-228 Prep Batch 160-534011
The following samples were prepared at a reduced aliquot due to Matrix: MW-16-04S_20211021 (240-158608-1), MW-17-05_20211021 (240-158608-2), MW-17-08_20211021 (240-158608-3), MW-17-12_20211021 (240-158608-4), MW-17-13_20211021 (240-158608-5), MW-17-14_20211021 (240-158608-6), MW-17-15_20211021 (240-158608-7), MW-17-18_20211021 (240-158608-8), MW-17-19_20211021 (240-158608-9), MW-17-20_20211020 (240-158608-10) and DUP-02_20211021 (240-158608-11). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate

Job ID: 240-158608-2 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

batch precision. Method PrecSep_0: Radium-228 Prep Batch 160-537972

The following samples were prepared at a reduced aliquot due to Matrix: MW-16-04S_20211021 (240-158608-1), MW-17-05_20211021 (240-158608-2), MW-17-08_20211021 (240-158608-3), MW-17-12_20211021 (240-158608-4), MW-17-14_20211021 (240-158608-6), MW-17-15_20211021 (240-158608-7), MW-17-18_20211021 (240-158608-8), MW-17-19_20211021 (240-158608-9), MW-17-20_20211020 (240-158608-10) and DUP-02_20211021 (240-158608-11). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision. Method PrecSep_0: Radium-228 Prep Batch 160-537972

Method PrecSep-21: Radium-226 Prep Batch 160-534003
The following samples were prepared at a reduced aliquot due to Matrix: MW-16-04S_20211021 (240-158608-1), MW-17-05_20211021 (240-158608-2), MW-17-08_20211021 (240-158608-3), MW-17-12_20211021 (240-158608-4), MW-17-13_20211021 (240-158608-5), MW-17-14_20211021 (240-158608-6), MW-17-15_20211021 (240-158608-7), MW-17-18_20211021 (240-158608-8), MW-17-19_20211021 (240-158608-9), MW-17-20_20211020 (240-158608-10) and DUP-02_20211021 (240-158608-11). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

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

Method Summary

Client: TRC Environmental Corporation. Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: TRC Environmental Corporation.
Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-158608-1	MW-16-04S_20211021	Water	10/21/21 09:50	10/25/21 14:30
240-158608-2	MW-17-05_20211021	Water	10/21/21 12:05	10/25/21 14:30
240-158608-3	MW-17-08_20211021	Water	10/21/21 11:10	10/25/21 14:30
240-158608-4	MW-17-12_20211021	Water	10/21/21 13:40	10/25/21 14:30
240-158608-5	MW-17-13_20211021	Water	10/21/21 10:00	10/25/21 14:30
240-158608-6	MW-17-14_20211021	Water	10/21/21 10:45	10/25/21 14:30
240-158608-7	MW-17-15_20211021	Water	10/21/21 15:00	10/25/21 14:30
240-158608-8	MW-17-18_20211021	Water	10/21/21 12:40	10/25/21 14:30
240-158608-9	MW-17-19_20211021	Water	10/21/21 11:50	10/25/21 14:30
240-158608-10	MW-17-20_20211020	Water	10/20/21 14:20	10/25/21 14:30
240-158608-11	DUP-02_20211021	Water	10/21/21 00:00	10/25/21 14:30

Detection Summary

Client: TRC Environmental Corporation. Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Client Sample ID: MW-16-04S_20211021 Lab Sample ID: 240-158608-1

No Detections.

Client Sample ID: MW-17-05_20211021 Lab Sample ID: 240-158608-2

No Detections.

Client Sample ID: MW-17-08_20211021 Lab Sample ID: 240-158608-3

No Detections.

Client Sample ID: MW-17-12_20211021 Lab Sample ID: 240-158608-4

No Detections.

Client Sample ID: MW-17-13_20211021 Lab Sample ID: 240-158608-5

No Detections.

Client Sample ID: MW-17-14_20211021 Lab Sample ID: 240-158608-6

No Detections.

Client Sample ID: MW-17-15_20211021 Lab Sample ID: 240-158608-7

No Detections.

Client Sample ID: MW-17-18_20211021 Lab Sample ID: 240-158608-8

No Detections.

Client Sample ID: MW-17-19_20211021 Lab Sample ID: 240-158608-9

No Detections.

Client Sample ID: MW-17-20_20211020 Lab Sample ID: 240-158608-10

No Detections.

Client Sample ID: DUP-02_20211021 Lab Sample ID: 240-158608-11

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-16-04S_20211021 Lab Sample ID: 240-158608-1

Date Collected: 10/21/21 09:50 **Matrix: Water**
Date Received: 10/25/21 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.747		0.355	0.362	1.00	0.438	pCi/L	10/28/21 11:08	11/19/21 10:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.0*		*40 - 110*	*10/28/21 11:08*	*11/19/21 10:16*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.634		0.385	0.389	1.00	0.588	pCi/L	11/22/21 09:01	11/30/21 12:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.7*		*40 - 110*	*11/22/21 09:01*	*11/30/21 12:58*	*1*
Y Carrier	*83.7*		*40 - 110*	*11/22/21 09:01*	*11/30/21 12:58*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.38		0.524	0.531	5.00	0.588	pCi/L		11/30/21 22:53	1

Client Sample ID: MW-17-05_20211021 Lab Sample ID: 240-158608-2

Date Collected: 10/21/21 12:05 **Matrix: Water**
Date Received: 10/25/21 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.699		0.312	0.318	1.00	0.379	pCi/L	10/28/21 11:08	11/19/21 10:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*10/28/21 11:08*	*11/19/21 10:16*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.712		0.403	0.409	1.00	0.600	pCi/L	11/22/21 09:01	11/30/21 12:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*80.3*		*40 - 110*	*11/22/21 09:01*	*11/30/21 12:58*	*1*
Y Carrier	*81.9*		*40 - 110*	*11/22/21 09:01*	*11/30/21 12:58*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.41		0.510	0.518	5.00	0.600	pCi/L		11/30/21 22:53	1

Client: TRC Environmental Corporation.
Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Client Sample ID: MW-17-08_20211021
Lab Sample ID: 240-158608-3

Date Collected: 10/21/21 11:10
Matrix: Water
Date Received: 10/25/21 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.505		0.323	0.326	1.00	0.458	pCi/L	10/28/21 11:08	11/19/21 10:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.3*		*40 - 110*	*10/28/21 11:08*	*11/19/21 10:16*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.816		0.416	0.423	1.00	0.609	pCi/L	11/22/21 09:01	11/30/21 12:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.0*		*40 - 110*	*11/22/21 09:01*	*11/30/21 12:58*	*1*
Y Carrier	*82.6*		*40 - 110*	*11/22/21 09:01*	*11/30/21 12:58*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.32		0.527	0.534	5.00	0.609	pCi/L		11/30/21 22:53	1

Client Sample ID: MW-17-12_20211021 Lab Sample ID: 240-158608-4

Date Collected: 10/21/21 13:40 **Matrix: Water**
Date Received: 10/25/21 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.10		0.397	0.409	1.00	0.436	pCi/L	10/28/21 11:08	11/19/21 10:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.5*		*40 - 110*	*10/28/21 11:08*	*11/19/21 10:17*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.30		0.540	0.553	1.00	0.790	pCi/L	11/22/21 09:01	11/30/21 12:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.0*		*40 - 110*	*11/22/21 09:01*	*11/30/21 12:59*	*1*
Y Carrier	*83.4*		*40 - 110*	*11/22/21 09:01*	*11/30/21 12:59*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.40		0.670	0.688	5.00	0.790	pCi/L		11/30/21 22:53	1

Client Sample ID: MW-17-13_20211021 Lab Sample ID: 240-158608-5

Date Collected: 10/21/21 10:00 **Matrix: Water**
Date Received: 10/25/21 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0770	U	0.189	0.189	1.00	0.344	pCi/L	10/28/21 11:08	11/19/21 10:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*10/28/21 11:08*	*11/19/21 10:17*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.971**		0.350	0.361	1.00	0.472	pCi/L	10/28/21 12:02	11/18/21 13:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*10/28/21 12:02*	*11/18/21 13:09*	*1*
Y Carrier	*82.2*		*40 - 110*	*10/28/21 12:02*	*11/18/21 13:09*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.05**		0.398	0.407	5.00	0.472	pCi/L		11/30/21 22:56	1

Client Sample ID: MW-17-14_20211021 — Lab Sample ID: 240-158608-6

Date Collected: 10/21/21 10:45 — **Matrix: Water**
Date Received: 10/25/21 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.355	U	0.260	0.262	1.00	0.379	pCi/L	10/28/21 11:08	11/19/21 10:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.3*		*40 - 110*	*10/28/21 11:08*	*11/19/21 10:17*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0902	U	0.384	0.384	1.00	0.694	pCi/L	11/22/21 09:01	11/30/21 13:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.7*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:03*	*1*
Y Carrier	*83.7*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:03*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.264	U	0.464	0.465	5.00	0.694	pCi/L		11/30/21 22:53	1

Client Sample ID: MW-17-15_20211021 Lab Sample ID: 240-158608-7

Date Collected: 10/21/21 15:00 **Matrix: Water**
Date Received: 10/25/21 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.12	U G	0.908	0.913	1.00	1.38	pCi/L	10/28/21 11:08	11/19/21 10:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.5*		*40 - 110*	*10/28/21 11:08*	*11/19/21 10:17*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.86	U G	1.34	1.35	1.00	2.11	pCi/L	11/22/21 09:01	11/30/21 13:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.5*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:03*	*1*
Y Carrier	*84.5*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:03*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**2.97**		1.62	1.63	5.00	2.11	pCi/L		11/30/21 22:53	1

Client Sample ID: MW-17-18_20211021 Lab Sample ID: 240-158608-8

Date Collected: 10/21/21 12:40 **Matrix: Water**
Date Received: 10/25/21 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.758		0.356	0.362	1.00	0.448	pCi/L	10/28/21 11:08	11/19/21 10:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.8*		*40 - 110*	*10/28/21 11:08*	*11/19/21 10:17*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.09		0.433	0.444	1.00	0.604	pCi/L	11/22/21 09:01	11/30/21 13:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.4*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:03*	*1*
Y Carrier	*78.9*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:03*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.85		0.561	0.573	5.00	0.604	pCi/L		11/30/21 22:53	1

Client: TRC Environmental Corporation.
Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Client Sample ID: MW-17-19_20211021
Lab Sample ID: 240-158608-9

Date Collected: 10/21/21 11:50
Matrix: Water
Date Received: 10/25/21 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.363	U	0.307	0.309	1.00	0.473	pCi/L	10/28/21 11:08	11/19/21 10:18	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.3*		*40 - 110*	*10/28/21 11:08*	*11/19/21 10:18*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.609**		0.367	0.371	1.00	0.558	pCi/L	11/22/21 09:01	11/30/21 13:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.6*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:04*	*1*
Y Carrier	*85.2*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:04*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.972**		0.478	0.483	5.00	0.558	pCi/L		11/30/21 22:53	1

Client: TRC Environmental Corporation.
Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Client Sample ID: MW-17-20_20211020
Lab Sample ID: 240-158608-10

Date Collected: 10/20/21 14:20
Matrix: Water
Date Received: 10/25/21 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.35		0.377	0.396	1.00	0.339	pCi/L	10/28/21 11:08	11/19/21 10:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*101*		*40 - 110*	*10/28/21 11:08*	*11/19/21 10:20*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.03		0.433	0.443	1.00	0.617	pCi/L	11/22/21 09:01	11/30/21 13:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:04*	*1*
Y Carrier	*84.1*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:04*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.38		0.574	0.594	5.00	0.617	pCi/L		11/30/21 22:53	1

Client: TRC Environmental Corporation.
Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Client Sample ID: DUP-02_20211021
Lab Sample ID: 240-158608-11

Date Collected: 10/21/21 00:00
Matrix: Water
Date Received: 10/25/21 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**1.35**		0.404	0.422	1.00	0.398	pCi/L	10/28/21 11:08	11/19/21 10:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.5*		*40 - 110*	*10/28/21 11:08*	*11/19/21 10:20*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.192	U	0.347	0.348	1.00	0.590	pCi/L	11/22/21 09:01	11/30/21 13:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.4*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:04*	*1*
Y Carrier	*84.1*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:04*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**1.54**		0.533	0.547	5.00	0.590	pCi/L		11/30/21 22:53	1

Tracer/Carrier Summary

Client: TRC Environmental Corporation. Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
240-158608-1	MW-16-04S_20211021	80.0
240-158608-2	MW-17-05_20211021	97.3
240-158608-3	MW-17-08_20211021	95.3
240-158608-4	MW-17-12_20211021	91.5
240-158608-5	MW-17-13_20211021	103
240-158608-6	MW-17-14_20211021	96.3
240-158608-7	MW-17-15_20211021	99.5
240-158608-8	MW-17-18_20211021	91.8
240-158608-9	MW-17-19_20211021	97.3
240-158608-10	MW-17-20_20211020	101
240-158608-11	DUP-02_20211021	89.5
LCS 160-534003/1-A	Lab Control Sample	102
LCSD 160-534003/2-A	Lab Control Sample Dup	96.0
MB 160-534003/23-A	Method Blank	95.8

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
240-158608-1	MW-16-04S_20211021	92.7	83.7
240-158608-2	MW-17-05_20211021	80.3	81.9
240-158608-3	MW-17-08_20211021	81.0	82.6
240-158608-4	MW-17-12_20211021	83.0	83.4
240-158608-5	MW-17-13_20211021	103	82.2
240-158608-6	MW-17-14_20211021	93.7	83.7
240-158608-7	MW-17-15_20211021	78.5	84.5
240-158608-8	MW-17-18_20211021	88.4	78.9
240-158608-9	MW-17-19_20211021	89.6	85.2
240-158608-10	MW-17-20_20211020	85.8	84.1
240-158608-11	DUP-02_20211021	88.4	84.1
LCS 160-534011/1-A	Lab Control Sample	102	81.1
LCS 160-537972/1-A	Lab Control Sample	91.4	83.0
LCSD 160-534011/2-A	Lab Control Sample Dup	96.0	82.6
LCSD 160-537972/2-A	Lab Control Sample Dup	99.2	84.9
MB 160-534011/23-A	Method Blank	95.8	86.4
MB 160-537972/17-A	Method Blank	92.2	85.6

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-534003/23-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 537519 — **Prep Batch: 534003**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.3418	U	0.253	0.255	1.00	0.369	pCi/L	10/28/21 11:08	11/19/21 10:20	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.8*		*40 - 110*	*10/28/21 11:08*	*11/19/21 10:20*	*1*

Lab Sample ID: LCS 160-534003/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 537522 — **Prep Batch: 534003**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			15.1	12.38		1.53	1.00	0.381	pCi/L	82	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*102*		*40 - 110*

Lab Sample ID: LCSD 160-534003/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 537522 — **Prep Batch: 534003**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226			15.1	13.96		1.70	1.00	0.426	pCi/L	92	75 - 125	0.49	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*96.0*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-534011/23-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 537292 — **Prep Batch: 534011**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.972		0.532	0.598	1.00	0.594	pCi/L	10/28/21 12:02	11/18/21 13:13	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.8*		*40 - 110*	*10/28/21 12:02*	*11/18/21 13:13*	*1*
Y Carrier	*86.4*		*40 - 110*	*10/28/21 12:02*	*11/18/21 13:13*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-534011/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 537490 — **Prep Batch: 534011**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.2	12.94		1.49	1.00	0.540	pCi/L	106	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*102*		*40 - 110*
Y Carrier	*81.1*		*40 - 110*

Lab Sample ID: LCSD 160-534011/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 537490 — **Prep Batch: 534011**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			12.2	12.75		1.49	1.00	0.549	pCi/L	105	75 - 125	0.06	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*96.0*		*40 - 110*
Y Carrier	*82.6*		*40 - 110*

Lab Sample ID: MB 160-537972/17-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 539372 — **Prep Batch: 537972**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3053	U	0.324	0.325	1.00	0.529	pCi/L	11/22/21 09:01	11/30/21 13:04	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.2*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:04*	*1*
Y Carrier	*85.6*		*40 - 110*	*11/22/21 09:01*	*11/30/21 13:04*	*1*

Lab Sample ID: LCS 160-537972/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 539373 — **Prep Batch: 537972**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			12.1	10.36		1.29	1.00	0.567	pCi/L	85	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*91.4*		*40 - 110*
Y Carrier	*83.0*		*40 - 110*

Client: TRC Environmental Corporation. Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-537972/2-A
Matrix: Water
Analysis Batch: 539373

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 537972

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			12.1	11.69		1.37	1.00	0.482	pCi/L	96	75 - 125	0.50	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*99.2*		*40 - 110*
Y Carrier	*84.9*		*40 - 110*

Client: TRC Environmental Corporation. Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

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Prep Batch: 534003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158608-1	MW-16-04S_20211021	Total/NA	Water	PrecSep-21	
240-158608-2	MW-17-05_20211021	Total/NA	Water	PrecSep-21	
240-158608-3	MW-17-08_20211021	Total/NA	Water	PrecSep-21	
240-158608-4	MW-17-12_20211021	Total/NA	Water	PrecSep-21	
240-158608-5	MW-17-13_20211021	Total/NA	Water	PrecSep-21	
240-158608-6	MW-17-14_20211021	Total/NA	Water	PrecSep-21	
240-158608-7	MW-17-15_20211021	Total/NA	Water	PrecSep-21	
240-158608-8	MW-17-18_20211021	Total/NA	Water	PrecSep-21	
240-158608-9	MW-17-19_20211021	Total/NA	Water	PrecSep-21	
240-158608-10	MW-17-20_20211020	Total/NA	Water	PrecSep-21	
240-158608-11	DUP-02_20211021	Total/NA	Water	PrecSep-21	
MB 160-534003/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-534003/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-534003/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 534011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158608-5	MW-17-13_20211021	Total/NA	Water	PrecSep_0	
MB 160-534011/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-534011/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-534011/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 537972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-158608-1	MW-16-04S_20211021	Total/NA	Water	PrecSep_0	
240-158608-2	MW-17-05_20211021	Total/NA	Water	PrecSep_0	
240-158608-3	MW-17-08_20211021	Total/NA	Water	PrecSep_0	
240-158608-4	MW-17-12_20211021	Total/NA	Water	PrecSep_0	
240-158608-6	MW-17-14_20211021	Total/NA	Water	PrecSep_0	
240-158608-7	MW-17-15_20211021	Total/NA	Water	PrecSep_0	
240-158608-8	MW-17-18_20211021	Total/NA	Water	PrecSep_0	
240-158608-9	MW-17-19_20211021	Total/NA	Water	PrecSep_0	
240-158608-10	MW-17-20_20211020	Total/NA	Water	PrecSep_0	
240-158608-11	DUP-02_20211021	Total/NA	Water	PrecSep_0	
MB 160-537972/17-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-537972/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-537972/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Client Sample ID: MW-16-04S_20211021 — Lab Sample ID: 240-158608-1

Date Collected: 10/21/21 09:50 — **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534003	10/28/21 11:08	BMP	TAL SL
Total/NA	Analysis	9315		1	537522	11/19/21 10:16	FLC	TAL SL
Total/NA	Prep	PrecSep_0			537972	11/22/21 09:01	LPS	TAL SL
Total/NA	Analysis	9320		1	539373	11/30/21 12:58	EMH	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	539569	11/30/21 22:53	MLK	TAL SL

Client Sample ID: MW-17-05_20211021 — Lab Sample ID: 240-158608-2

Date Collected: 10/21/21 12:05 — **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534003	10/28/21 11:08	BMP	TAL SL
Total/NA	Analysis	9315		1	537522	11/19/21 10:16	FLC	TAL SL
Total/NA	Prep	PrecSep_0			537972	11/22/21 09:01	LPS	TAL SL
Total/NA	Analysis	9320		1	539373	11/30/21 12:58	EMH	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	539569	11/30/21 22:53	MLK	TAL SL

Client Sample ID: MW-17-08_20211021 — Lab Sample ID: 240-158608-3

Date Collected: 10/21/21 11:10 — **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534003	10/28/21 11:08	BMP	TAL SL
Total/NA	Analysis	9315		1	537522	11/19/21 10:16	FLC	TAL SL
Total/NA	Prep	PrecSep_0			537972	11/22/21 09:01	LPS	TAL SL
Total/NA	Analysis	9320		1	539373	11/30/21 12:58	EMH	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	539569	11/30/21 22:53	MLK	TAL SL

Client Sample ID: MW-17-12_20211021 — Lab Sample ID: 240-158608-4

Date Collected: 10/21/21 13:40 — **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534003	10/28/21 11:08	BMP	TAL SL
Total/NA	Analysis	9315		1	537522	11/19/21 10:17	FLC	TAL SL
Total/NA	Prep	PrecSep_0			537972	11/22/21 09:01	LPS	TAL SL
Total/NA	Analysis	9320		1	539373	11/30/21 12:59	EMH	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	539569	11/30/21 22:53	MLK	TAL SL

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Client Sample ID: MW-17-13_20211021 — Lab Sample ID: 240-158608-5

Date Collected: 10/21/21 10:00 **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534003	10/28/21 11:08	BMP	TAL SL
Total/NA	Analysis	9315		1	537522	11/19/21 10:17	FLC	TAL SL
Total/NA	Prep	PrecSep_0			534011	10/28/21 12:02	BMP	TAL SL
Total/NA	Analysis	9320		1	537291	11/18/21 13:09	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	539569	11/30/21 22:56	MLK	TAL SL

Client Sample ID: MW-17-14_20211021 — Lab Sample ID: 240-158608-6

Date Collected: 10/21/21 10:45 **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534003	10/28/21 11:08	BMP	TAL SL
Total/NA	Analysis	9315		1	537522	11/19/21 10:17	FLC	TAL SL
Total/NA	Prep	PrecSep_0			537972	11/22/21 09:01	LPS	TAL SL
Total/NA	Analysis	9320		1	539372	11/30/21 13:03	EMH	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	539569	11/30/21 22:53	MLK	TAL SL

Client Sample ID: MW-17-15_20211021 — Lab Sample ID: 240-158608-7

Date Collected: 10/21/21 15:00 **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534003	10/28/21 11:08	BMP	TAL SL
Total/NA	Analysis	9315		1	537522	11/19/21 10:17	FLC	TAL SL
Total/NA	Prep	PrecSep_0			537972	11/22/21 09:01	LPS	TAL SL
Total/NA	Analysis	9320		1	539372	11/30/21 13:03	EMH	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	539569	11/30/21 22:53	MLK	TAL SL

Client Sample ID: MW-17-18_20211021 — Lab Sample ID: 240-158608-8

Date Collected: 10/21/21 12:40 **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534003	10/28/21 11:08	BMP	TAL SL
Total/NA	Analysis	9315		1	537522	11/19/21 10:17	FLC	TAL SL
Total/NA	Prep	PrecSep_0			537972	11/22/21 09:01	LPS	TAL SL
Total/NA	Analysis	9320		1	539372	11/30/21 13:03	EMH	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	539569	11/30/21 22:53	MLK	TAL SL

Lab Chronicle

Client: TRC Environmental Corporation. Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Client Sample ID: MW-17-19_20211021 — Lab Sample ID: 240-158608-9

Date Collected: 10/21/21 11:50 — **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534003	10/28/21 11:08	BMP	TAL SL
Total/NA	Analysis	9315		1	537522	11/19/21 10:18	FLC	TAL SL
Total/NA	Prep	PrecSep_0			537972	11/22/21 09:01	LPS	TAL SL
Total/NA	Analysis	9320		1	539372	11/30/21 13:04	EMH	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	539569	11/30/21 22:53	MLK	TAL SL

Client Sample ID: MW-17-20_20211020 — Lab Sample ID: 240-158608-10

Date Collected: 10/20/21 14:20 — **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534003	10/28/21 11:08	BMP	TAL SL
Total/NA	Analysis	9315		1	537519	11/19/21 10:20	FLC	TAL SL
Total/NA	Prep	PrecSep_0			537972	11/22/21 09:01	LPS	TAL SL
Total/NA	Analysis	9320		1	539372	11/30/21 13:04	EMH	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	539569	11/30/21 22:53	MLK	TAL SL

Client Sample ID: DUP-02_20211021 — Lab Sample ID: 240-158608-11

Date Collected: 10/21/21 00:00 — **Matrix: Water**
Date Received: 10/25/21 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534003	10/28/21 11:08	BMP	TAL SL
Total/NA	Analysis	9315		1	537519	11/19/21 10:20	FLC	TAL SL
Total/NA	Prep	PrecSep_0			537972	11/22/21 09:01	LPS	TAL SL
Total/NA	Analysis	9320		1	539372	11/30/21 13:04	EMH	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	539569	11/30/21 22:53	MLK	TAL SL

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: TRC Environmental Corporation. Job ID: 240-158608-2
Project/Site: CCR DTE CCR DTE RRPP Nature and Extent

Laboratory: Eurofins TestAmerica, St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-21
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	06-30-21 *
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	01-01-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-21
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-21
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-22
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	03-01-22
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

* 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

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler: B. YELEN, A. WHALEY	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-87279-30605.1
Client Contact: Mr. Vincent Buening	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: Δ Yes Δ No			
Phone: 313-971-7080(Tel) 313-971-9022(Fax)	PO #: ~~TBD~~ 164688			
Email: vbuening@trccompanies.com	WO #: 413519.0005			
Project Name: CCR DTE RRPP Nature and Extent	Project #: 24016806			
Site: Michigan	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd, 9056A_28D	6010B, 6020	9315_Ra226 - Radium 226	9320_Ra228, Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	D	D		
MW-16-04S_20211021	10.21.21	0950	G	Water	N	N	X	X	X	X		
MW-17-05_20211021		1205		Water			X	X	X	X		
MW-17-08_20211021		1110		Water			X	X	X	X		
MW-17-12_20211021		1340		Water			X	X	X	X		
MW-17-13_20211021		1000		Water			X	X	X	X		
MW-17-14_20211021		1045		Water			X	X	X	X		
MW-17-15_20211021		1500		Water			X	X	X	X		
MW-17-18_20211021		1240		Water			X	X	X	X		
MW-17-19_20211021		1150		Water			X	X	X	X		
MW-17-20_20211020	10.20.21	1420		Water			X	X	X	X		
DUP-02_20211021	10.21.21	/		Water			X	X	X	X		

240-158608 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	B. YELEN	10.21.21 1700	TRC	TRC STOR.	10.21.21 1700	TRC
2	[signature]	10/22/21 1135	TRC	[signature]	10/22/21 1431	GT
3	[signature]	10/22/21 1431	GT	[signature]	10-23-21 0800	TA

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

Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

12/1/2021

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # : 158608**
Canton Facility

Client TRC Site Name

Cooler Received on 10-23-21 Opened on 10-25-21

Cooler unpacked by: Brandon

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

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

TestAmerica Cooler # 1A Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☒ See Multiple Cooler Form
   IR GUN# IR-14 (CF **+0.1** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°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_____	Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	No
-Were tamper/custody seals intact and uncompromised?	Yes	No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	No
4. Did custody papers accompany the sample(s)?	Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	Yes	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	Yes	No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N) and sample type of grab/comp(Y/N)?		
10. Were correct bottle(s) used for the test(s) indicated?	Yes	No
11. Sufficient quantity received to perform indicated analyses?	Yes	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No NA pH Strip Lot# **HC157842**
14. Were VOAs on the COC?	Yes	No
15. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this.	Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____	Yes	No
17. Was a LL Hg or Me Hg trip blank present? _____	Yes	No

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

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

Concerning _____

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

Samples processed by:

19. SAMPLE CONDITION

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

20. SAMPLE PRESERVATION

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

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login # : 158608

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form				
Cooler Description (Circle)	**IR Gun # (Circle)**	**Observed Temp °C**	**Corrected Temp °C**	**Coolant (Circle)**
TA Client Box Other	IR-14 IR-15	1.3	1.4	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	2.4	2.5	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	3.3	3.4	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	4.2	4.3	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	1.9	2.0	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	0.7	0.8	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	3.8	3.9	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15	4.1	4.2	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-14 IR-15			Wet Ice Blue Ice Dry Ice Water None
				☐ See Temperature Excursion Form

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

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
MW-16-04S_20211021	240-158608-B-1	Plastic 500ml - with Nitric Acid	<2			
MW-16-04S_20211021	240-158608-C-1	Plastic 1 liter - Nitric Acid	<2			
MW-16-04S_20211021	240-158608-D-1	Plastic 1 liter - Nitric Acid	<2			
MW-17-05_20211021	240-158608-B-2	Plastic 500ml - with Nitric Acid	<2			
MW-17-05_20211021	240-158608-C-2	Plastic 1 liter - Nitric Acid	<2			
MW-17-05_20211021	240-158608-D-2	Plastic 1 liter - Nitric Acid	<2			
MW-17-08_20211021	240-158608-B-3	Plastic 500ml - with Nitric Acid	<2			
MW-17-08_20211021	240-158608-C-3	Plastic 1 liter - Nitric Acid	<2			
MW-17-08_20211021	240-158608-D-3	Plastic 1 liter - Nitric Acid	<2			
MW-17-12_20211021	240-158608-B-4	Plastic 500ml - with Nitric Acid	<2			
MW-17-12_20211021	240-158608-C-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-12_20211021	240-158608-D-4	Plastic 1 liter - Nitric Acid	<2			
MW-17-13_20211021	240-158608-B-5	Plastic 500ml - with Nitric Acid	<2			
MW-17-13_20211021	240-158608-C-5	Plastic 1 liter - Nitric Acid	<2			
MW-17-13_20211021	240-158608-D-5	Plastic 1 liter - Nitric Acid	<2			
MW-17-14_20211021	240-158608-B-6	Plastic 500ml - with Nitric Acid	<2			
MW-17-14_20211021	240-158608-C-6	Plastic 1 liter - Nitric Acid	<2			
MW-17-14_20211021	240-158608-D-6	Plastic 1 liter - Nitric Acid	<2			
MW-17-15_20211021	240-158608-B-7	Plastic 500ml - with Nitric Acid	<2			
MW-17-15_20211021	240-158608-C-7	Plastic 1 liter - Nitric Acid	<2			
MW-17-15_20211021	240-158608-D-7	Plastic 1 liter - Nitric Acid	<2			
MW-17-18_20211021	240-158608-B-8	Plastic 500ml - with Nitric Acid	<2			
MW-17-18_20211021	240-158608-C-8	Plastic 1 liter - Nitric Acid	<2			
MW-17-18_20211021	240-158608-D-8	Plastic 1 liter - Nitric Acid	<2			
MW-17-19_20211021	240-158608-B-9	Plastic 500ml - with Nitric Acid	<2			
MW-17-19_20211021	240-158608-C-9	Plastic 1 liter - Nitric Acid	<2			
MW-17-19_20211021	240-158608-D-9	Plastic 1 liter - Nitric Acid	<2			
MW-17-20_20211021	240-158608-B-10	Plastic 500ml - with Nitric Acid	<2			
MW-17-20_20211021	240-158608-C-10	Plastic 1 liter - Nitric Acid	<2			
MW-17-20_20211021	240-158608-D-10	Plastic 1 liter - Nitric Acid	<2			
DUP-02_20211021	240-158608-B-11	Plastic 500ml - with Nitric Acid	<2			
DUP-02_20211021	240-158608-C-11	Plastic 1 liter - Nitric Acid	<2			
DUP-02_20211021	240-158608-D-11	Plastic 1 liter - Nitric Acid	<2			

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

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-144698.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin: Michigan	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 240-158608-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/7/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: TRC CCR DTE River Rouge Power Plant	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	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)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-16-04S_20211021 (240-158608-1)	10/21/21	09:50 Eastern		Water			X	X	X	2	
MW-17-05_20211021 (240-158608-2)	10/21/21	12:05 Eastern		Water			X	X	X	2	
MW-17-08_20211021 (240-158608-3)	10/21/21	11:10 Eastern		Water			X	X	X	2	
MW-17-12_20211021 (240-158608-4)	10/21/21	13:40 Eastern		Water			X	X	X	2	
MW-17-13_20211021 (240-158608-5)	10/21/21	10:00 Eastern		Water			X	X	X	2	
MW-17-14_20211021 (240-158608-6)	10/21/21	10:45 Eastern		Water			X	X	X	2	
MW-17-15_20211021 (240-158608-7)	10/21/21	15:00 Eastern		Water			X	X	X	2	
MW-17-18_20211021 (240-158608-8)	10/21/21	12:40 Eastern		Water			X	X	X	2	
MW-17-19_20211021 (240-158608-9)	10/21/21	11:50 Eastern		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature]	10-25-21 1622	ETA	FED EX		
2	FED EX			[signature]	10/26/21 0910	EIA SVL
3						

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

Ver: 06/08/2021

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

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Brooks, Kris M	Carrier Tracking No(s):	COC No: 240-144698 2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Kris.Brooks@Eurofinset.com	State of Origin: Michigan	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 240-158608-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 11/7/2021			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR DTE River Rouge Power Plant	Project #: 24016806			
Site: TRC CCR DTE River Rouge Power Plant	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification - Client ID (Lab ID)	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)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-17-20_20211021 (240-158608-10)	10/20/21	14:20 Eastern		Water			X	X	X	2	
DUP-02_20211021 (240-158608-11)	10/21/21	Eastern		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	10-25-21 1622	ETA	FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by: [signature]	Date/Time: 10/26/21 0910	Company: ETA STL
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: 06/08/2021

Login Sample Receipt Checklist

Client: TRC Environmental Corporation.

Job Number: 240-158608-2

Login Number: 158608
List Number: 2
Creator: Johnson, Autumn R

List Source: Eurofins TestAmerica, St. Louis
List Creation: 10/26/21 11:14 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix B
Data Quality Reviews

Laboratory Data Quality Review
Groundwater Monitoring Event February 2021
DTE Electric Company River Rouge Power Plant (DTE RRPP)

Groundwater samples were collected by TRC for the February 2021 sampling event for the Bottom Ash Impoundment at the DTE RRPP. Samples were analyzed for anions, total dissolved solids, total recoverable metals, and radium by Eurofins-Test America Laboratories, Inc. (Eurofins-TA) located in North Canton, Ohio and Eurofins-TA located in St. Louis, Missouri. The laboratory analytical results are reported in laboratory reports 240-145119-1 revision 1 and 240-145119-2 revision 1.

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

- MW-16-01
- MW-16-02
- MW-16-03
- MW-17-06
- MW-17-07

During the February 2021 sampling event, a groundwater sample was collected from each of the following nature and extent wells:

- EW-01
- EW-03
- EW-04
- EW-05
- EW-06
- EW-07
- EW-08
- EW-09
- EW-10
- EW-11

Each sample was analyzed for one or more of the following constituents:

Analyte Group	Method
Anions (Fluoride, Chloride, Sulfate)	SW846 9056A
Total Dissolved Solids (TDS)	SM 2540C
Total Recoverable Metals	SW846 6010B, SW846 6020
Mercury	SW846 7470A
Radium (Radium-226, Radium-228, Combined Radium)	EPA Method 9315, EPA Method 9320

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 Methods Data Review (USEPA, 2020) and the Department of Energy Evaluation of Radiochemical Data Usability (USDOE, 1997). 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. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures;
- Data for laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs). The LCS/LCSDs are used to assess the accuracy and precision 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;
- Percent recoveries for carriers for radiochemistry only. Carriers are used to assess the chemical yield for the preparation and/or instrument efficiency;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes;
- 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.

- The reviewed Appendix III and IV constituents will be utilized for the purposes of an assessment monitoring program.
- Data are usable for the purposes of the assessment monitoring program.
- When the data are evaluated through an assessment monitoring statistical program, findings below may be used to support the removal of outliers.

QA/QC Sample Summary

- Target analytes were not detected in the method blanks.
- LCS recoveries for all target analytes were within laboratory control limits.
- MS/MSD analyses were performed on sample MW16-02_20210225 for anions. The percent recoveries (%Rs) and relative percent differences (RPDs) for the MS/MSD analyses met the method acceptance criteria.

- The field duplicate pair samples were DUP-01_20210225/ MW-16-03_20210225 and DUP-02_20210225/ EW-01_20210225. The RPDs between the parent and duplicate samples were within acceptance limits.
- Samples did not undergo a 21-day wait period prior to radium analysis; however, combined radium results were < 5 pCi/L so there is no impact on data usability.
- Carrier recoveries, where applicable, were within 40-110%.
- The RL for molybdenum (5 ug/L) was below the quality assurance project plan (QAPP)-specified RL of 10.0 ug/L. Only sample MW-17-06 was affected as the detected concentration (8.1 ug/L) for molybdenum was below the QAPP-specified RL.

Laboratory Data Quality Review
Groundwater Monitoring Event October 2021
DTE Electric Company River Rouge Power Plant (DTE RRPP)

Groundwater samples were collected by TRC for the October 2021 sampling event for the Bottom Ash Impoundment at the DTE RRPP. Samples were analyzed for anions, total dissolved solids, total recoverable metals, and radium by Eurofins-Test America Laboratories, Inc. (Eurofins-TA) located in North Canton, Ohio and/or Eurofins-TA located in St. Louis, Missouri. The laboratory analytical results are reported in laboratory reports 240-158608-1, 240-158608-2, 240-158615-1 Revision 1, and 240-158615-2.

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

- MW-16-01
- MW-16-02
- MW-16-03
- MW-17-06
- MW-17-07

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

- MW-16-04S
- MW-17-05
- MW-17-08
- MW-17-12
- MW-17-13
- MW-17-14
- MW-17-15
- MW-17-18
- MW-17-19
- MW-17-20

Each sample was analyzed for one or more of the following constituents:

Analyte Group	Method
Anions (Fluoride, Chloride, Sulfate)	SW846 9056A
Total Dissolved Solids (TDS)	SM 2540C
Total Recoverable Metals	SW846 6010B, SW846 6020
Total Mercury	SW846 7470A
Radium (Radium-226, Radium-228, Combined Radium)	EPA 9315 and EPA 9320

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 Methods Data Review (USEPA, 2020) and the Department of Energy Evaluation of Radiochemical Data Usability (USDOE, 1997). 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. Method blanks are used to assess potential contamination arising from laboratory sample preparation and/or analytical procedures;
- Data for laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs). The LCS/LCSDs are used to assess the accuracy and precision 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;
- Percent recoveries for carriers for radiochemistry only. Carriers are used to assess the chemical yield for the preparation and/or instrument efficiency;
- Data for blind field duplicates. Field duplicate samples are used to assess variability introduced by the sampling and analytical processes;
- 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.

- The reviewed Appendix III and IV constituents will be utilized for the purposes of an assessment monitoring program.
- Data are usable for the purposes of the assessment monitoring program.
- When the data are evaluated through an assessment monitoring statistical program, findings below may be used to support the removal of outliers.

QA/QC Sample Summary

- Target analytes were not detected in the method blanks with the exception of radium 228 (2.972 pCi/L) detected in MB 160-534011/23-A and radium 226 (0.4705 pCi/L) in MB 160-533998/23-A. Detections of radium 226 and/or radium 228 in associated groundwater samples are potentially false positive results as summarized in the attached table, Appendix B.

- LCS recoveries for all target analytes were within laboratory control limits with the exception the percent recovery (%R) for radium 226 (71%) in LCS 160-534284/1-A which was below the acceptance limits (75-125%). The detected result for radium 226 in the associated groundwater sample is potentially biased low as summarized in the attached table, Appendix B.
- MS/MSD analyses were performed on samples MW-17-14 and MW-16-02_20211020 for anions. The %Rs and relative percent differences (RPDs) for the MS/MSD analyses met the method acceptance criteria.
- Laboratory duplicate analyses were performed on samples MW-16-04S_20211021 and MW-16-01_20211020 for TDS. The RPDs between the parent and duplicate samples were within acceptance limits.
- The field duplicate pair samples were DUP-01_20211020/MW-16-03_20211020 and DUP-02_20211021/MW-16-04S_20211021. The RPDs between the parent and duplicate samples were within acceptance limits.
- Carrier recoveries, where applicable, were within 40-110%.
- Several laboratory reporting limits (RLs) did not meet the quality assurance project plan (QAPP) specified RLs.
  - The RL for molybdenum (5 ug/L) was below the QAPP-specified RL of 10.0 ug/L. Results for molybdenum were detected below the QAPP-specified RL in samples MW-16-04S_20211021 (5.0 ug/L), MW-17-19_20211021 (7.1 ug/L), DUP-02_20211021 (6.2 ug/L) and MW-17-06_20211020 (8.5 ug/L).
  - The RL for boron (100 ug/L) was below the QAPP-specified RL of 200 ug/L. Results for boron were detected below the QAPP-specified RL in samples MW-17-12_20021021 (130 ug/L), MW-16-03_20211020 (150 ug/L), and DUP-01_20211020 (150 ug/L).
  - The RL for chromium (5.0 ug/L) was above the QAPP RL of 2.0 ug/L. Samples MW-16-01_20211020, MW-16-02_20211020, MW-16-03_20211020, MW-17-06_20211020, MW-17-07_20211021, and DUP-01_20211020 were non-detect at 5.0 ug/L for chromium.
  - The minimum detection concentration for radium 228 and radium 226 for sample MW-17-15_20211021 (2.11 pCi/L and 1.38 pCi/L, respectively) were elevated above the QAPP RL of 1.00 pCi/L.

Table 1
Summary of Data Non-Conformances for River Rouge Power Plant CCR Groundwater Analytical Data
DTE Electric Company Monitoring Program
River Rouge, Michigan

Samples	Collection Date	Analyte	Non-Conformance/Issue
MW-17-13_20211021	10/21/2021	Radium 228	Potential false positive result due to method blank contamination
MW-16-03_20211020 MW-17-07_20211021 DUP-01_02211020	10/20/2021 10/21/2021 10/20/2021	Radium 226	Potential false positive result due to method blank contamination
MW-16-01_20211020	10/20/2021	Radium 226	LCS percent recovery below criteria; potential low bias

Appendix C
Appendix IV Assessment Monitoring Statistical Evaluation – February 2021

1540 Eisenhower Pl.
Ann Arbor, MI 48108

T 734.971.7080
TRCcompanies.com

Technical Memorandum

Date:	May 17, 2021
To:	DTE Electric Company
From:	Sarah Holmstrom, TRC Kristin Lowery, TRC
Project No.:	413591.0005.0000 Phase 001, Task 001
Subject:	Appendix IV Assessment Monitoring Statistical Evaluation for February 2021 Groundwater Monitoring Event – DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit

Introduction

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, applies to DTE Electric Company (DTE Electric) River Rouge Power Plant (RRPP) Coal Combustion Residual Bottom Ash Basin (BAB) CCR unit located in River Rouge, Michigan (the Site).

On October 15, 2018, it was determined that pursuant to §257.93 (h) that arsenic and lithium are present at statistically significant levels above their respective groundwater protection standards (GWPSs) at one or more down gradient well locations at the RRPP BAB CCR unit[1].

DTE Electric has completed an assessment of corrective measures per §257.95(g)(3), the RRPP ceased coal fired operations in May 2020, and the CCR closure by removal of the BAB was completed from June through September 2020 as documented in the *Bottom Ash Basin Closure Certification Report DTE Electric Company River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit, 1 Belanger Park Drive, River Rouge, Michigan* dated November 2020. Although CCR removal corrective measures have been implemented a final remedy has not yet been formally selected. DTE Electric has continued operating a groundwater extraction system as a presumptive remedy to maintain hydraulic control around the RRPP BAB to address the uncertainty around the potential migration of CCR constituents from the RRPP BAB to groundwater. This system has effectively captured groundwater in the vicinity of the RRPP BAB CCR unit since it began operation on March 2, 2018 and eliminates the potential for Appendix III and Appendix IV parameters to migrate from the RRPP

[1] TRC. 2018. *Notification of Appendix IV Constituents at Statistically Significant Levels Above the Groundwater Protection Standards; River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit,* October.

BAB CCR unit.

In accordance with §257.96(b), DTE Electric is continuing assessment monitoring for the RRPP BAB CCR unit. The first semiannual assessment monitoring event of 2021 for the Appendix III and Appendix IV constituents was conducted on February 25, 2021. In accordance with §257.95, the assessment monitoring data must be evaluated to determine whether or not Appendix IV constituents are detected at statistically significant levels above the GWPSs. This memorandum presents the confidence limits derived for the Appendix IV parameters for the RRPP BAB CCR unit that will be used to compare to the established GWPSs.

Assessment Monitoring Statistical Evaluation

The three compliance wells utilized for the RRPP BAB CCR unit are MW-16-01, MW-16-02 and MW-16-03. Following the first semiannual assessment monitoring sampling event for 2021, compliance well data for the RRPP BAB were evaluated in accordance with the Groundwater Statistical Evaluation Plan (Stats Plan) (TRC, October 2017; Revised December 2017). For each detected constituent, the concentrations for each well were first compared directly to the GWPS within the dataset collected subsequent to the groundwater extraction system operation. Parameter-well combinations that included a direct exceedance of the GWPS were retained for further analysis. As a result, arsenic was retained for evaluation at MW-16-01 and lithium at MW-16-01 and MW-16-02.

Groundwater data were then evaluated utilizing 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), confidence limits were selected to perform the statistical comparison of compliance data to a fixed standard. Parametric and non-parametric confidence intervals were calculated for each of the CCR Appendix IV parameters using a 99 percent confidence level, i.e., a significance level (α) of 0.01. The following narrative describes the methods employed, the results obtained and the ChemStat™ output files are included as an attachment.

Due to the initiation of operation of the groundwater extraction system to establish groundwater capture in the area of the BAB in March of 2018 and subsequent changes in groundwater flow rate and direction, the data set used for the February 2021 statistical evaluation was limited to the data collected subsequent to the operation of the groundwater extraction system (April 2018 to February 2021). Use of the eight sampling events post-system startup provides more than the minimum density of data (at least 4 data points) as recommended per the UG and is representative of current conditions at the BAB under the hydraulic influence of the groundwater extraction system. Additional data collected from monitoring events performed subsequent to March 2018 will continue to be incorporated into the statistical evaluation moving forward and will roll after eight rounds have accumulated, as appropriate.

The statistical data evaluation included the following steps:

- Review of data quality checklists for the assessment monitoring data sets for CCR Appendix IV constituents;
- Evaluation of percentage of non-detects for each downgradient well-constituent pair;

- Graphical representation of the assessment monitoring 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 visual trends apparent in the graphical representations for statistical significance;
- Distribution of the data; and
- Calculation of the confidence intervals for each cumulative dataset.

The results of these evaluations are presented and discussed below.

Data Quality

Data from the first semiannual monitoring event for 2021 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.

Percentage of Non-detects

The percentage of non-detect observations for constituents with one or more detection above a GWPS is included in Table 1. Non-detect data was handled in accordance with the Stats Plan for the purposes of calculating confidence intervals.

Time versus Concentration Graphs

The T v. C graphs did not show any potential outliers. The T v. C graphs showed potential trending for some Appendix IV well/constituent pairs. These were tested by the ChemStat™ software to assess whether the trends are statistically significant.

Outlier Testing

No potential outliers were observed on the T v. C graphs; therefore, no outlier testing was performed.

Trend Analysis

Visual trends apparent in the T v. C graphs were evaluated in ChemStat™ using the Mann-Kendall Trend Analysis to determine if a subset of data should be used in calculating the confidence interval. Trends were evaluated using a 95-percent (one-tailed) confidence level, i.e., a significance level (α) of 0.05. A statistically significant decreasing trend was identified for lithium at MW-16-02. The trend is causing the confidence interval to widen. Calculating a confidence interval around a trending data set incorporates not only variability present naturally in the underlying dataset, but also incorporates variability due to the trend itself. The decreasing trend is driven by the higher concentrations immediately following startup of the groundwater extraction system and data have been generally stable for the past two years; therefore, traditional confidence interval calculations are presented in this statistical evaluation until more data are available.

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 1.

Confidence Intervals

Variability is recognized in the data set due to changing groundwater quality in response to the operation of the groundwater extraction system. Calculating a confidence interval around a trending data set incorporates not only variability present naturally in the underlying dataset but can exaggerate variability. Data collected since the initiation of operation of the groundwater extraction system in March 2018 has been generally stable and do not exhibit statistically significant trends.

Table 1 presents the calculated confidence intervals for each well-constituent pair. For normal and lognormal distributions, confidence intervals are calculated for 99 percent confidence using parametric methods. For non-normal datasets, a nonparametric confidence interval is utilized, resulting in the highest and lowest values from the contributing dataset as the confidence limits.

The confidence intervals calculated through the above-described process will be compared to the GWPS to determine if an exceedance has occurred. An exceedance of the standard occurs when the 99 percent lower confidence level of the downgradient data exceeds the GWPS.

Attachments

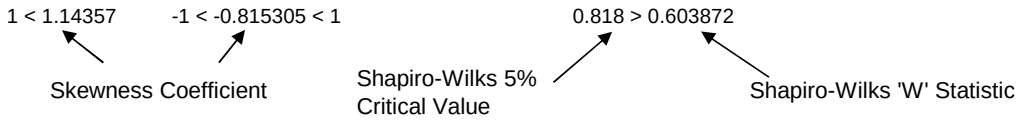
Table 1 – Summary of Descriptive Statistics and Confidence Interval Calculations
Attachment A – ChemStat™ Outputs

Table 1
Summary of Descriptive Statistics and Confidence Interval Calculations

Table 1
Summary of Descriptive Statistics and Confidence Interval Calculations
Assessment Monitoring Statistical Evaluation - February 2021
DTE Electric Company – River Rouge Power Plant

Parameter[1]	Percent Non-Detect	Outliers?	Trend?	Skewness		Shapiro-Wilks Test (5% Critical Value)		Parametric / Non-Parametric	Confidence Interval[2]
				Un-Transformed	Natural Log	Un-Transformed	Natural Log		
MW-16-01									
Arsenic	0%	No	No	-1 < -0.825283 < 1	--	--	--	Parametric	[130, 170]
Lithium	0%	No	No	-1 < -0.235751 < 1	--	--	--	Parametric	[43, 59]
MW-16-02									
Lithium	0%	No	Yes	1 < 1.1531	-1 < 0.578394 < 1	--	--	Parametric	[13, 33]

Notes:



(1) Well-parameter combinations that have one or more direct exceedances of the Groundwater Protection Standard within the most recent eight sampling events.
(2) The most recent eight data points are used to calculate the confidence interval to be representative of current conditions.

Attachment A
ChemStat™ Confidence Interval Outputs

Concentrations (ug/L)

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 48
Total Non-Detect: 13
Percent Non-Detects: 27.0833%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There are 3 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	16	0 (0%)	8/5/2016	37	37
			9/30/2016	37	37
			11/18/2016	39	39
			1/20/2017	40	40
			3/10/2017	38	38
			4/28/2017	37	37
			6/16/2017	35	35
			7/21/2017	36	36
			4/6/2018	160	160
			5/30/2018	170	170
			10/16/2018	160	160
			3/29/2019	170	170
			9/26/2019	140	140
			3/20/2020	170	170
			11/11/2020	130	130
			2/25/2021	110	110
MW-16-02	16	5 (31.25%)	8/5/2016	24	24
			9/30/2016	27	27
			11/18/2016	30	30
			1/20/2017	31	31
			3/10/2017	29	29
			4/28/2017	30	30
			6/16/2017	30	30
			7/21/2017	27	27
			4/6/2018	15	15
			5/30/2018	ND<5 U	ND<5 U
			10/16/2018	7.9	7.9
			3/29/2019	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			3/20/2020	ND<5 U	ND<5 U
			11/11/2020	ND<5 U	ND<5 U
			2/25/2021	2.6	2.6
MW-16-03	16	8 (50%)	8/5/2016	91	91
			9/30/2016	40	40
			11/18/2016	21	21
			1/20/2017	13	13
			3/10/2017	12	12
			4/28/2017	12	12
			6/16/2017	12	12
			7/21/2017	12	12
			4/6/2018	ND<5 U	ND<5 U
			5/30/2018	ND<5 U	ND<5 U
			10/16/2018	ND<5 U	ND<5 U
			3/29/2019	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			3/20/2020	ND<5 U	ND<5 U
			11/11/2020	ND<5 U	ND<5 U
			2/25/2021	ND<5	ND<5

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ug/L)

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 48
Total Non-Detect: 5
Percent Non-Detects: 10.4167%
Total Background Measurements: 0
There are 0 background locations

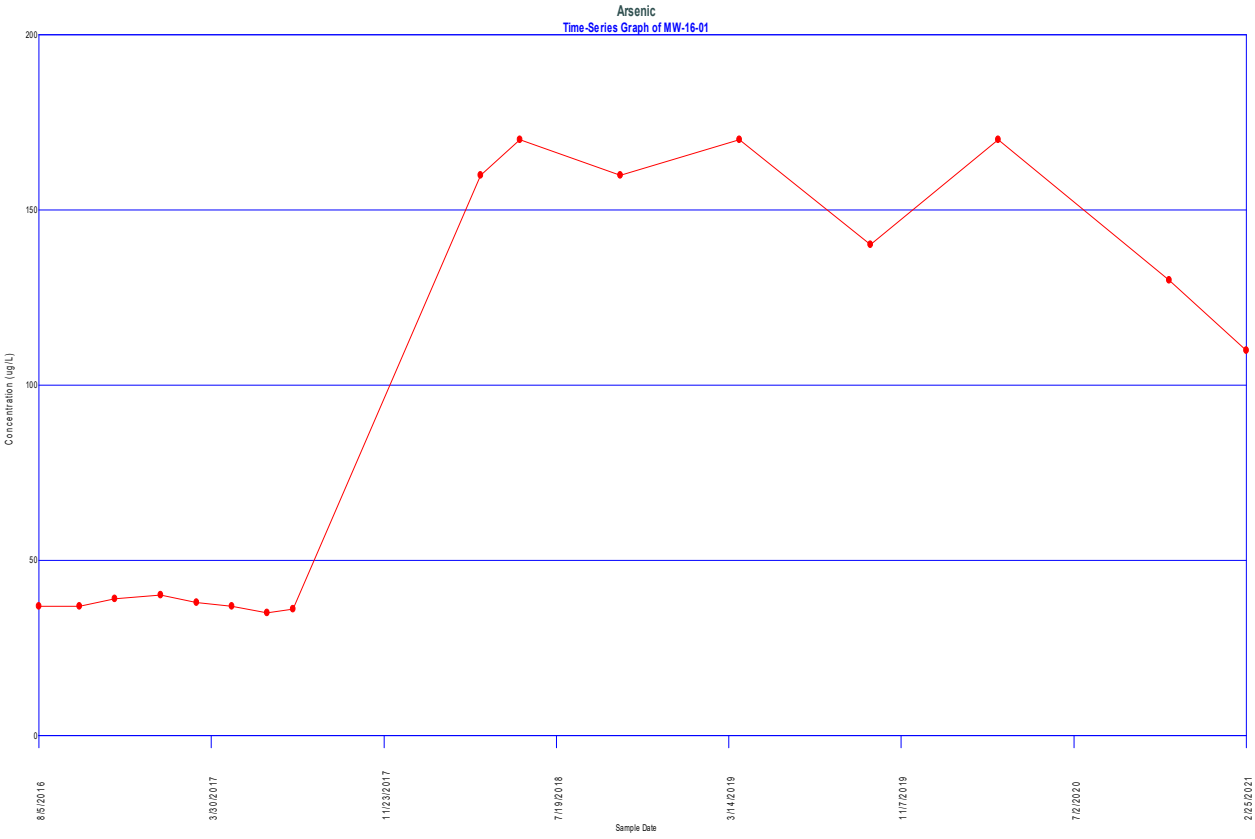
Loc.	Meas.	ND	Date	Conc.	Original

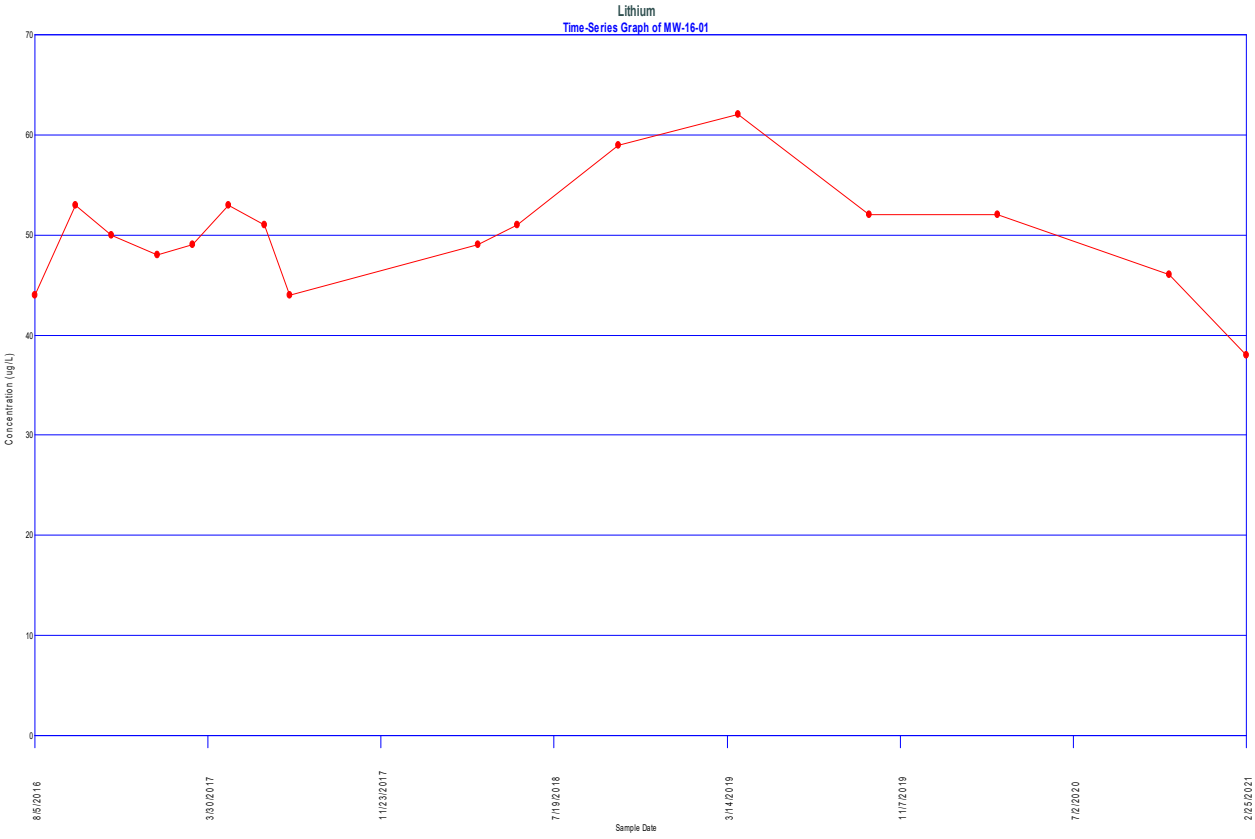
There are 3 compliance locations

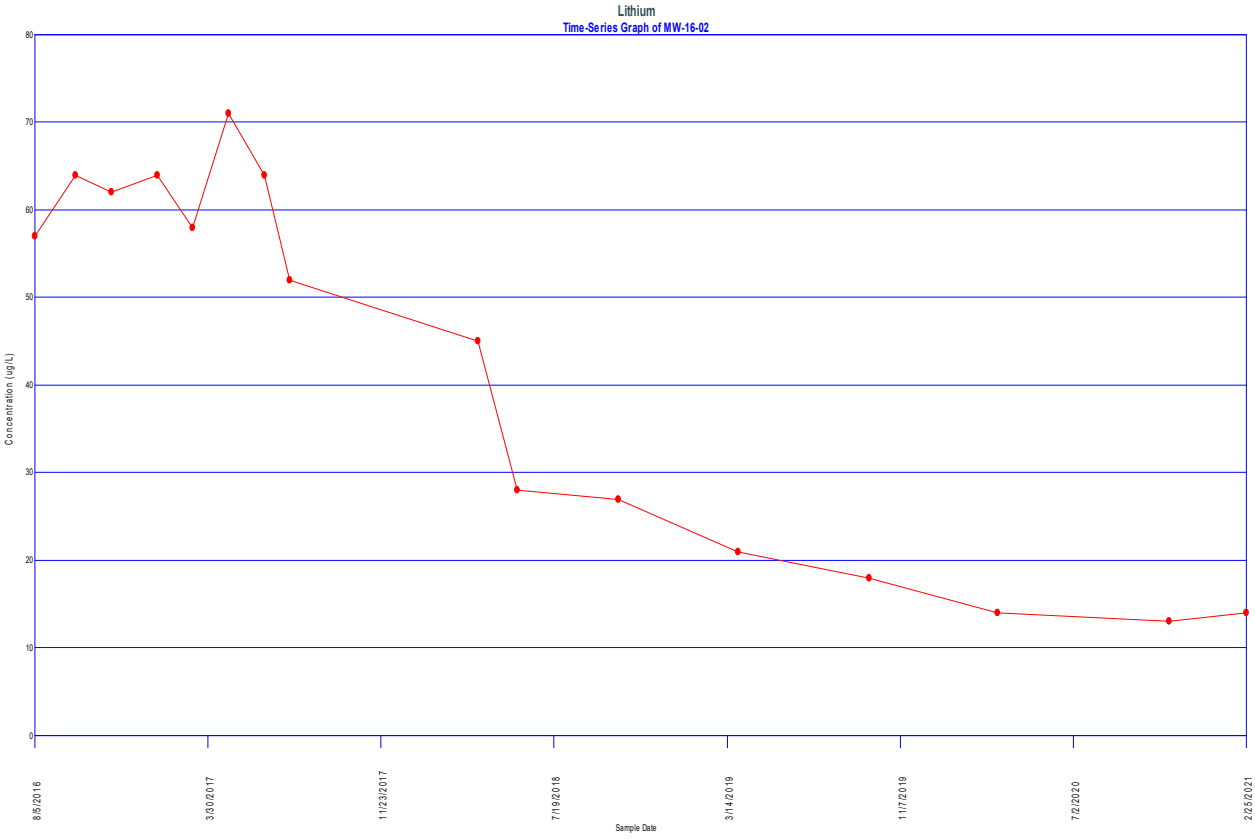
Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	16	0 (0%)	8/5/2016	44	44
			9/30/2016	53	53
			11/18/2016	50	50
			1/20/2017	48	48
			3/10/2017	49	49
			4/28/2017	53	53
			6/16/2017	51	51
			7/21/2017	44	44
			4/6/2018	49	49
			5/30/2018	51	51
			10/16/2018	59	59
			3/29/2019	62	62
			9/26/2019	52	52
			3/20/2020	52	52
			11/11/2020	46	46
			2/25/2021	38	38
MW-16-02	16	0 (0%)	8/5/2016	57	57
			9/30/2016	64	64
			11/18/2016	62	62
			1/20/2017	64	64
			3/10/2017	58	58
			4/28/2017	71	71
			6/16/2017	64	64
			7/21/2017	52	52
			4/6/2018	45	45
			5/30/2018	28	28
			10/16/2018	27	27
			3/29/2019	21	21
			9/26/2019	18	18
			3/20/2020	14	14
			11/11/2020	13	13
			2/25/2021	14	14
MW-16-03	16	5 (31.25%)	8/5/2016	29	29
			9/30/2016	44	44
			11/18/2016	44	44
			1/20/2017	49	49
			3/10/2017	45	45
			4/28/2017	51	51
			6/16/2017	49	49
			7/21/2017	41	41
			4/6/2018	15	15
			5/30/2018	11	11
			10/16/2018	ND<8 U	ND<8 U
			3/29/2019	ND<8 U	ND<8 U
			9/26/2019	ND<8 U	ND<8 U
			3/20/2020	ND<8 U	ND<8 U
			11/11/2020	ND<8 U	ND<8 U
			2/25/2021	4.8	4.8

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original


Arsenic
Time-Series Graph of MW-16-01
200
150
100
50
0
Concentration (ug/L)
8/5/2016
3/30/2017
11/23/2017
7/19/2018
3/14/2019
11/7/2019
7/2/2020
2/25/2021
Sample Date


Lithium
Time-Series Graph of MW-16-01
Concentration (ug/L)
70
60
50
40
30
20
10
0
8/5/2016
3/30/2017
11/23/2017
7/19/2018
3/14/2019
11/7/2019
7/2/2020
2/25/2021
Sample Date


Lithium
Time-Series Graph of MW-16-02
Concentration (ug/L)
80
70
60
50
40
30
20
10
0
8/5/2016
3/30/2017
11/23/2017
7/19/2018
3/14/2019
11/7/2019
7/2/2020
2/25/2021
Sample Date

Concentrations (ug/L)

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 24
Total Non-Detect: 13
Percent Non-Detects: 54.1667%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There are 3 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	8	0 (0%)	4/6/2018	160	160
			5/30/2018	170	170
			10/16/2018	160	160
			3/29/2019	170	170
			9/26/2019	140	140
			3/20/2020	170	170
			11/11/2020	130	130
			2/25/2021	110	110
			8/5/2016	**37**	**37**
			9/30/2016	**37**	**37**
			11/18/2016	**39**	**39**
			1/20/2017	**40**	**40**
			3/10/2017	**38**	**38**
			4/28/2017	**37**	**37**
			6/16/2017	**35**	**35**
			7/21/2017	**36**	**36**
MW-16-02	8	5 (62.5%)	4/6/2018	15	15
			5/30/2018	ND<5 U	ND<5 U
			10/16/2018	7.9	7.9
			3/29/2019	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			3/20/2020	ND<5 U	ND<5 U
			11/11/2020	ND<5 U	ND<5 U
			2/25/2021	2.6	2.6
			8/5/2016	**24**	**24**
			9/30/2016	**27**	**27**
			11/18/2016	**30**	**30**
			1/20/2017	**31**	**31**
			3/10/2017	**29**	**29**
			4/28/2017	**30**	**30**
			6/16/2017	**30**	**30**
			7/21/2017	**27**	**27**
MW-16-03	8	8 (100%)	4/6/2018	ND<5 U	ND<5 U
			5/30/2018	ND<5 U	ND<5 U
			10/16/2018	ND<5 U	ND<5 U
			3/29/2019	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			3/20/2020	ND<5 U	ND<5 U
			11/11/2020	ND<5 U	ND<5 U
			2/25/2021	ND<5	ND<5
			8/5/2016	**91**	**91**
			9/30/2016	**40**	**40**
			11/18/2016	**21**	**21**
			1/20/2017	**13**	**13**
			3/10/2017	**12**	**12**
			4/28/2017	**12**	**12**
			6/16/2017	**12**	**12**
			7/21/2017	**12**	**12**

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ug/L)

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 24
Total Non-Detect: 5
Percent Non-Detects: 20.8333%
Total Background Measurements: 0
There are 0 background locations

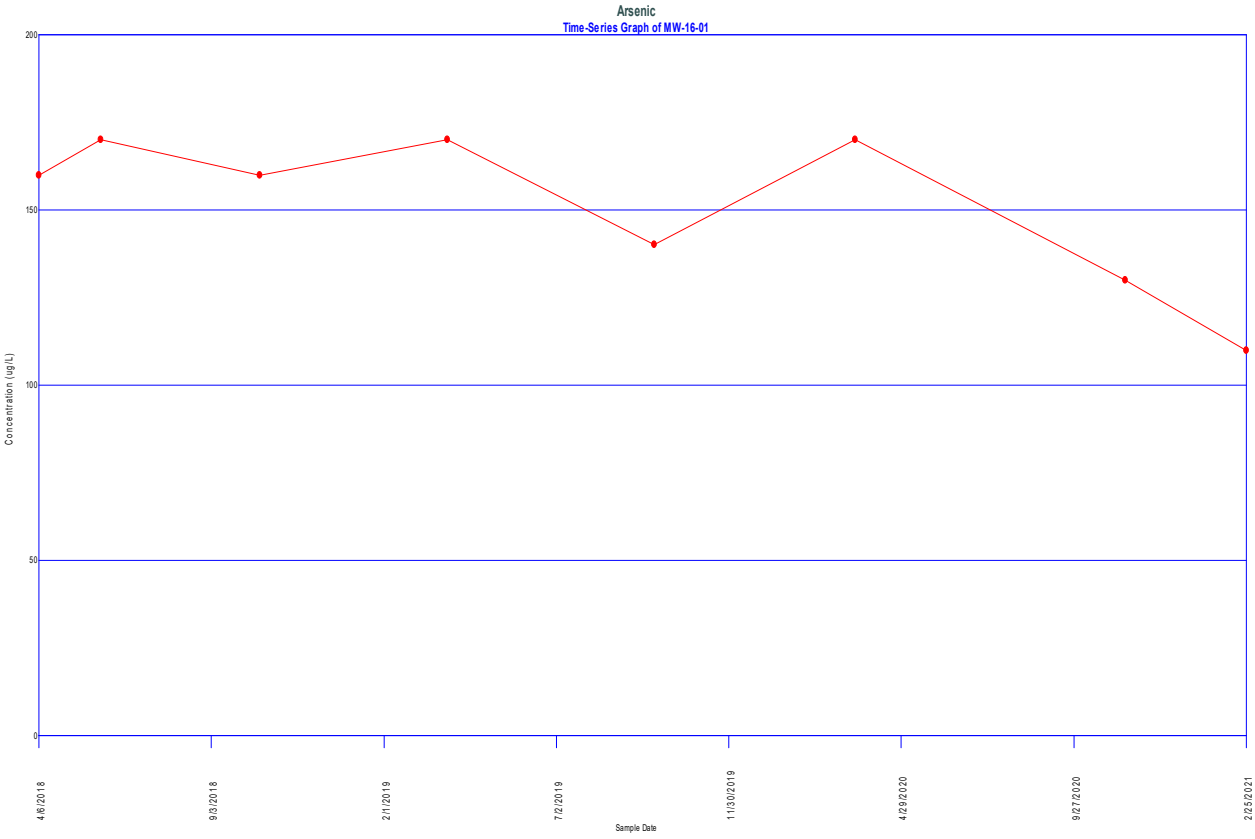
Loc.	Meas.	ND	Date	Conc.	Original

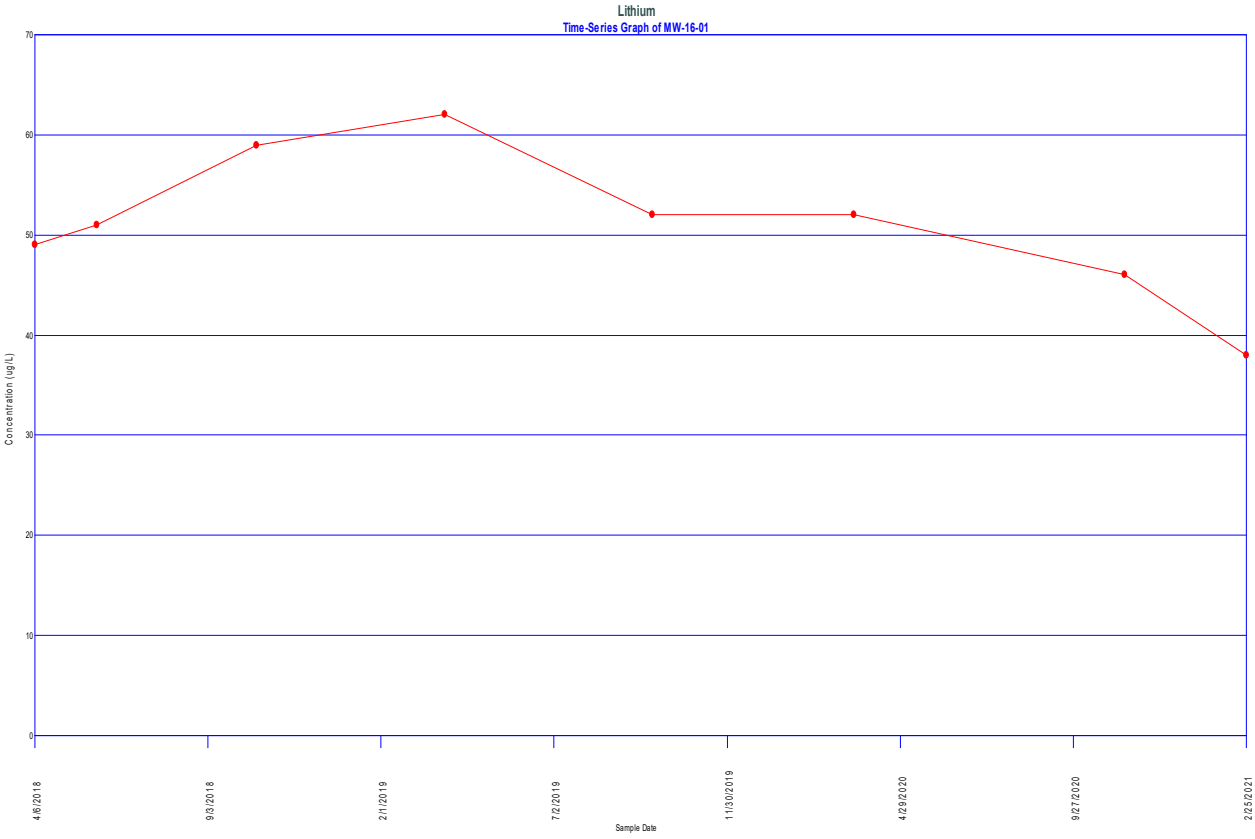
There are 3 compliance locations

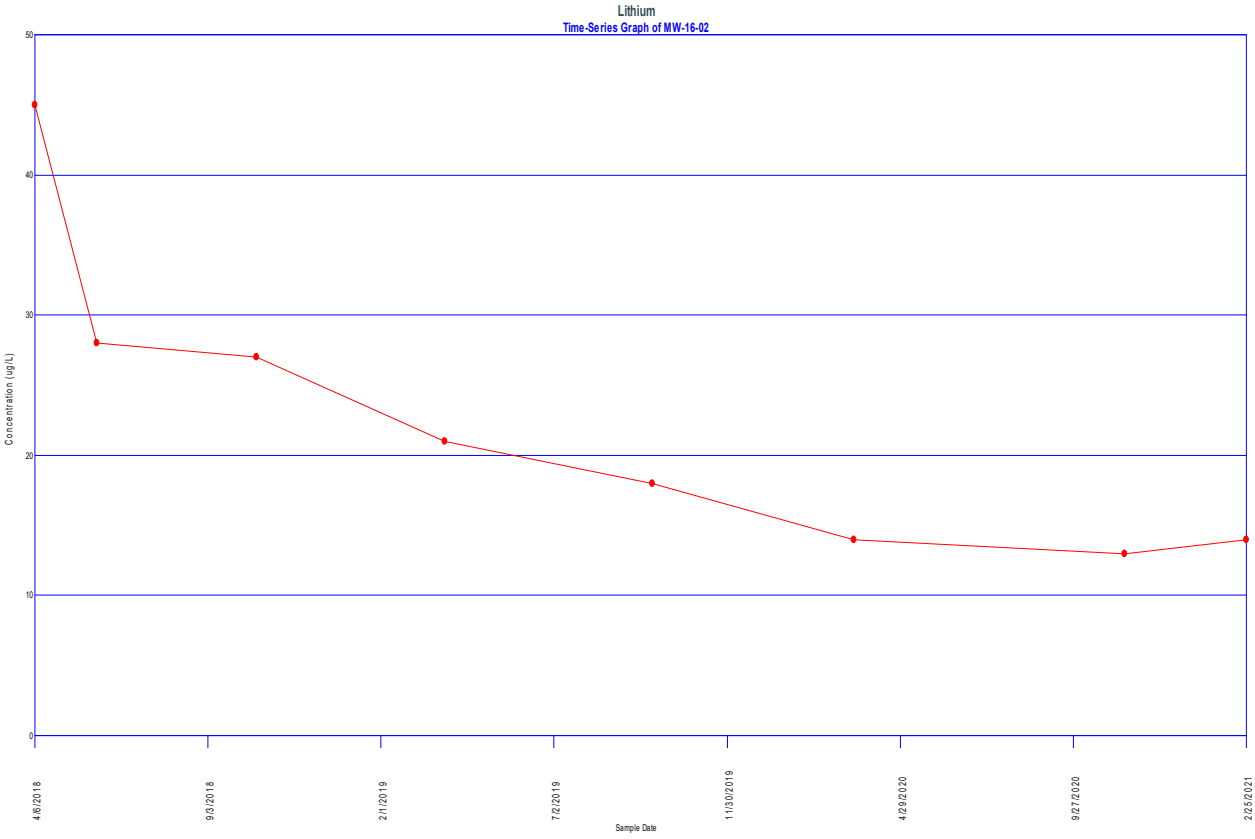
Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	8	0 (0%)	4/6/2018	49	49
			5/30/2018	51	51
			10/16/2018	59	59
			3/29/2019	62	62
			9/26/2019	52	52
			3/20/2020	52	52
			11/11/2020	46	46
			2/25/2021	38	38
			8/5/2016	**44**	**44**
			9/30/2016	**53**	**53**
			11/18/2016	**50**	**50**
			1/20/2017	**48**	**48**
			3/10/2017	**49**	**49**
			4/28/2017	**53**	**53**
			6/16/2017	**51**	**51**
			7/21/2017	**44**	**44**
MW-16-02	8	0 (0%)	4/6/2018	45	45
			5/30/2018	28	28
			10/16/2018	27	27
			3/29/2019	21	21
			9/26/2019	18	18
			3/20/2020	14	14
			11/11/2020	13	13
			2/25/2021	14	14
			8/5/2016	**57**	**57**
			9/30/2016	**64**	**64**
			11/18/2016	**62**	**62**
			1/20/2017	**64**	**64**
			3/10/2017	**58**	**58**
			4/28/2017	**71**	**71**
			6/16/2017	**64**	**64**
			7/21/2017	**52**	**52**
MW-16-03	8	5 (62.5%)	4/6/2018	15	15
			5/30/2018	11	11
			10/16/2018	ND<8 U	ND<8 U
			3/29/2019	ND<8 U	ND<8 U
			9/26/2019	ND<8 U	ND<8 U
			3/20/2020	ND<8 U	ND<8 U
			11/11/2020	ND<8 U	ND<8 U
			2/25/2021	4.8	4.8
			8/5/2016	**29**	**29**
			9/30/2016	**44**	**44**
			11/18/2016	**44**	**44**
			1/20/2017	**49**	**49**
			3/10/2017	**45**	**45**
			4/28/2017	**51**	**51**
			6/16/2017	**49**	**49**
			7/21/2017	**41**	**41**

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original


Arsenic
Time-Series Graph of MW-16-01
200
150
100
50
0
Concentration (ug/L)
4/6/2018
9/3/2018
2/1/2019
7/2/2019
11/30/2019
4/29/2020
9/27/2020
2/25/2021
Sample Date


Lithium
Time-Series Graph of MW-16-01
Concentration (ug/L)
70
60
50
40
30
20
10
0
4/6/2018
9/3/2018
2/1/2019
7/2/2019
11/30/2019
4/29/2020
9/27/2020
2/25/2021
Sample Date


Lithium
Time-Series Graph of MW-16-02
Concentration (ug/L)
50
40
30
20
10
0
4/6/2018
9/3/2018
2/11/2019
7/2/2019
11/30/2019
4/29/2020
9/27/2020
2/25/2021
Sample Date

Mann-Kendall Trend Analysis

Parameter: Arsenic

Location: MW-16-01

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
170	160	10	1	0
160	160	0	1	0
170	160	10	2	0
140	160	-20	2	1
170	160	10	3	1
130	160	-30	3	2
110	160	-50	3	3
160	170	-10	3	4
170	170	0	3	4
140	170	-30	3	5
170	170	0	3	5
130	170	-40	3	6
110	170	-60	3	7
170	160	10	4	7
140	160	-20	4	8
170	160	10	5	8
130	160	-30	5	9
110	160	-50	5	10
140	170	-30	5	11
170	170	0	5	11
130	170	-40	5	12
110	170	-60	5	13
170	140	30	6	13
130	140	-10	6	14
110	140	-30	6	15
130	170	-40	6	16
110	170	-60	6	17
110	130	-20	6	18

S Statistic = 6 - 18 = -12

Comparing at 95% confidence level (downward trend)

Probability of obtaining S >= 12 is 0.089

S > 0 or 0.089 > 0.05 indicating no evidence of a downward trend

Mann-Kendall Trend Analysis

Parameter: Lithium

Location: MW-16-02

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
28	45	-17	0	1
27	45	-18	0	2
21	45	-24	0	3
18	45	-27	0	4
14	45	-31	0	5
13	45	-32	0	6
14	45	-31	0	7
27	28	-1	0	8
21	28	-7	0	9
18	28	-10	0	10
14	28	-14	0	11
13	28	-15	0	12
14	28	-14	0	13
21	27	-6	0	14
18	27	-9	0	15
14	27	-13	0	16
13	27	-14	0	17
14	27	-13	0	18
18	21	-3	0	19
14	21	-7	0	20
13	21	-8	0	21
14	21	-7	0	22
14	18	-4	0	23
13	18	-5	0	24
14	18	-4	0	25
13	14	-1	0	26
14	14	0	0	26
14	13	1	1	26

S Statistic = 1 - 26 = -25

Comparing at 95% confidence level (downward trend)

Failed to calculate probability for S = -25

Table out of range

The negative value of S indicates a downward trend.

From the tabulated values for n=8 and S=-25, the observed trend has a significance level of 0.00055

0.00055 < 0.05

Indicating a downward trend

Skewness Coefficient

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

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

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	8	151.25	22.3207	-0.825283
MW-16-02	8	4.75	4.55004	**1.68814**
MW-16-03	8	2.5	0	**Div 0**

All Locations

Obs.	Mean	Std. Dev.	Skewness
24	52.8333	72.1962	0.907175

Skewness Coefficient

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

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

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	8	51.125	7.41499	-0.235751
MW-16-02	8	22.5	10.7836	**1.1531**
MW-16-03	8	6.35	4.25038	**1.35076**

All Locations

Obs.	Mean	Std. Dev.	Skewness
24	26.6583	20.3791	0.364692

Skewness Coefficient

Parameter: Lithium

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

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

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	8	3.92463	0.150495	-0.566904
MW-16-02	8	3.02658	0.432065	0.578394
MW-16-03	8	1.70075	0.536195	**1.19186**

All Locations

Obs.	Mean	Std. Dev.	Skewness
24	2.88399	1.0109	-0.378668

Confidence Interval

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Compliance Locations

Location	**MW-16-01**
Mean	151.25
Std Dev	22.3207
Degrees of Freedom	7
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[127.591, 174.909]	151.25	TRUE
95%	1.89458	[136.299, 166.201]	151.25	TRUE

Location	**MW-16-02**
Mean	4.75
Std Dev	4.55004
Degrees of Freedom	7
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[-0.0727463, 9.57275]	4.75	FALSE
95%	1.89458	[1.70223, 7.79777]	4.75	FALSE

Location	**MW-16-03**
Mean	2.5
Std Dev	0
Degrees of Freedom	7
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[2.5, 2.5]	2.5	FALSE
95%	1.89458	[2.5, 2.5]	2.5	FALSE

Confidence Interval

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Compliance Locations

Location	**MW-16-01**
Mean	51.125
Std Dev	7.41499
Degrees of Freedom	7
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[43.2656, 58.9844]	51.125	TRUE
95%	1.89458	[46.1582, 56.0918]	51.125	TRUE

Location	**MW-16-02**
Mean	22.5
Std Dev	10.7836
Degrees of Freedom	7
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[11.0701, 33.9299]	22.5	FALSE
95%	1.89458	[15.2768, 29.7232]	22.5	FALSE

Location	**MW-16-03**
Mean	6.35
Std Dev	4.25038
Degrees of Freedom	7
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[1.84488, 10.8551]	6.35	FALSE
95%	1.89458	[3.50295, 9.19705]	6.35	FALSE

Confidence Interval

Parameter: Lithium

Natural Logarithm Transformation

Non-Detects Replaced with 1/2 DL

Compliance Locations

Location	**MW-16-01**
Mean	3.92463
Std Dev	0.150495
Degrees of Freedom	7
Comparison Level	**3.68888**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[3.76511, 4.08414]	3.92463	**TRUE**
95%	1.89458	[3.82382, 4.02544]	3.92463	**TRUE**

Location	**MW-16-02**
Mean	3.02658
Std Dev	0.432065
Degrees of Freedom	7
Comparison Level	**3.68888**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[2.56862, 3.48454]	3.02658	FALSE
95%	1.89458	[2.73717, 3.31599]	3.02658	FALSE

Location	**MW-16-03**
Mean	1.70075
Std Dev	0.536195
Degrees of Freedom	7
Comparison Level	**3.68888**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[1.13242, 2.26909]	1.70075	FALSE
95%	1.89458	[1.34159, 2.05992]	1.70075	FALSE

Appendix D
Appendix IV Assessment Monitoring Statistical Evaluation – October 2021

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Technical Memorandum

Date:	January 31, 2022
To:	DTE Electric Company
From:	Sarah Holmstrom, TRC Kristin Lowery, TRC Henry Schnaidt, TRC
Project No.:	413591.0005.0000 Phase 001, Task 001
Subject:	Appendix IV Assessment Monitoring Statistical Evaluation for October 2021 Groundwater Monitoring Event – DTE Electric Company, River Rouge Power Plant, Bottom Ash Basin Coal Combustion Residual Unit

Introduction

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, applies to DTE Electric Company (DTE Electric) River Rouge Power Plant (RRPP) Coal Combustion Residual Bottom Ash Basin (BAB) CCR unit located in River Rouge, Michigan (the Site).

On October 15, 2018, it was determined that pursuant to §257.93 (h) that arsenic and lithium are present at statistically significant levels above their respective groundwater protection standards (GWPSs) at one or more down gradient well locations at the RRPP BAB CCR unit[1].

DTE Electric has completed an assessment of corrective measures per §257.95(g)(3), the RRPP ceased coal fired operations in May 2020, and the CCR closure by removal of the BAB was completed from June through September 2020 as documented in the *Bottom Ash Basin Closure Certification Report DTE Electric Company River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit, 1 Belanger Park Drive, River Rouge, Michigan* dated November 2020. Although CCR removal corrective measures have been implemented a final remedy has not yet been formally selected. DTE Electric has continued operating a groundwater extraction system as a presumptive remedy to maintain hydraulic control around the RRPP BAB to address the uncertainty around the potential migration of CCR constituents from the RRPP BAB to groundwater. This system has effectively captured groundwater in the vicinity of the RRPP BAB CCR unit since it began operation on March 2, 2018

[1] TRC. 2018. *Notification of Appendix IV Constituents at Statistically Significant Levels Above the Groundwater Protection Standards; River Rouge Power Plant Bottom Ash Basin Coal Combustion Residual Unit,* October.

and eliminates the potential for Appendix III and Appendix IV parameters to migrate from the RRPP BAB CCR unit.

In accordance with §257.96(b), DTE Electric is continuing assessment monitoring for the RRPP BAB CCR unit. The second semiannual assessment monitoring event of 2021 for the Appendix III and Appendix IV constituents was conducted on October 20, 2021. In accordance with §257.95, the assessment monitoring data must be evaluated to determine whether or not Appendix IV constituents are detected at statistically significant levels above the GWPSs. This memorandum presents the confidence limits derived for the Appendix IV parameters for the RRPP BAB CCR unit that will be used to compare to the established GWPSs.

Assessment Monitoring Statistical Evaluation

The three compliance wells utilized for the RRPP BAB CCR unit are MW-16-01, MW-16-02 and MW-16-03. Additionally, monitoring wells MW-16-04S, MW-17-05, MW-17-14, MW-17-15, MW-17-18, and MW-17-20 are used to evaluate the nature and extent of releases of CCR as well as any site conditions that may affect the remedy selected. Following the second semiannual assessment monitoring sampling event for 2021, compliance and nature and extent well data for the RRPP BAB were evaluated in accordance with the Groundwater Statistical Evaluation Plan (Stats Plan) (TRC, October 2017; Revised December 2017). For each detected constituent, the concentrations for each well were first compared directly to the GWPS within the dataset collected subsequent to the groundwater extraction system operation. Parameter-well combinations that included a direct exceedance of the GWPS were retained for further analysis. As a result, arsenic and lithium at MW-16-01, lithium at MW-17-14 (nature and extent), and arsenic and lithium at MW-17-15 (nature and extent) were retained for further evaluation.

Groundwater data were then evaluated utilizing 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), confidence limits were selected to perform the statistical comparison of compliance data to a fixed standard. Parametric and non-parametric confidence intervals were calculated for each of the CCR Appendix IV parameters using a 99 percent confidence level, i.e., a significance level (α) of 0.01. The following narrative describes the methods employed, the results obtained and the ChemStat™ output files are included as an attachment.

The ChemStat™ software was used to test compliance at the downgradient monitoring wells using the confidence interval method for the most recent eight sampling events. Eight independent sampling events provide the appropriate density of data as recommended per the UG yet are collected recently enough to provide an indication of current conditions under the hydraulic influence of the groundwater extraction system. For nature and extent wells, sampling has been completed annually following the identification of parameters present at statistically significant levels above their GWPS. Nature and extent sampling was initiated in 2018; therefore, four sampling events of data are available for evaluation.

The statistical data evaluation included the following steps:

- Review of data quality checklists for the assessment monitoring data sets for CCR Appendix IV constituents;
- Evaluation of percentage of non-detects for each downgradient well-constituent pair;
- Graphical representation of the assessment monitoring 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 visual trends apparent in the graphical representations for statistical significance;
- Distribution of the data; and
- Calculation of the confidence intervals for each cumulative dataset.

The results of these evaluations are presented and discussed below.

Data Quality

Data from the second semiannual monitoring event for 2021 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.

Percentage of Non-detects

The percentage of non-detect observations for constituents with one or more detection above a GWPS is included in Table 1. Non-detect data was handled in accordance with the Stats Plan for the purposes of calculating confidence intervals.

Time versus Concentration Graphs

The T v. C graphs did not show any potential outliers. The T v. C graphs showed potential trending for some Appendix IV well/constituent pairs. These were tested by the ChemStat™ software to assess whether the trends are statistically significant.

Outlier Testing

No potential outliers were observed on the T v. C graphs; therefore, no outlier testing was performed.

Trend Analysis

Visual trends apparent in the T v. C graphs were evaluated in ChemStat™ using the Mann-Kendall Trend Analysis to determine if a subset of data should be used in calculating the confidence interval. Trends were evaluated using a 95-percent (one-tailed) confidence level, i.e., a significance level (α) of 0.05. No statistically significant trends were identified.

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 1.

Confidence Intervals

Variability is recognized in the data set due to changing groundwater quality in response to the operation of the groundwater extraction system. Calculating a confidence interval around a trending data set incorporates not only variability present naturally in the underlying dataset but can exaggerate variability. Data collected since the initiation of operation of the groundwater extraction system in March 2018 has been generally stable and do not exhibit statistically significant trends.

Table 1 presents the calculated confidence intervals for each well-constituent pair. For normal and lognormal distributions, confidence intervals are calculated for 99 percent confidence using parametric methods. For non-normal datasets, a nonparametric confidence interval is utilized, resulting in the highest and lowest values from the contributing dataset as the confidence limits.

The confidence intervals calculated through the above-described process will be compared to the GWPS to determine if an exceedance has occurred. An exceedance of the standard occurs when the 99 percent lower confidence level of the downgradient data exceeds the GWPS.

Attachments

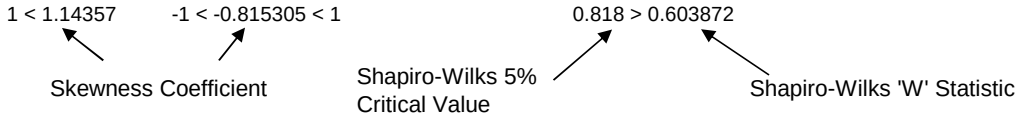
Table 1 – Summary of Descriptive Statistics and Confidence Interval Calculations
Attachment A – ChemStat™ Outputs

Table 1
Summary of Descriptive Statistics and Confidence Interval Calculations

Table 1
Summary of Descriptive Statistics and Confidence Interval Calculations
Assessment Monitoring Statistical Evaluation - October 2021
DTE Electric Company – River Rouge Power Plant

Parameter[1]	Percent Non-Detect	Outliers?	Trend?	Skewness		Shapiro-Wilks Test (5% Critical Value)		Parametric / Non-Parametric	Confidence Interval[2]
				Un-Transformed	Natural Log	Un-Transformed	Natural Log		
MW-16-01									
Arsenic	0%	No	No	-1 < -0.201256 < 1	--	--	--	Parametric	[130, 190]
Lithium	0%	No	Yes	-1 < -0.337729 < 1	--	--	--	Parametric	[39, 59]
MW-17-14[3]									
Lithium	25%	No	No	-1 < 0.204939 < 1	--	--	--	Parametric	[-18, 66]
MW-17-15[3]									
Arsenic	0%	No	No	-1 < 0.883139 < 1	--	--	--	Parametric	[7.5, 40]
Lithium	0%	No	No	-1 < 0.711258 < 1	--	--	--	Parametric	[-0.86, 96]

Notes:



(1) Well-parameter combinations that have one or more direct exceedances of the Groundwater Protection Standard within the most recent eight sampling events.
(2) The most recent eight data points are used to calculate the confidence interval to be representative of current conditions.
(3) The most recent four data points are used to screen for direct exceedances of the Groundwater Protection Standards and for calculation of the confidence intervals.

Attachment A
ChemStat™ Confidence Interval Outputs

Concentrations (ug/L)

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 51
Total Non-Detect: 15
Percent Non-Detects: 29.4118%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original
There are 3 compliance locations					
Loc.	**Meas.**	**ND**	**Date**	**Conc.**	**Original**
MW-16-01	17	0 (0%)	8/5/2016	37	37
			9/30/2016	37	37
			11/18/2016	39	39
			1/20/2017	40	40
			3/10/2017	38	38
			4/28/2017	37	37
			6/16/2017	35	35
			7/21/2017	36	36
			4/6/2018	160	160
			5/30/2018	170	170
			10/16/2018	160	160
			3/29/2019	170	170
			9/26/2019	140	140
			3/20/2020	170	170
			11/11/2020	130	130
			2/25/2021	110	110
			10/20/2021	200	200
MW-16-02	17	6 (35.2941%)	8/5/2016	24	24
			9/30/2016	27	27
			11/18/2016	30	30
			1/20/2017	31	31
			3/10/2017	29	29
			4/28/2017	30	30
			6/16/2017	30	30
			7/21/2017	27	27
			4/6/2018	15	15
			5/30/2018	ND<5 U	ND<5 U
			10/16/2018	7.9	7.9
			3/29/2019	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			3/20/2020	ND<5 U	ND<5 U
			11/11/2020	ND<5 U	ND<5 U
			2/25/2021	2.6	2.6
			10/20/2021	ND<5 U	ND<5 U
MW-16-03	17	9 (52.9412%)	8/5/2016	91	91
			9/30/2016	40	40
			11/18/2016	21	21
			1/20/2017	13	13
			3/10/2017	12	12

	4/28/2017	12	12
	6/16/2017	12	12
	7/21/2017	12	12
	4/6/2018	ND<5 U	ND<5 U
	5/30/2018	ND<5 U	ND<5 U
	10/16/2018	ND<5 U	ND<5 U
	3/29/2019	ND<5 U	ND<5 U
	9/26/2019	ND<5 U	ND<5 U
	3/20/2020	ND<5 U	ND<5 U
	11/11/2020	ND<5 U	ND<5 U
	2/25/2021	ND<5	ND<5
	10/20/2021	ND<5 U	ND<5 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ug/L)

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 51
Total Non-Detect: 6
Percent Non-Detects: 11.7647%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

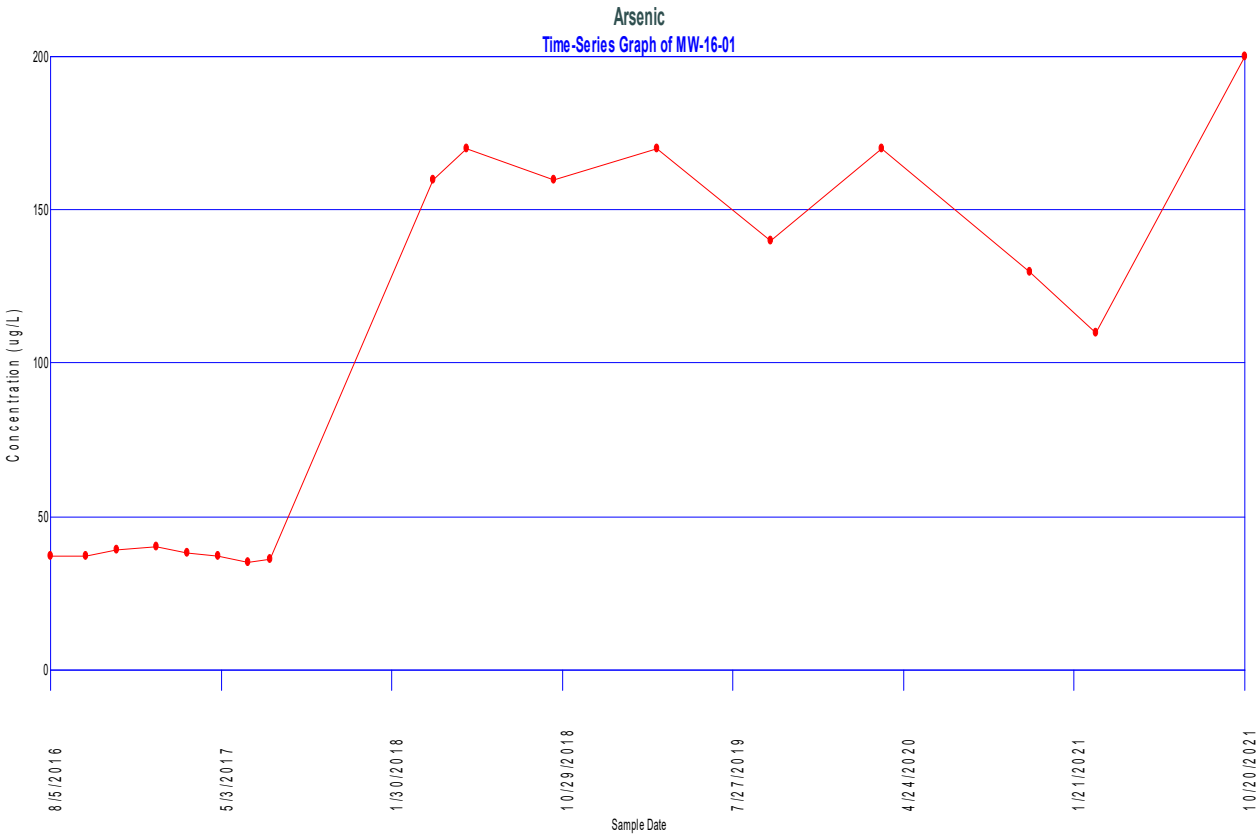
There are 3 compliance locations

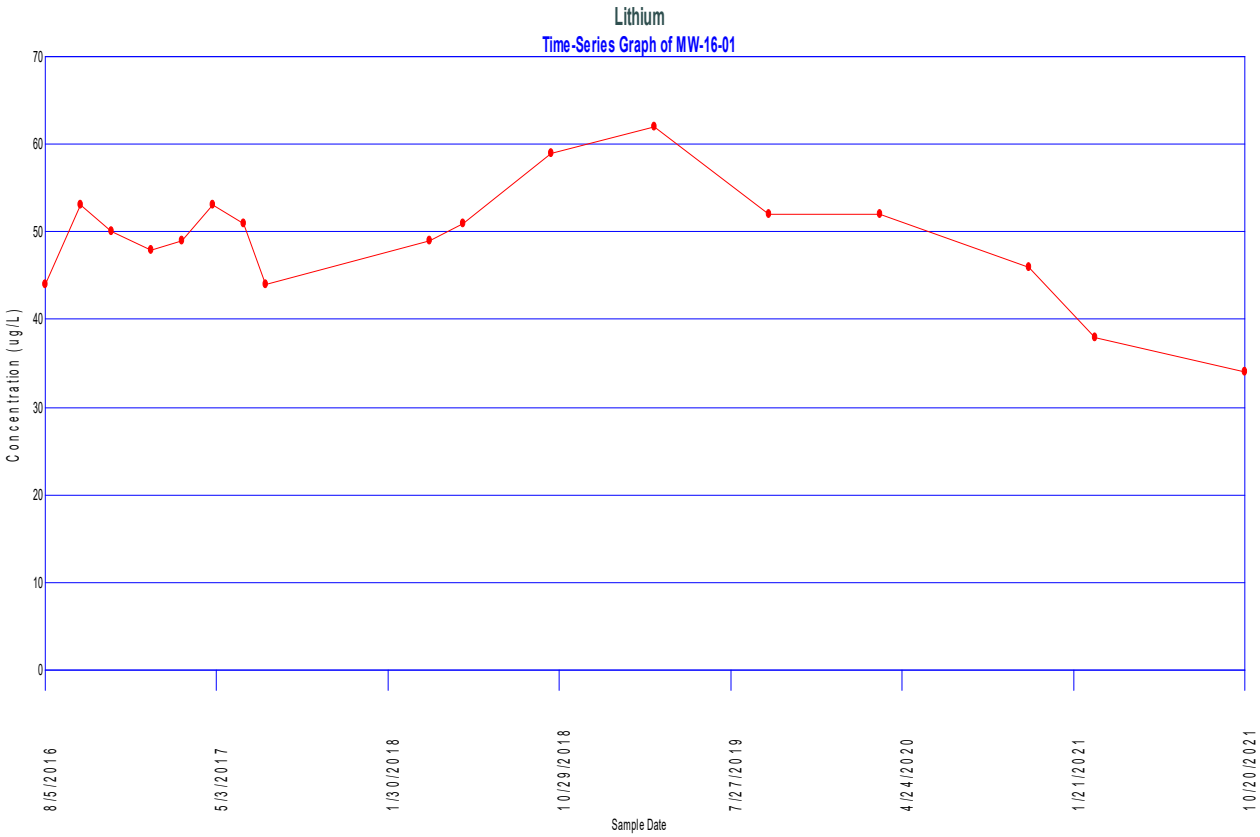
Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	17	0 (0%)	8/5/2016	44	44
			9/30/2016	53	53
			11/18/2016	50	50
			1/20/2017	48	48
			3/10/2017	49	49
			4/28/2017	53	53
			6/16/2017	51	51
			7/21/2017	44	44
			4/6/2018	49	49
			5/30/2018	51	51
			10/16/2018	59	59
			3/29/2019	62	62
			9/26/2019	52	52
			3/20/2020	52	52
			11/11/2020	46	46
			2/25/2021	38	38
			10/20/2021	34	34
MW-16-02	17	0 (0%)	8/5/2016	57	57
			9/30/2016	64	64
			11/18/2016	62	62
			1/20/2017	64	64
			3/10/2017	58	58
			4/28/2017	71	71
			6/16/2017	64	64
			7/21/2017	52	52
			4/6/2018	45	45
			5/30/2018	28	28
			10/16/2018	27	27
			3/29/2019	21	21
			9/26/2019	18	18
			3/20/2020	14	14
			11/11/2020	13	13
			2/25/2021	14	14
			10/20/2021	14	14
MW-16-03	17	6 (35.2941%)	8/5/2016	29	29
			9/30/2016	44	44
			11/18/2016	44	44
			1/20/2017	49	49
			3/10/2017	45	45

4/28/2017	51	51
6/16/2017	49	49
7/21/2017	41	41
4/6/2018	15	15
5/30/2018	11	11
10/16/2018	ND<8 U	ND<8 U
3/29/2019	ND<8 U	ND<8 U
9/26/2019	ND<8 U	ND<8 U
3/20/2020	ND<8 U	ND<8 U
11/11/2020	ND<8 U	ND<8 U
2/25/2021	4.8	4.8
10/20/2021	ND<8 U	ND<8 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original


Arsenic
Time-Series Graph of MW-16-01
200
150
100
50
0
Concentration (ug/L)
8/5/2016
5/3/2017
1/30/2018
10/29/2018
7/27/2019
4/24/2020
1/21/2021
10/20/2021
Sample Date


Lithium
Time-Series Graph of MW-16-01
Concentration (ug/L)
70
60
50
40
30
20
10
0
8/5/2016
5/3/2017
1/30/2018
10/29/2018
7/27/2019
4/24/2020
1/21/2021
10/20/2021
Sample Date

Concentrations (ug/L)

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 24
Total Non-Detect: 14
Percent Non-Detects: 58.3333%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There are 3 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	8	0 (0%)	5/30/2018	170	170
			10/16/2018	160	160
			3/29/2019	170	170
			9/26/2019	140	140
			3/20/2020	170	170
			11/11/2020	130	130
			2/25/2021	110	110
			10/20/2021	200	200
			8/5/2016	**37**	**37**
			9/30/2016	**37**	**37**
			11/18/2016	**39**	**39**
			1/20/2017	**40**	**40**
			3/10/2017	**38**	**38**
			4/28/2017	**37**	**37**
			6/16/2017	**35**	**35**
			7/21/2017	**36**	**36**
			4/6/2018	**160**	**160**
MW-16-02	8	6 (75%)	5/30/2018	ND<5 U	ND<5 U
			10/16/2018	7.9	7.9
			3/29/2019	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			3/20/2020	ND<5 U	ND<5 U
			11/11/2020	ND<5 U	ND<5 U
			2/25/2021	2.6	2.6
			10/20/2021	ND<5 U	ND<5 U
			8/5/2016	**24**	**24**
			9/30/2016	**27**	**27**
			11/18/2016	**30**	**30**
			1/20/2017	**31**	**31**
			3/10/2017	**29**	**29**
			4/28/2017	**30**	**30**
			6/16/2017	**30**	**30**
			7/21/2017	**27**	**27**
			4/6/2018	**15**	**15**
MW-16-03	8	8 (100%)	5/30/2018	ND<5 U	ND<5 U
			10/16/2018	ND<5 U	ND<5 U
			3/29/2019	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			3/20/2020	ND<5 U	ND<5 U

11/11/2020	ND<5 U	ND<5 U
2/25/2021	ND<5	ND<5
10/20/2021	ND<5 U	ND<5 U
8/5/2016	**91**	**91**
9/30/2016	**40**	**40**
11/18/2016	**21**	**21**
1/20/2017	**13**	**13**
3/10/2017	**12**	**12**
4/28/2017	**12**	**12**
6/16/2017	**12**	**12**
7/21/2017	**12**	**12**
4/6/2018	**ND<5 U**	**ND<5 U**

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ug/L)

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 24
Total Non-Detect: 6
Percent Non-Detects: 25%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

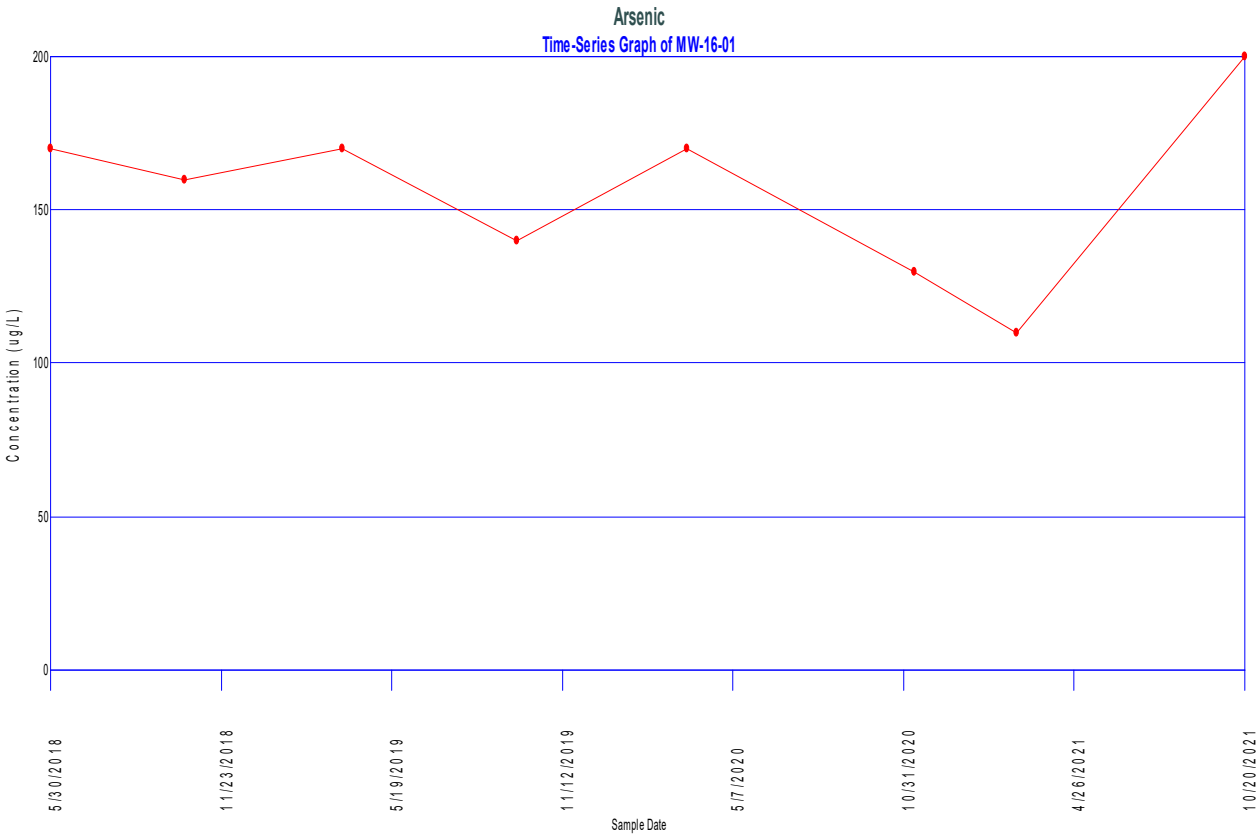
There are 3 compliance locations

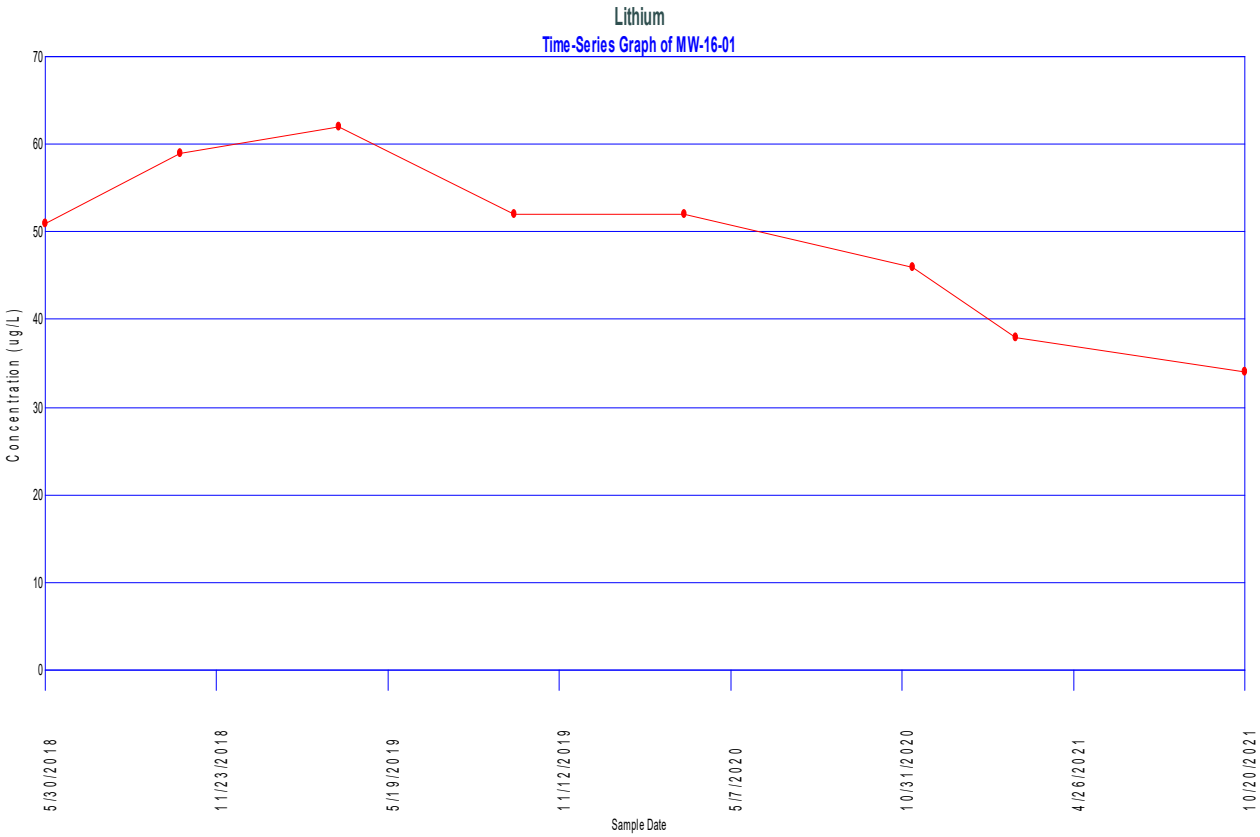
Loc.	Meas.	ND	Date	Conc.	Original
MW-16-01	8	0 (0%)	5/30/2018	51	51
			10/16/2018	59	59
			3/29/2019	62	62
			9/26/2019	52	52
			3/20/2020	52	52
			11/11/2020	46	46
			2/25/2021	38	38
			10/20/2021	34	34
			8/5/2016	**44**	**44**
			9/30/2016	**53**	**53**
			11/18/2016	**50**	**50**
			1/20/2017	**48**	**48**
			3/10/2017	**49**	**49**
			4/28/2017	**53**	**53**
			6/16/2017	**51**	**51**
			7/21/2017	**44**	**44**
			4/6/2018	**49**	**49**
MW-16-02	8	0 (0%)	5/30/2018	28	28
			10/16/2018	27	27
			3/29/2019	21	21
			9/26/2019	18	18
			3/20/2020	14	14
			11/11/2020	13	13
			2/25/2021	14	14
			10/20/2021	14	14
			8/5/2016	**57**	**57**
			9/30/2016	**64**	**64**
			11/18/2016	**62**	**62**
			1/20/2017	**64**	**64**
			3/10/2017	**58**	**58**
			4/28/2017	**71**	**71**
			6/16/2017	**64**	**64**
			7/21/2017	**52**	**52**
			4/6/2018	**45**	**45**
MW-16-03	8	6 (75%)	5/30/2018	11	11
			10/16/2018	ND<8 U	ND<8 U
			3/29/2019	ND<8 U	ND<8 U
			9/26/2019	ND<8 U	ND<8 U
			3/20/2020	ND<8 U	ND<8 U

11/11/2020	ND<8 U	ND<8 U
2/25/2021	4.8	4.8
10/20/2021	ND<8 U	ND<8 U
8/5/2016	**29**	**29**
9/30/2016	**44**	**44**
11/18/2016	**44**	**44**
1/20/2017	**49**	**49**
3/10/2017	**45**	**45**
4/28/2017	**51**	**51**
6/16/2017	**49**	**49**
7/21/2017	**41**	**41**
4/6/2018	**15**	**15**

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original


Arsenic
Time-Series Graph of MW-16-01
200
150
100
50
0
Concentration (ug/L)
5/30/2018
11/23/2018
5/19/2019
11/12/2019
5/7/2020
10/31/2020
4/26/2021
10/20/2021
Sample Date


Lithium
Time-Series Graph of MW-16-01
Concentration (ug/L)
70
60
50
40
30
20
10
0
5/30/2018
11/23/2018
5/19/2019
11/12/2019
5/7/2020
10/31/2020
4/26/2021
10/20/2021
Sample Date

Mann-Kendall Trend Analysis

Parameter: Arsenic
Location: MW-16-01
Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
160	170	-10	0	1
170	170	0	0	1
140	170	-30	0	2
170	170	0	0	2
130	170	-40	0	3
110	170	-60	0	4
200	170	30	1	4
170	160	10	2	4
140	160	-20	2	5
170	160	10	3	5
130	160	-30	3	6
110	160	-50	3	7
200	160	40	4	7
140	170	-30	4	8
170	170	0	4	8
130	170	-40	4	9
110	170	-60	4	10
200	170	30	5	10
170	140	30	6	10
130	140	-10	6	11
110	140	-30	6	12
200	140	60	7	12
130	170	-40	7	13
110	170	-60	7	14
200	170	30	8	14
110	130	-20	8	15
200	130	70	9	15
200	110	90	10	15

S Statistic = 10 - 15 = -5
Comparing at 95% confidence level (downward trend)
Failed to calculate probability for S = -5
Table out of range

The negative value of S indicates a downward trend.
From the tabulated values for n=8 and S=-5, the observed trend has a significance level of 0.317
0.317 > 0.05
Indicating no significant trend

Mann-Kendall Trend Analysis

Parameter: Lithium
Location: MW-16-01
Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

95% Confidence Level

Xj	Xk	Xj - Xk	Positives	Negatives
59	51	8	1	0
62	51	11	2	0
52	51	1	3	0
52	51	1	4	0
46	51	-5	4	1
38	51	-13	4	2
34	51	-17	4	3
62	59	3	5	3
52	59	-7	5	4
52	59	-7	5	5
46	59	-13	5	6
38	59	-21	5	7
34	59	-25	5	8
52	62	-10	5	9
52	62	-10	5	10
46	62	-16	5	11
38	62	-24	5	12
34	62	-28	5	13
52	52	0	5	13
46	52	-6	5	14
38	52	-14	5	15
34	52	-18	5	16
46	52	-6	5	17
38	52	-14	5	18
34	52	-18	5	19
38	46	-8	5	20
34	46	-12	5	21
34	38	-4	5	22

S Statistic = 5 - 22 = -17
Comparing at 95% confidence level (downward trend)
Failed to calculate probability for S = -17
Table out of range
The negative value of S indicates a downward trend.
From the tabulated values for n=8 and S=-17, the observed trend has a significance level of 0.0235
0.0235 < 0.05
Indicating a downward trend

Skewness Coefficient

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

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

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	8	156.25	28.2527	-0.201256
MW-16-02	8	3.1875	1.90446	**2.26627**
MW-16-03	8	2.5	0	**Div 0**

All Locations

Obs.	Mean	Std. Dev.	Skewness
24	53.9792	75.506	0.948171

Skewness Coefficient

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

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

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-16-01	8	49.25	9.60283	-0.337729
MW-16-02	8	18.625	6.09303	0.641242
MW-16-03	8	4.975	2.45051	**2.21209**

All Locations

Obs.	Mean	Std. Dev.	Skewness
24	24.2833	19.9703	0.592057

Confidence Interval

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Compliance Locations

Location	**MW-16-01**
Mean	156.25
Std Dev	28.2527
Degrees of Freedom	7
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[126.304, 186.196]	156.25	TRUE
95%	1.89458	[137.325, 175.175]	156.25	TRUE

Location	**MW-16-02**
Mean	3.1875
Std Dev	1.90446
Degrees of Freedom	7
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[1.1689, 5.2061]	3.1875	FALSE
95%	1.89458	[1.91183, 4.46317]	3.1875	FALSE

Location	**MW-16-03**
Mean	2.5
Std Dev	0
Degrees of Freedom	7
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[2.5, 2.5]	2.5	FALSE
95%	1.89458	[2.5, 2.5]	2.5	FALSE

Confidence Interval

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Compliance Locations

Location	**MW-16-01**
Mean	49.25
Std Dev	9.60283
Degrees of Freedom	7
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[39.0716, 59.4284]	49.25	FALSE
95%	1.89458	[42.8177, 55.6823]	49.25	**TRUE**

Location	**MW-16-02**
Mean	18.625
Std Dev	6.09303
Degrees of Freedom	7
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[12.1668, 25.0832]	18.625	FALSE
95%	1.89458	[14.5437, 22.7063]	18.625	FALSE

Location	**MW-16-03**
Mean	4.975
Std Dev	2.45051
Degrees of Freedom	7
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	2.99795	[2.37762, 7.57238]	4.975	FALSE
95%	1.89458	[3.33356, 6.61644]	4.975	FALSE

Concentrations (ug/L)

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 41
Total Non-Detect: 36
Percent Non-Detects: 87.8049%
Total Background Measurements: 0
There are 0 background locations

Loc.	Meas.	ND	Date	Conc.	Original

There are 10 compliance locations

Loc.	Meas.	ND	Date	Conc.	Original
MW-16-04S	14	14 (100%)	8/5/2016	ND<5 U	ND<5 U
			9/30/2016	ND<5 U	ND<5 U
			11/18/2016	ND<5 U	ND<5 U
			1/20/2017	ND<5 U	ND<5 U
			3/10/2017	ND<5 U	ND<5 U
			4/28/2017	ND<5 U	ND<5 U
			6/16/2017	ND<5 U	ND<5 U
			7/21/2017	ND<5 U	ND<5 U
			4/6/2018	ND<5 U	ND<5 U
			5/30/2018	ND<5 U	ND<5 U
			10/16/2018	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			11/12/2020	ND<5 U	ND<5 U
			10/21/2021	ND<5 U	ND<5 U
MW-17-05	4	4 (100%)	10/15/2018	ND<5 U	ND<5 U
			9/27/2019	ND<5 U	ND<5 U
			11/13/2020	ND<5 U	ND<5 U
			10/21/2021	ND<5 U	ND<5 U
MW-17-08	1	1 (100%)	10/21/2021	ND<5 U	ND<5 U
MW-17-12	2	1 (50%)	9/27/2019	8.4	8.4
			10/21/2021	ND<5 U	ND<5 U
MW-17-13	3	3 (100%)	10/16/2018	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			10/21/2021	ND<5 U	ND<5 U
MW-17-14	4	4 (100%)	10/16/2018	ND<5 U	ND<5 U
			9/27/2019	ND<5 U	ND<5 U
			11/12/2020	ND<5 U	ND<5 U
			10/21/2021	ND<5 U	ND<5 U
MW-17-15	4	0 (0%)	10/16/2018	34	34
			9/26/2019	20	20
			11/12/2020	18	18
			10/21/2021	23	23
MW-17-18	4	4 (100%)	10/15/2018	ND<5 U	ND<5 U
			9/27/2019	ND<5 U	ND<5 U
			11/11/2020	ND<5 U	ND<5 U
			10/21/2021	ND<5 U	ND<5 U
MW-17-19	1	1 (100%)	10/21/2021	ND<5 U	ND<5 U
MW-17-20	4	4 (100%)	10/16/2018	ND<5 U	ND<5 U
			9/26/2019	ND<5 U	ND<5 U
			11/12/2020	ND<5 U	ND<5 U
			10/20/2021	ND<5 U	ND<5 U

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original

Concentrations (ug/L)

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with Detection Limit

Total Measurements: 41
Total Non-Detect: 4
Percent Non-Detects: 9.7561%
Total Background Measurements: 0
There are 0 background locations

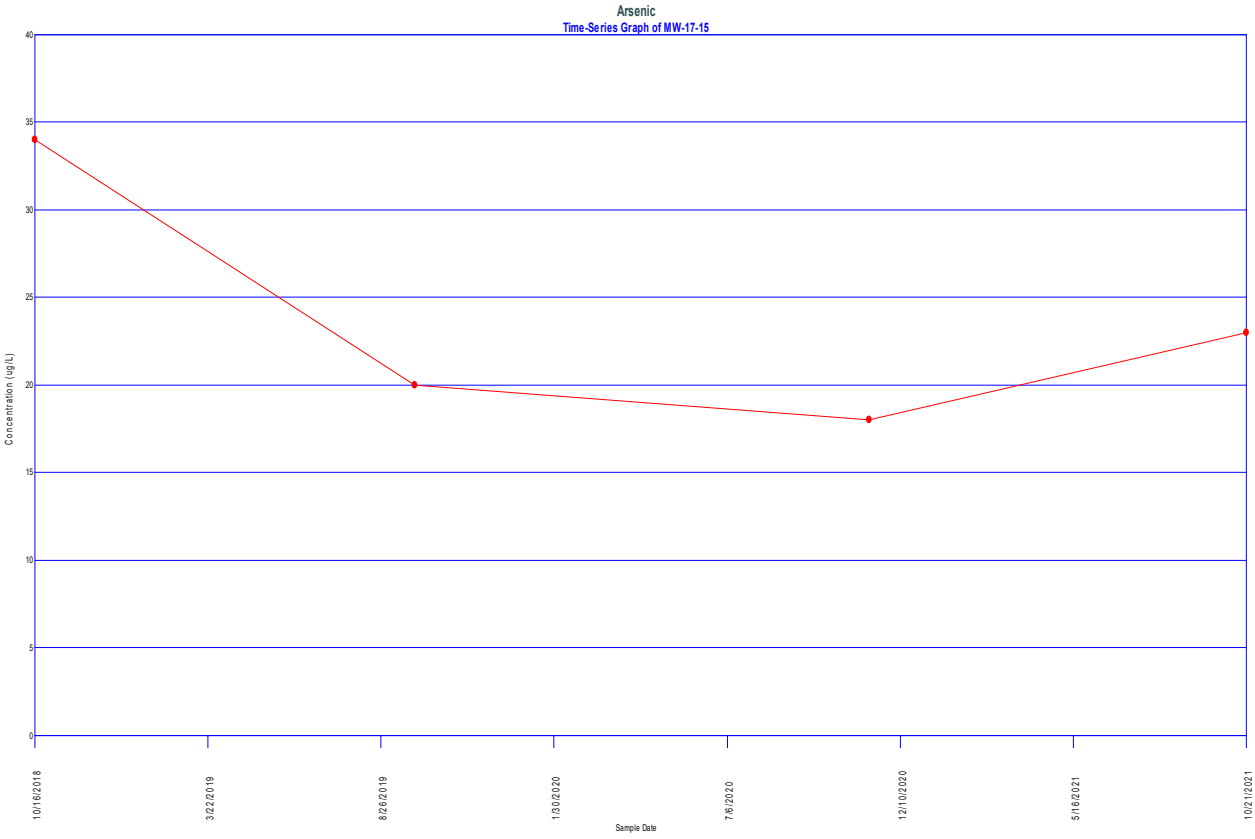
Loc.	Meas.	ND	Date	Conc.	Original

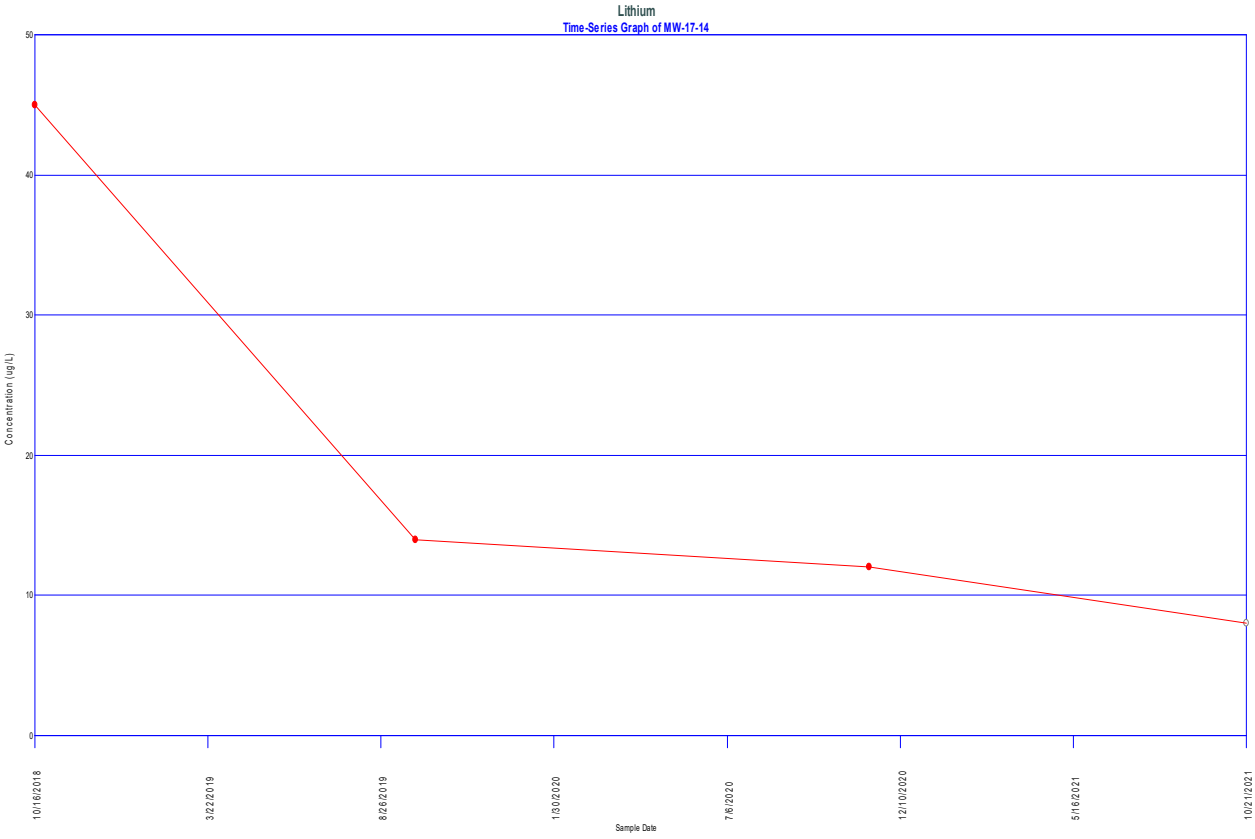
There are 10 compliance locations

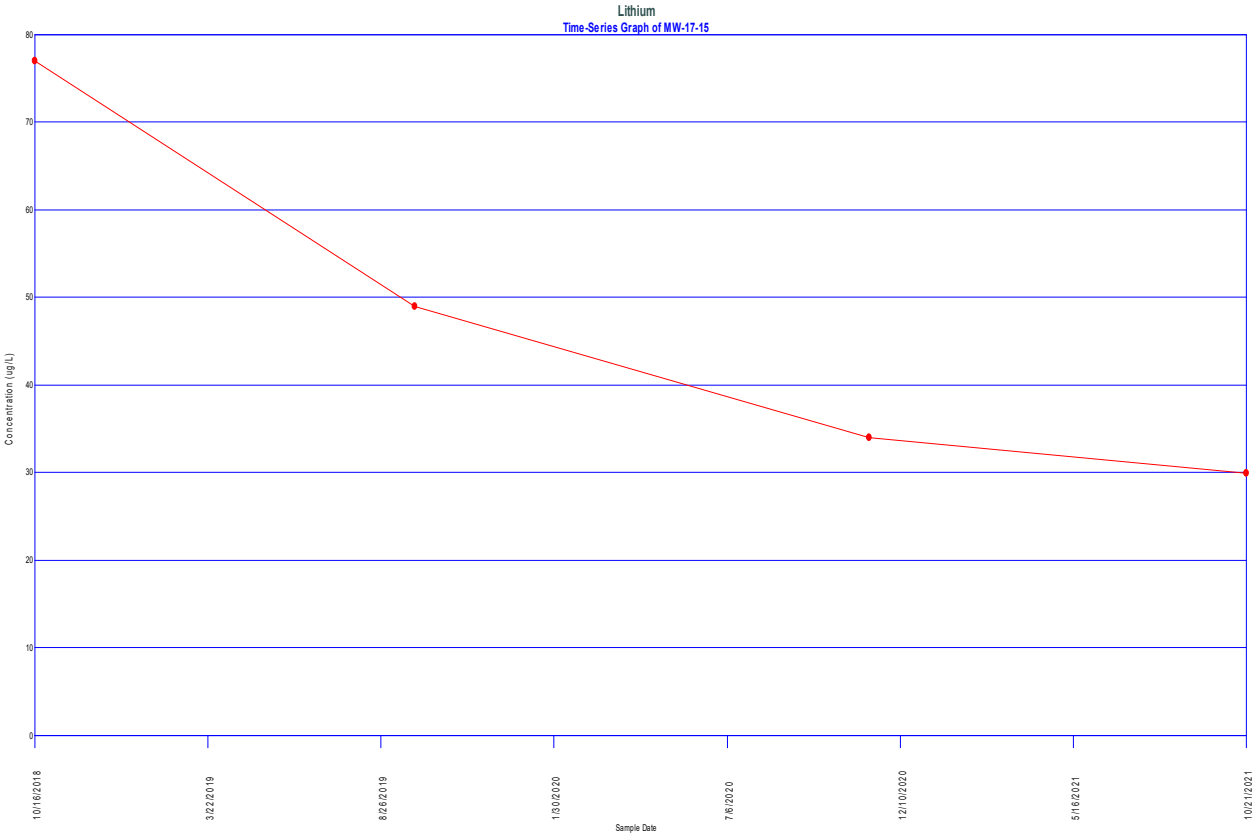
Loc.	Meas.	ND	Date	Conc.	Original
MW-16-04S	14	0 (0%)	8/5/2016	18	18
			9/30/2016	21	21
			11/18/2016	18	18
			1/20/2017	25	25
			3/10/2017	24	24
			4/28/2017	26	26
			6/16/2017	26	26
			7/21/2017	17	17
			4/6/2018	27	27
			5/30/2018	26	26
			10/16/2018	24	24
			9/26/2019	19	19
			11/12/2020	21	21
			10/21/2021	36	36
MW-17-05	4	0 (0%)	10/15/2018	13	13
			9/27/2019	9.2	9.2
			11/13/2020	14	14
			10/21/2021	11	11
MW-17-08	1	0 (0%)	10/21/2021	12	12
MW-17-12	2	0 (0%)	9/27/2019	12	12
			10/21/2021	13	13
MW-17-13	3	3 (100%)	10/16/2018	ND<8 U	ND<8 U
			9/26/2019	ND<8 U	ND<8 U
			10/21/2021	ND<8 U	ND<8 U
MW-17-14	4	1 (25%)	10/16/2018	45	45
			9/27/2019	14	14
			11/12/2020	12	12
			10/21/2021	ND<8 U	ND<8 U
MW-17-15	4	0 (0%)	10/16/2018	77	77
			9/26/2019	49	49
			11/12/2020	34	34
			10/21/2021	30	30
MW-17-18	4	0 (0%)	10/15/2018	22	22
			9/27/2019	17	17
			11/11/2020	20	20
			10/21/2021	20	20
MW-17-19	1	0 (0%)	10/21/2021	46	46
MW-17-20	4	0 (0%)	10/16/2018	32	32
			9/26/2019	25	25
			11/12/2020	34	34
			10/20/2021	29	29

There are 0 unused locations

Loc.	Meas.	ND	Date	Conc.	Original


Arsenic
Time-Series Graph of MW-17-15
Concentration (ug/L)
40
35
30
25
20
15
10
5
0
10/16/2018
3/22/2019
8/26/2019
1/30/2020
7/6/2020
12/10/2020
5/18/2021
10/21/2021
Sample Date


Lithium
Time-Series Graph of MW-17-14
Concentration (ug/L)
50
40
30
20
10
0
10/16/2018
3/22/2019
8/26/2019
1/30/2020
7/6/2020
12/10/2020
5/18/2021
10/21/2021
Sample Date


Lithium
Time-Series Graph of MW-17-15
Concentration (ug/L)
80
70
60
50
40
30
20
10
0
10/16/2018
3/22/2019
8/26/2019
1/30/2020
7/6/2020
12/10/2020
5/18/2021
10/21/2021
Sample Date

Skewness Coefficient

Parameter: Arsenic

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-17-14	4	2.5	0	Div 0
MW-17-15	4	23.75	7.13559	0.883139

All Locations

Obs.	Mean	Std. Dev.	Skewness
8	13.125	12.2817	0.865628

Skewness Coefficient

Parameter: Lithium

Original Data (Not Transformed)

Cohen's Adjustment

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

Compliance Locations

Location	Obs.	Mean	Std. Dev.	Skewness
MW-17-14	4	23.6667	18.5023	0.204939
MW-17-15	4	46.9467	21.9077	0.736366

All Locations

Obs.	Mean	Std. Dev.	Skewness
8	31.8709	25.7258	0.64627

Skewness Coefficient

Parameter: Lithium

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-17-14	4	18.75	18.0254	0.950566
MW-17-15	4	47.5	21.2995	0.711258

All Locations

Obs.	Mean	Std. Dev.	Skewness
8	33.125	23.8713	0.549874

Confidence Interval

Parameter: Arsenic

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Compliance Locations

Location	**MW-17-14**
Mean	2.5
Std Dev	0
Degrees of Freedom	3
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	**t-Stat**	**Interval**	**Mid-Point**	**Significant**
99%	4.54071	[2.5, 2.5]	2.5	FALSE
95%	2.35336	[2.5, 2.5]	2.5	FALSE

Location	**MW-17-15**
Mean	23.75
Std Dev	7.13559
Degrees of Freedom	3
Comparison Level	**32**
Untransformed Comp. Level	32

Confidence	**t-Stat**	**Interval**	**Mid-Point**	**Significant**
99%	4.54071	[7.54969, 39.9503]	23.75	FALSE
95%	2.35336	[15.3537, 32.1463]	23.75	FALSE

Confidence Interval

Parameter: Lithium

Original Data (Not Transformed)

Cohen's Adjustment

Compliance Locations

Location	**MW-17-14**
Mean	23.6667
Std Dev	18.5023
Degrees of Freedom	3
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	4.54071	[-18.34, 65.6733]	23.6667	FALSE
95%	2.35336	[1.89541, 45.4379]	23.6667	FALSE

Location	**MW-17-15**
Mean	46.9467
Std Dev	21.9077
Degrees of Freedom	3
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	t-Stat	Interval	Mid-Point	Significant
99%	4.54071	[-2.79161, 96.685]	46.9467	FALSE
95%	2.35336	[21.1683, 72.7251]	46.9467	FALSE

Confidence Interval

Parameter: Lithium

Original Data (Not Transformed)

Non-Detects Replaced with 1/2 DL

Compliance Locations

Location	**MW-17-14**
Mean	18.75
Std Dev	18.0254
Degrees of Freedom	3
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	**t-Stat**	**Interval**	**Mid-Point**	**Significant**
99%	4.54071	[-22.1741, 59.6741]	18.75	FALSE
95%	2.35336	[-2.46021, 39.9602]	18.75	FALSE

Location	**MW-17-15**
Mean	47.5
Std Dev	21.2995
Degrees of Freedom	3
Comparison Level	**40**
Untransformed Comp. Level	40

Confidence	**t-Stat**	**Interval**	**Mid-Point**	**Significant**
99%	4.54071	[-0.857285, 95.8573]	47.5	FALSE
95%	2.35336	[22.4373, 72.5627]	47.5	FALSE