



Annual Groundwater Monitoring and Corrective Action Report for the Neal South CCR Monofill

**Permit 97-SDP-13-98C
Neal South Energy Center
Salix, Iowa**

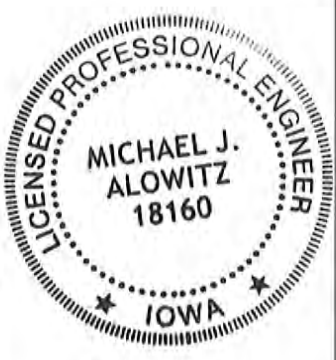


MidAmerican Energy Company

January 31, 2025

Certification

Annual Groundwater Monitoring and Corrective Action Report for the Neal South CCR Monofill
Permit 97-SDP-13-98C
Neal South Energy Center
Salix, Iowa
MidAmerican Energy Company

I certify this Annual Groundwater Monitoring and Corrective Action Report meets the requirements of 40 CFR §257.90(e).

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.	
	 Michael J. Alowitz, P.E.	 Date
	License Number:	18160
	My license renewal date is:	December 31, 2026
	Pages or sheets covered by this seal:	Entire Document

Executive summary

In compliance with 40 CFR §257.90(e)(6), this executive summary provides an overview of the current status of groundwater monitoring and corrective action programs for Neal South Energy Center coal combustion residual (CCR) Monofill located near Salix, Iowa.

Item	Current Status
(e)(6)(i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	At the start of the current annual reporting period, this CCR unit was operating under the assessment monitoring program (40 CFR §257.95).
(e)(6)(ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	At the end of the current annual reporting period, this CCR unit was operating under the assessment monitoring program (40 CFR §257.95).
(e)(6)(iii) If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to §257.94(e):	
(A) Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase; and	<p>During the calendar year 2024 annual reporting period, verified statistically significant increases over background were detected for the following Appendix III constituents:</p> <ul style="list-style-type: none"> – Boron at MW-2, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-19, and MW-20 – Chloride at MW-4, MW-12, MW-19, and MW-20 – Sulfate at MW-12 and MW-13 – TDS at MW-13
(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	The assessment monitoring program for this CCR unit was initiated in April 2018.
(e)(6)(iv) If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in appendix IV to this part pursuant to §257.95(g) include all of the following:	

Item	Current Status
(A) Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase;	<p>During this reporting period, the following Appendix IV constituents were detected at a verified statistically significant level above the groundwater protection standards in the assessment network:</p> <ul style="list-style-type: none"> – Arsenic at MW-10 – Selenium at MW-8 <p>Arsenic was detected above the groundwater protection standard at Performance Monitoring Evaluation (PME) monitoring wells MW-30, MW-43, and MW-49.</p>
(B) Provide the date when the assessment of corrective measures was initiated for the CCR unit;	<p>Assessment of corrective measures associated with MW-2 and MW-10 was initiated on January 28, 2019. The corrective measures assessment associated with MW-8 has not been initiated but the characterization of the nature and extent of the release has been initiated.</p>
(C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and	<p>A public meeting was held for the assessment of corrective measures for arsenic at MW-2 and MW-10 for this CCR unit on June 25, 2019, and will be scheduled for the assessment of corrective measures for selenium at MW-8 once an assessment has been prepared.</p>
(D) Provide the date when the assessment of corrective measures was completed for the CCR unit.	<p>The assessment of corrective measures for arsenic at MW-2 and MW-10 was completed on May 28, 2019. The assessment of corrective measures for selenium at MW-8 will be prepared after the characterization of the nature and extent of the release is completed.</p>
(e)(6)(v) Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of remedy selection; and	<p>The remedy selection for arsenic at MW-2 and MW-10 was selected pursuant to 40 CFR §257.97 on October 1, 2019. The remedy selection for selenium at MW-8 will be made after the assessment of corrective measures is finalized.</p>
(e)(6)(vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.	<p>The remedial activities for arsenic at MW-2 and MW-10 were initiated in August 2020 with the in situ injection of calcium polysulfide into groundwater. The remedial activities are ongoing. The remedial activities for selenium at MW-8 are pending.</p>

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1. Introduction

This Annual Groundwater Monitoring and Corrective Action Report (AGWMCAR) was prepared by GHD on behalf of MidAmerican Energy Company (MidAmerican) in compliance with the Federal Coal Combustion Residual (CCR) rule (40 Code of Federal Regulations [CFR] Part 257) for the Neal South Energy Center (Neal South) CCR Monofill (Neal South Monofill) located near Salix, Iowa. The Neal South Monofill is located in Section 24, Township 86N, Range 47W in Woodbury County, Iowa. The Site Location Map (Figure 1.1) also shows the location of MidAmerican's Neal North Energy Center facility. The Neal South Monofill extent and monitoring well locations are shown on Figure 1.2.

MidAmerican initiated baseline groundwater monitoring in accordance with the Federal CCR rule in December 2015. The initial eight rounds of baseline monitoring sampling and analysis were completed prior to the October 17, 2017 deadline established in the Federal CCR rule (40 CFR §257.94). Data for the eight required baseline monitoring events and the first detection monitoring event were presented in the first annual report, dated January 31, 2018 (GHD, 2018a). One limited verification sampling event was conducted on January 30, 2018. Based on the results of the January 2018 sampling, statistically significant increases (SSIs) were verified in groundwater; therefore, the Neal South Monofill entered into assessment monitoring during 2018 (GHD, 2018b) in compliance with 40 CFR §257.96. The Neal South Monofill was closed in 2018 by capping. Arsenic was detected in groundwater at a statistically significant level above background (GHD, 2018c). In compliance with 40 CFR §257.96 of the Federal CCR rule, an assessment of corrective measures was initiated (GHD, 2019a). The corrective measures assessment was summarized in May 2019 (GHD, 2019b) and the remedy selection was reported in October 2019 (GHD, 2019c). In situ injections were completed during the summer of 2020 as outlined in the Corrective Measures Work Plan (GHD, 2020a). Further description of the corrective measures is provided in Corrective Measures Summary Report (GHD, 2020c).

Two semiannual assessment monitoring events were conducted during 2024, on March 11-13, 2024 and September 16-18, 2024. The 2024 semiannual assessment monitoring events were completed in accordance with 40 CFR §257. On June 3, 2024, a verification sampling event was completed. Groundwater monitoring events specific to the corrective action were also completed during 2024 as described in the Performance Monitoring Evaluation (PME) Plan (GHD, 2020b). Corrective action (PME) monitoring events were completed on March 11-12, 2024 and September 16-17, 2024, concurrent with the assessment monitoring events.

The uppermost aquifer in the vicinity is the Missouri River alluvial aquifer. The water table is located within either fine sand or overlying silts and clays that extend to the surface (Montgomery Watson, 1999). The deeper monitoring wells are screened in alluvial sand and gravel. The uppermost bedrock in the area is the Cretaceous-age Dakota Formation.

2. Groundwater Monitoring Activities

2.1 Groundwater Monitoring Network

The routine groundwater monitoring network (Table 2.1) consists of 23 monitoring wells (MW-1 through MW-5 and MW-7 through MW-24). As part of the corrective action measures, 29 monitoring wells (MW-25 through MW-53) were constructed from late 2019 through the spring of 2020, expanding the network to 52 monitoring wells. Monitoring wells MW-25 through MW-53 are not included in the assessment monitoring program but are part of the corrective action well network sampled under the PME Plan (GHD, 2020b).

In August 2022, four new wells (MW-54 through MW-57) were constructed for delineation purposes. At MW-12, there was a detection of cobalt and selenium at a statistically significant level above the groundwater protection standards

established by 40 CFR §257.95(g) of the Federal CCR rule which required the delineation activities. An alternate source determination (GHD, 2022a) was completed to address the cobalt and selenium detected at MW-12, and is summarized in the 2022 AGWMCAR (GHD, 2023).

In November 2024, seven additional wells were installed in the vicinity of MW-8 and MW-10 (MW-58 through MW-64) for delineation purposes. At MW-8, selenium was detected at a statistically significant level above the groundwater protection standard (GHD, 2024). MW-58 through MW-62 were installed near MW-8 to assist in delineating selenium impact. MW-63 and MW-64 were installed near MW-10 to assist in the delineation of arsenic impact in the area. Stratigraphic logs for each of the seven new monitoring wells are provided in Appendix A.

Groundwater elevation data were collected during each monitoring event from the 56 site-wide monitoring wells (MW-1 through MW-57). There are 23 monitoring wells included in the assessment monitoring network (MW-1 through MW-24). Groundwater samples were collected from 15 of the 23 monitoring wells. These 15 sampled monitoring wells, plus three additional wells in the assessment monitoring network, are screened at the water table (approximately 9 to 23 feet below ground surface [bgs]). Five monitoring wells in the routine monitoring network are screened in a deeper portion (approximately 46 to 56 feet bgs) of the alluvial aquifer and routinely gauged for water elevation.

Horizontal spacing between the downgradient shallow alluvial aquifer monitoring wells ranges from approximately 200 to 300 feet. Groundwater samples are used to assess potential impacts of the Neal South Monofill on surrounding groundwater. Groundwater elevation data are used to identify upgradient and downgradient monitoring points and to determine the potential influence of the Missouri River on groundwater conditions at the Neal South Monofill. Well construction details are provided in Table 2.2.

2.2 Monitoring Well Inspection

During each sampling event, the monitoring wells were inspected, and deficient conditions (if present) of the monitoring wells were noted in the field notes. Wells are maintained with a well cap and a lockable protective casing. Observations include the condition of the protective casing/vault and surrounding ground surface.

Monitoring wells in the groundwater monitoring system consist of 2-inch nominal inner-diameter polyvinyl chloride (PVC) casing and screen. Monitoring well surface completions consist of either a lockable stick-up surface casing set in a concrete pad and placement of protective bollards in locations where traffic may be of concern, or a flushmount cover with a watertight well plug in high traffic areas where a stick-up well is not suitable. In November 2024, the PVC casing at MW-47 was cut 0.45 feet to allow the lid to properly close and lock. All other wells were found to be in generally good condition with no issues affecting well or sample integrity. Due to the surrounding topography, sediment has accumulated on top of some of the monitoring well pads.

The total well depth of each well in the monitoring network is measured on an annual basis to evaluate the well condition and potential sediment accumulation in the well. Total well depth measurements and screen occlusion calculations from recent total depth measurements are presented in Table 2.3. If screen occlusion greater than 10 percent is determined to be present, the well will be redeveloped prior to the next sampling event. No screen occlusion greater than 10 percent was measured during the 2024 monitoring events.

2.3 Sample Collection

Low-flow sampling was conducted using dedicated bladder pumps to purge water and collect samples. Prior to sample collection, the temperature, conductivity, pH, oxidation-reduction potential (ORP), dissolved oxygen, and turbidity of the purge water were measured using a calibrated multiparameter water quality instrument and flow cell. The readings were recorded on well sampling records. Following stabilization, unfiltered samples were collected in laboratory-supplied containers. Copies of the groundwater sampling records for the 2024 events are included in Appendix B. During the March and September 2024 assessment events, field duplicate samples were collected from MW-2 for quality assurance/quality control (QA/QC) purposes. A field duplicate was also collected from MW-12 during the June 2024 verification event. For the PME samples, a duplicate was collected from MW-50 (March and September 2024).

2.4 Analytical Parameters

Groundwater samples were analyzed for the parameters specified in 40 CFR Part 257 Appendix III and Appendix IV (Table 2.4 and 2.5, respectively) for the two semiannual assessment monitoring events. A subset of these parameters was analyzed for the corrective action samples and verification event. The laboratory analyses were conducted by Eurofins Environment Testing North Central, LLC (Eurofins) in Cedar Falls, Iowa with the exception of the Radium 226 and 228 (combined) analyses which were conducted by Eurofins in St. Louis, Missouri. Analyses were conducted by the laboratory in accordance with the procedures and methods described in the United States Environmental Protection Agency (USEPA) Manual SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (September 1986)," as updated and/or in accordance with other approved testing procedures. Eurofins provided prepared sample containers for each monitoring event. Analytical reports from each sampling event report total (i.e., unfiltered) sample results in accordance with the Federal CCR rule.

Table 2.6 summarizes the number of groundwater samples collected for analysis from each monitoring well, the dates the samples were collected, and whether the sample was required by the baseline, detection monitoring, assessment monitoring, or corrective action programs.

Following receipt of the final laboratory analytical reports from each round of sampling, GHD completed an analytical data quality assessment and validation for the groundwater and field quality assurance samples collected during the monitoring events. Based on these assessments, the data are acceptable for use as reported by the laboratories.

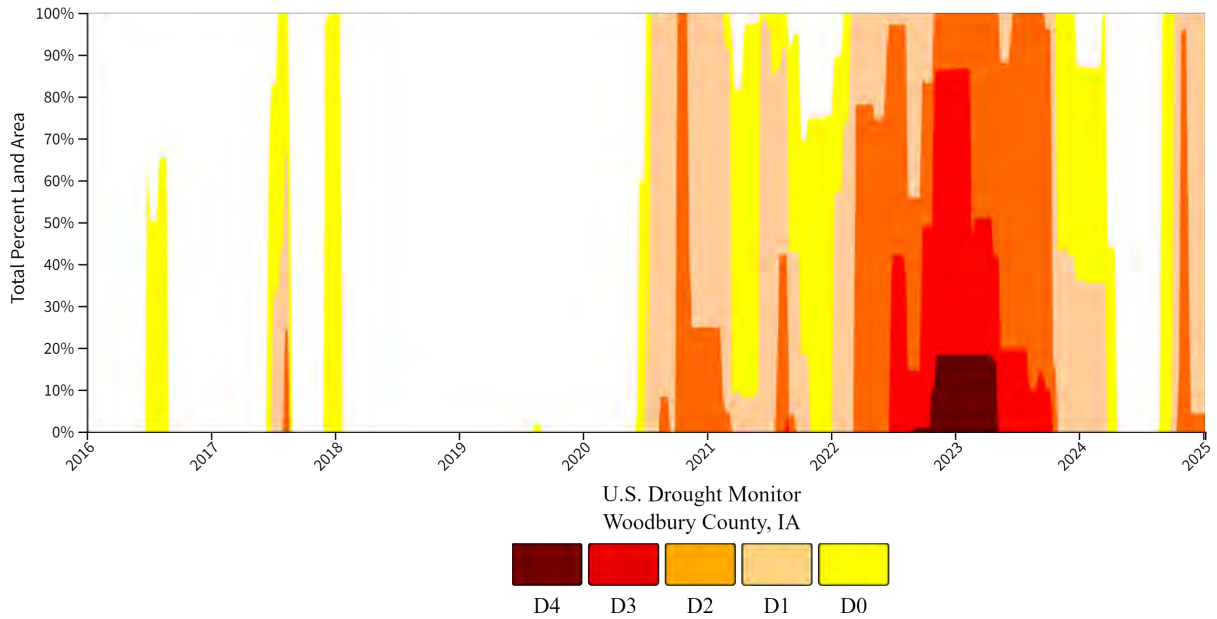
3. Groundwater Flow Conditions

Groundwater levels were measured at each of the monitoring wells included in the monitoring network during each monitoring event. Four of the Neal South Monofill groundwater monitoring wells are in a nested pair with one shallow and one deep well, as illustrated on Figure 1.2 and in Table 3.1. Table 3.1 presents groundwater elevations measured in wells during the March, June, and September 2024 monitoring events.

The groundwater elevations measured during the latter portion of 2024 increased relative to the groundwater levels affected by drought conditions from approximately mid-2020 through mid-2024. Groundwater elevations measured after August 2024 are comparable to pre-drought groundwater elevations measured in March and July 2020. From July 2020 to June 2024, groundwater elevations were some of the lowest recorded at each monitoring well location since the inception of the Federal CCR monitoring program in December 2015. Drought conditions and low Missouri River stage contributed to the low groundwater level conditions.

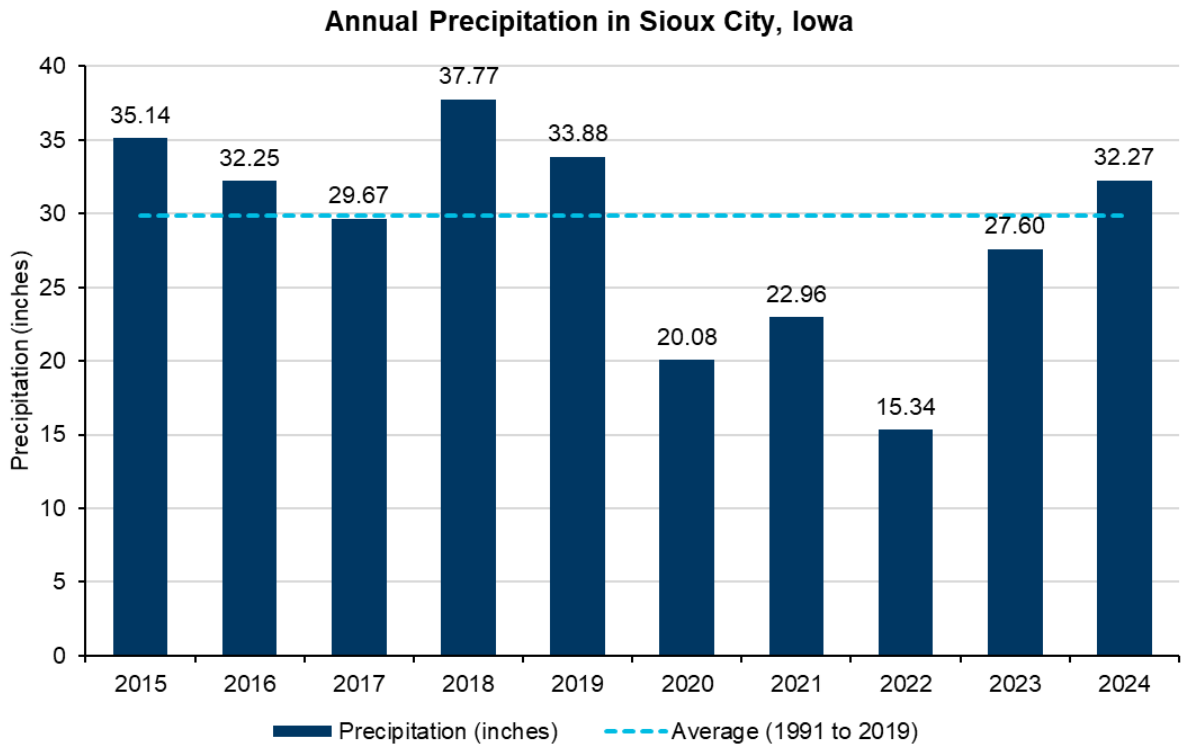
3.1 Drought and Flood Conditions

Groundwater levels at Neal South declined over the last few years due to regional drought conditions. Drought conditions for Woodbury County from 2016 through December 31, 2024 reported by the U.S. Drought Monitor are shown on Inset 1. In mid-2020, 100 percent of the area of Woodbury County was recorded as D0 Abnormally Dry, which then intensified into D1 Moderate Drought and then D2 Severe Drought for a period of time. In early 2021, approximately 80 percent of Woodbury County was in drought. During early 2022 through late 2023, the entire county was reported as at least D1 Moderate Drought, with significant periods of time where all or most of the county was in D2 Severe Drought or D3 Extreme Drought. During late 2022 and early 2023, almost 20 percent of the county, including Neal South, was reported as D4 Exceptional Drought. Beginning mid-April 2024, all of Woodbury County was out of drought conditions until September 2024. Since October 2024, all of Woodbury County has been reported as D1 Moderate Drought to D2 Severe Drought.



Inset 1. Drought conditions for Woodbury County. <https://www.drought.gov/states/iowa/county/Woodbury>

The annual precipitation for the Sioux City, Iowa area is shown on Inset 2. The average annual rainfall (1991 through 2019) at Sioux City, Iowa is 29.90 inches. Rainfall was near normal from 2016 through 2019. From 2020 through 2023, rainfall had been below the annual average. 2024 was above average for the first time since 2019. From mid-October 2023 through December 2024, the accumulated precipitation has been consistently above average. Through December 31, 2024, the annual precipitation is 32.27 inches, which is 3.00 inches above average for the date.



Inset 2. Annual precipitation in Sioux City, Iowa, 2015 through 2024.
<https://hprcc.unl.edu/stationtool/explore.php?sid=USW00014943%27>

During 2018 and 2019, releases from the Missouri River reservoir system upstream to the site were higher-than average. During 2020 through 2023, releases into the Missouri River from the reservoir system decreased river stage near the site (Inset 3) and reduced precipitation occurred (Inset 2). In mid-2024, the river stage began to increase. The flood event that occurred mid-June is recorded on Inset 3. The river stage increased to levels higher than was recorded in 2019. After June 2024, the river stage returned to similar levels as those observed in 2023.

Missouri River at Sioux City, IA - 06486000

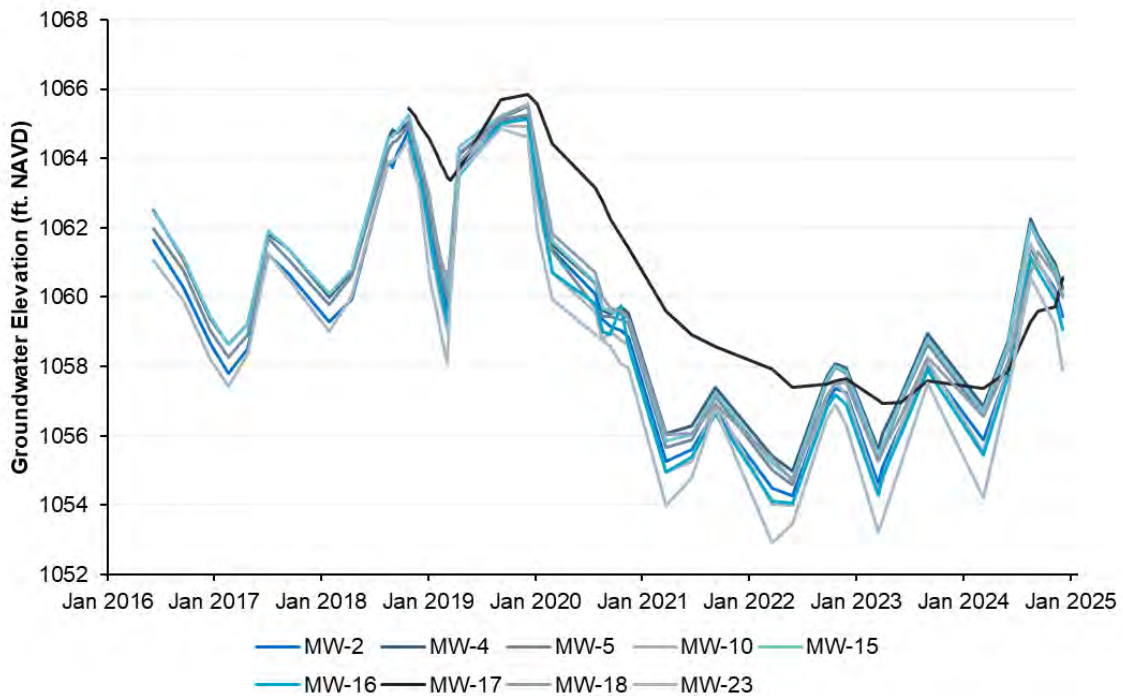
January 1, 2015 - December 31, 2024

Gage height, feet



Inset 3. Missouri River stage at Sioux City, Iowa. <https://waterdata.usgs.gov/monitoring-location/06486000/#parameterCode=00065&period=P2742D>

Groundwater elevations since monitoring began in late 2015 are shown on Inset 4 for select monitoring wells at Neal South. The highest observed groundwater elevations occurred in 2019 and were on a generally decreasing trend though 2023, corresponding with below average precipitation in the area and reduced flows in the Missouri River. Corresponding with an increase in precipitation in the area, groundwater elevations have increased during recent gauging events.



Inset 4. Hydrograph for select wells at Neal South.

3.2 Horizontal Groundwater Flow

Groundwater flow maps were prepared using water level measurements from each monitoring event for the alluvial aquifer (Figures 3.1 through 3.3). The groundwater flow direction for each of the three events was inferred to be to the west. The minor variations in groundwater elevation and flow direction observed during the monitoring events are likely a result of seasonal variability in the amount and rate of infiltration of precipitation.

3.3 Horizontal Hydraulic Gradient and Groundwater Flow Velocity

Hydraulic conductivity data for the alluvial aquifer have not been collected at the Neal South Monofill; however, hydraulic conductivity estimates are available for the alluvial aquifer at the Neal North CCR Monofill, which is located to the northwest in a similar depositional environment (i.e., Missouri River alluvial deposits). Hydraulic conductivity estimates for the shallow alluvial aquifer at the Neal North CCR Monofill range from a low of approximately 0.3 meter per day (m/day) to 12.0 m/day (MWH, 2006). The geometric mean hydraulic conductivity for the shallow portion of the alluvial aquifer is 2.3 m/day (MWH, 2006).

The average linear groundwater velocity at the water table was estimated based on hydraulic conductivity, horizontal gradient, and the estimated porosity of the formation using the following equation:

$$V = Ki/n$$

Where V equals the average linear velocity; K equals the geometric mean hydraulic conductivity (2.3 m/day); i equals the average horizontal hydraulic gradient; and n equals the effective porosity (estimated at 0.3). During the 2024 monitoring events at the Neal South Monofill, the average linear groundwater velocity at the water table (shallow alluvial aquifer) was estimated to range between 0.003 m/day (approximately 4 feet per year), calculated for the September 2024 monitoring event, and 0.006 m/day (approximately 7 feet per year), calculated for the March 2024 monitoring event. The estimated horizontal gradients and average linear groundwater flow velocities for each of the monitoring events are summarized in Table 3.2.

3.4 Vertical Hydraulic Gradient

Water levels measured in monitoring well pairs MW-1/MW-2, MW-3/MW-4, MW-7/MW-8, and MW-9/MW-10 during the two assessment and one verification event were used to calculate vertical hydraulic gradients. The vertical hydraulic gradients were calculated by the following equation:

$$\frac{\text{Water Elevation in Deep Well} - \text{Water Elevation in Shallow Well}}{\text{Elevation of Middle of Saturated Zone of Shallow Well Screen} - \text{Elevation of Middle of Saturated Zone of Deep Well Screen}}$$

The difference in groundwater elevations between nested pairs of wells is generally slight, ranging from 0.0 (at the MW-7/MW-8 well pair during the September 2024 gauging event) to a maximum difference of 0.37 feet (at the MW-3/MW-4 well pair during the June 2024 gauging event).

The vertical hydraulic gradients ranged from -0.011 (downward-directed flow) in well cluster MW-3/MW-4 to 0.002 (upward-directed flow) in well cluster MW-9/MW-10. At well clusters MW-1/MW-2 and MW-3/MW-4, a downward vertical gradient was measured during the 2024 gauging events. Vertical gradients were in the upward direction during the 2024 monitoring events at well cluster MW-9/MW-10. Well cluster MW-7/MW-8 had no measured vertical hydraulic gradient (0.000) during any of the 2024 gauging events.

3.5 Monitoring Well Network Assessment

The Neal South Monofill groundwater monitoring network meets the Federal CCR rule requirements of having at least one upgradient monitoring well and three downgradient monitoring wells, and the groundwater monitoring network meets the design and construction requirements of 40 CFR §257.91. Monitoring wells MW-16, MW-17, and MW-18 have been identified as background or upgradient sampling locations.

4. Groundwater Monitoring

Groundwater sample collection records for the 2024 monitoring events are provided in Appendix B and the associated laboratory analytical reports are provided in Appendix C. Appendix D includes time series graphs of concentration versus time for each analyte in the assessment monitoring program. Analytical results for groundwater samples collected during the updated baseline (see discussion below) and the 2024 monitoring events are summarized in Tables 4.1 and 4.2, respectively. The cumulative database (December 2015 through 2024) for the Neal South assessment monitoring network is provided in Appendix E.

As part of assessment and reporting requirements under the Federal CCR rule, the groundwater monitoring data are subjected to statistical evaluation to demonstrate compliance with monitoring goals. Evaluation components include:

- Statistical summaries for the data sets obtained (on a per-well, per-parameter basis)
- Preparation of trend plots (concentration vs. time)
- Inter-well comparisons (downgradient vs. upgradient)
- Intra-well comparisons (vs. baseline conditions at a given well)

The statistical methods used in these evaluation steps for Neal South are presented in the Groundwater Statistical Methods Certification (Methods Certification) (GHD, 2017). The procedures in the Methods Certification were selected in accordance with the Federal CCR rule, utilizing methodology presented in the USEPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance (Unified Guidance) (USEPA, 2009). The present evaluation utilizes the statistical methods presented therein to evaluate monitoring data from groundwater samples collected during the 2024 assessment monitoring events.

Originally, baseline monitoring under the Federal CCR rule occurred at Neal South during eight monitoring events conducted between December 2015 and July 2017. These first eight events represented the baseline period from

wells MW-4 and MW-15, that at the time represented upgradient conditions. These two wells appeared to be affected by the Monofill and therefore three additional upgradient monitoring wells were installed in October 2018 (MW-16, MW-17, and MW-18). Originally, eight baseline monitoring events for these upgradient wells were completed between October 2018 and March 2019. However, a change in regional conditions has been observed since that time, with parameter concentrations significantly increasing in upgradient wells compared to baseline values (i.e., not a site-related effect). Therefore, the baseline data sets were extended to update the inter-well and intra-well comparison values in the 2021 Annual Report (GHD, 2021a). Consequently, consistent with the 2021 report, the present assessment considers data from October 2018 through September 2021 as baseline for the inter-well (comparing downgradient vs. upgradient conditions) comparisons and data from December 2015 through September 2020 as the intra-well baseline period. Arsenic data at upgradient wells MW-16, MW-17, and MW-18 were identified with a statistically significant trend over time (violating the stationarity assumption of the tolerance limit calculations), therefore a recent period was selected that represented a more stable condition. The arsenic upper tolerance limit (UTL) was then calculated using data from 2020 through to 2024 as the inter-well baseline period.

4.1 Statistical Analysis Approach

Groundwater monitoring at Neal South is currently conducted under assessment monitoring status per the Federal CCR rule. The 2024 assessment monitoring data for Neal South are presented in Table 4.2. During both 2024 semiannual assessment monitoring events all Appendix III and Appendix IV parameters were analyzed in accordance with 40 CFR §257.95(d)(1). One verification sampling event was conducted in June 2024 at wells MW-8, MW-12, MW-14, and MW-15 for selected Appendix IV parameters that were previously detected above comparison values in accordance with 40 CFR §257.95(d)(1).

No single method of statistical analysis is appropriate for each groundwater constituent dataset; instead, the statistical methods selected for use are dependent upon the data and distributions and should consider the specific constituents and the nature of local hydrogeologic conditions. Depending on characteristics of the site and the groundwater monitoring data, a mix of inter-well (comparison vs. upgradient conditions) and intra-well (comparison vs. baseline) tests may be warranted. The statistical methods used for the inter-well and intra-well approaches are selected based on these factors as well as consideration of natural temporal or spatial variability of the concentrations of the groundwater constituents. Substantial natural spatial variability may necessitate intra-well methods. This statistical analysis was completed using both inter-well and intra-well approaches for the purpose of determining if an SSI has occurred at Neal South.

An initial statistical analysis was previously conducted to assess the constituent data and determine the most appropriate statistical approach(es) for the data (GHD, 2020d). The data were examined for outliers, the percentage of non-detect values, and to determine the statistical distribution. Time series plots, box plots of upgradient data, and maps were used to evaluate the potential presence of temporal or spatial variations in constituent concentrations. The baseline analysis update in 2021 utilized the same assessment strategy, just considering additional data for the inter-well and intra-well baseline periods (GHD, 2021a).

Appendix III and IV constituents occur naturally in the environment. For constituents that occur naturally and may vary substantially in concentration across the monitoring network due to natural hydrogeologic or geochemical factors (i.e., exhibiting spatial variability), an inter-well analysis is not appropriate where this occurs. Constituent concentrations greater than upgradient conditions might be incorrectly attributed to impact from Neal South when the differences are actually natural and unrelated to Neal South due to locally varying distributions of groundwater constituents. In such cases, an intra-well approach is appropriate.

4.1.1 Spatial Variability

The concentration of naturally occurring constituents such as the Appendix III and IV constituents can be affected by the presence of differing aquifer material or geochemistry between monitoring well locations. At the Neal South Monofill, the uppermost groundwater occurs in alluvial deposits, which consist primarily of sands and gravels, with zones of finer-grained silts and clays. The natural geochemistry of groundwater can vary between these zones and

affect the detected concentrations of natural constituents. In the case of the Neal South Monofill, these differing geological materials are intersected by the screened zones of the monitoring wells and may result in spatial variability for some constituents.

Based on the evaluation of the original baseline data (GHD, 2020d), the presence of spatial variability among Neal South Monofill background wells (MW-16, MW-17, and MW-18) was found, and this continues to be evident for many detected constituents.

As noted, this spatial variability affects inter-well comparisons for downgradient wells since observed differences between downgradient and upgradient conditions could be due to natural variability or could be due to effects of the Neal South Monofill. An inter-well comparison alone could not distinguish between these two possibilities.

4.1.2 Temporal Variability

The Federal CCR rule considers the occurrence of temporal trends in groundwater monitoring data. Where trends are observed, the statistical method selected must take these into account.

For inter-well baseline UTLs where data from background wells (MW-16, MW-17, and MW-18) were combined, trends were assessed using the Regional Kendall test (see Table 4.3). This test is a modified Seasonal Kendall test described in detail in USEPA, 2009, Section 14.3.4, substituting the individual wells in the place of the separate seasons. In the test, individual Mann-Kendall statistics are calculated for each analyte at each well separately, and then summed to perform the overall test. Statistically significant increasing trends in the background data were found for calcium, total dissolved solids (TDS), barium, and lithium. For these constituents, the statistically significant trends impact or invalidate inter-well comparisons, since the statistical methods presented in the Federal CCR rule (40 CFR §257.93 (f)) assumes no trends are present in the upgradient data.

4.1.3 Summary of Statistical Analysis Approach

The statistical analysis included both inter-well and intra-well approaches for the purpose of determining if SSIs in constituent concentrations in groundwater have occurred at the Neal South Monofill. This approach could change as additional data are collected during future monitoring. If new information warrants such a change, a modification to the statistical approach will be recommended for one or more constituents and/or monitoring wells.

4.2 Assessment of Baseline Data

4.2.1 Stability Assessment/Baseline Period Trend Analysis

Statistically significant regional trends were found during the inter-well baseline period (October 2018 – September 2021) considering the combined background well data. In particular, increasing trends were found for calcium, TDS, barium, and lithium, as shown in Table 4.3. In addition, there were also significant trends identified for some of the intra-well baseline (December 2015 - September 2020) data sets (see results in Table 4.4), specifically:

Increasing trends were found for the following wells/constituents:

- Arsenic at MW-10
- Barium at MW-2, MW-10, and MW-17
- Boron at MW-17
- Calcium at MW-17
- Chloride at MW-4, MW-8, MW-15, MW-19, and MW-21
- Lithium at MW-17
- pH at MW-2, MW-4, MW-10, MW-12, MW-13, MW-14, MW-15, and MW-21
- Radium 226 and 228 (combined) at MW-2

- Sulfate at MW-11 and MW-13
- TDS at MW-11 and MW-17

Decreasing trends were found for the following wells/constituents:

- Barium at MW-14
- Boron at MW-4, MW-10, MW-12, and MW-15
- Calcium at MW-4, MW-8, MW-14, and MW-21
- Chloride at MW-17
- Cobalt at MW-10 and MW-17
- Lithium at MW-2 and MW-4
- Radium 226 and 228 (combined) at MW-16 and MW-17
- Selenium at MW-12, MW-13, and MW-16
- Sulfate at MW-4, MW-12, MW-14, MW-15, MW-16, and MW-20
- TDS at MW-2, MW-4, MW-15, and MW-21

Where trends have been identified in a baseline data set, the methods for intra-well and inter-well comparisons performed below were adjusted to account for non-stationarity during the baseline period.

4.2.2 Inter-well Comparisons – Upgradient Background Values

The Federal CCR rule provides a list of alternate statistical procedures applicable to inter-well and intra-well comparisons (see 40 CFR §257.93(f)). In the Methods Certification, the use of UTLs was selected as being appropriate for assessment of groundwater monitoring data for Neal South. A UTL is a statistically-based limit above which a given sample measurement is unlikely to occur if conditions are consistent with the reference population. For inter-well comparisons, the reference population is the data set of constituent concentrations in upgradient background well(s). Since there are three upgradient background wells (MW-16, MW-17, and MW-18), the data from these three wells have been pooled to calculate the upgradient background UTLs for each constituent.

Calculations of UTLs for inter-well comparisons were completed using the logic and methodology presented in the USEPA’s Technical Guide for its ProUCL software (USEPA, 2022, version 5.2). The results of the inter-well UTL calculations are provided in Table 4.3. As previously discussed, increasing trends in calcium, TDS, barium, boron, and lithium concentrations invalidate inter-well comparisons of background and downgradient wells for these analytes. The UTLs presented in Table 4.3 represent the range of observed concentrations for these analytes. As noted in the 2021 Annual Report (GHD, 2021a), the arsenic inter-well 95/95 UTL was updated due to an outlier value retained in the calculations and interpreted as a valid representative of the range of conditions occurring in groundwater upgradient of the Monofill. However, a recent review of the March 2021 arsenic concentration at MW-18 identified it as an outlier due to additional subsequent sample results and consequently, the arsenic background data set was reassessed in order to calculate a new 95/95 UTL. The addition of the 2022 data to the background data set resulted in statistically significant increasing trends over time (violating the stationarity assumption of the tolerance limit calculations). A recent period, consisting of the last 9 arsenic results (starting in 2022) in each well was selected in an attempt to avoid a trend in the data set, in addition to the removal of the March 2021 arsenic concentration at MW-18. The combined data set consisted of a total of 26 arsenic concentrations (9 per upgradient well, except for MW-18) and did not have a statistically significant trend. Therefore, this data set was used to calculate updated background values. The combined arsenic data set without the outlier was normally distributed, therefore the Student’s *t* UTL with Kaplan–Meier (KM) treatment for non-detects for normal distribution was selected. The arsenic 95/95 UTL was 0.0413 mg/L and the 99/95 UTL was 0.0509 mg/L.

4.2.3 Intra-well Comparisons – Well-specific Baseline Values

As noted in the Methods Certification, the statistical methods (i.e., UTLs) for intra-well comparisons are analogous to those for inter-well comparisons. In this case, the reference population is the data set of constituent concentrations in

a given well observed during the baseline period. Calculation of the upgradient background 95/95 UTL and 99/95 UTL values is performed using the same methods used for the inter-well comparisons.

Where temporal trends were identified over the baseline period, tolerance limits are not calculated (due to violation of the statistical assumptions of the UTL calculations) and a baseline range is provided as a reference. For such data sets, future sample results are to be compared both against the baseline range and what would be expected based on the observed trend over the baseline period.

The calculated intra-well baseline values (UTLs) for each constituent at each well are provided in Table 4.4. Final baseline values were calculated for wells MW-19, MW-20, and MW-21, which have a maximum of nine results for some parameters prior to 2022. Interim baseline values were calculated for antimony, beryllium, cadmium, chromium, lead, mercury, and thallium at wells MW-19, MW-20, and MW-21, which will be updated after a minimum of eight baseline observations is achieved for those parameters.

4.3 Evaluation of 2024 Assessment Monitoring Data

4.3.1 Inter-well Comparisons (vs. Upgradient Background)

Inter-well comparisons of current monitoring data are conducted by comparing monitoring data from the 2024 monitoring events to the upgradient background UTLs derived from the upgradient baseline period data (October 2018 to September 2021 and September 2020 to September 2024 for arsenic). These comparisons are presented in Table 4.5.

The inter-well comparisons found observations in groundwater samples collected from the twelve downgradient monitoring wells where one or both of the 2024 monitoring events had at least one constituent concentration or measurement outside of baseline conditions in the upgradient wells (MW-16, MW-17, and MW-18). These included:

- Boron at MW-2, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-19, and MW-20
- Calcium at MW-13 and MW-19
- pH at MW-19
- Chloride at MW-4, MW-11, MW-12, MW-15, MW-17 (background), MW-19, and MW-20
- Sulfate at MW-8, MW-12, and MW-13
- TDS at MW-12, MW-13, and MW-19
- Arsenic at MW-10
- Barium at MW-10, MW-16 (background), and MW-21
- Lithium at MW-12, MW-18 (background), and MW-19
- Molybdenum at MW-8 and MW-10
- Radium 226 and 228 (combined) at MW-14 and MW-21
- Selenium at MW-8, MW-12, MW-13, MW-15 and MW-16 (background)

The fluoride reporting limit (1 mg/L) was above the inter-well UTL of 0.729 mg/L for the March and September 2024 monitoring events. All of the March and September 2024 results were non-detect for fluoride (1.0 U mg/L).

4.3.2 Intra-well Comparisons (vs. Well-Specific Baseline Values)

Intra-well comparisons of current monitoring data are conducted by comparing monitoring data from the two 2024 assessment monitoring events and a verification event to the baseline period UTLs for each given well. These comparisons are presented in Table 4.6.

The results of the intra-well comparisons indicate the following constituent concentrations are above those observed during the baseline period:

- Boron at MW-19 and MW-20
- Calcium at MW-18 (background), MW-19, MW-20, and MW-21
- Chloride at MW-15, MW-16 (background), MW-17 (background), MW-19, MW-20, and MW-21
- pH at MW-2, MW-4, MW-10, and MW-15
- Sulfate at MW-17 (background), MW-18 (background) and MW-20
- TDS at MW-16 (background) and MW-20
- Arsenic at MW-8
- Barium at MW-2, MW-4, MW-15, MW-16 (background), MW-20, and MW-21
- Cobalt at MW-2, MW-11, MW-13, and MW-21
- Lithium at MW-2, MW-8, MW-12, and MW-18 (background)
- Molybdenum at MW-10, MW-17 (background)
- Radium 226 and 228 (combined) at MW-2, MW-12, MW-13, MW-14, and MW-21
- Selenium at MW-8, MW-12, MW-15, and MW-16 (background)

The fluoride reporting limit (1 mg/L) was above the intra-well 99/95 UTL for the March and September 2024 monitoring event for all wells. All of the March and September 2024 fluoride results were non-detect for fluoride (1.0 U mg/L).

4.4 Comparison to Groundwater Protection Standards (GWPSs)

During the March and September 2024 semi-annual assessment monitoring events, Appendix III and Appendix IV parameters were analyzed. A subset of Appendix III and Appendix IV parameters were analyzed in June 2024. Three constituents were detected at concentrations above the corresponding site-specific GWPS during at least one sampling event in 2024. The 2024 sample results are compared to the GWPSs, as described in 40 CFR §257.95(h):

(h) The owner or operator of the CCR unit must establish a groundwater protection standard for each constituent in appendix IV to this part detected in the groundwater. The groundwater protection standard shall be:

(1) For constituents for which a maximum contaminant level (MCL) has been established under §§141.62 and 141.66 of this title, the MCL for that constituent;

(2) For the following constituents:

- (i) Cobalt 6 micrograms per liter ($\mu\text{g/l}$)*
- (ii) Lead 15 $\mu\text{g/l}$;*
- (iii) Lithium 40 $\mu\text{g/l}$; and*
- (iv) Molybdenum 100 $\mu\text{g/l}$.*

(3) For constituents for which the background level is higher than the levels identified under paragraphs (h)(1) and (h)(2) of this section, the background concentration.

The resulting site-specific GWPS values for Appendix IV parameters at the Neal South Monofill are summarized in Table 4.7. In three cases (arsenic, cobalt, and lithium), the inter-well background value was selected as the site-specific GWPS. Comparisons of the 2024 monitoring data to the GWPS values are presented below for Appendix III and Appendix IV parameters.

4.4.1 Appendix III Analytes

- Boron: No MCL has been established for boron. The maximum boron concentration detected during 2024 was 3.27 milligrams per liter (mg/L) at MW-8.
- Calcium: No MCL has been established for calcium. The maximum calcium concentration detected during 2024 was 317 mg/L at MW-19.

- Chloride: No MCL has been established for chloride. The maximum chloride concentration detected during 2024 was 156 mg/L at MW-20.
- Fluoride: Fluoride has an MCL of 4 mg/L and is included on both the Appendix III and Appendix IV analyte lists. No fluoride was detected above the associated reporting limit (1.00 mg/L) during any sampling event in 2024.
- pH: No MCL has been established for pH. The highest and lowest pH recorded during the 2024 monitoring events were 7.6 J (at MW-2, MW-10, MW-16, MW-18 and MW-21) and 6.7 J (at MW-19).
- Sulfate: No MCL has been established for sulfate. The maximum sulfate concentration detected during 2024 was 594 mg/L at monitoring well MW-12.
- TDS: No MCL has been established for TDS. The maximum TDS concentration detected during 2024 was 1,360 mg/L at monitoring well MW-19.

4.4.2 Appendix IV Analytes

- Antimony: No detectable concentrations of antimony were reported in any of the samples collected during the 2024 monitoring events. The antimony method reporting limit is 0.00200 mg/L which is below the established MCL of 0.006 mg/L.
- Arsenic: Arsenic has a site-specific background GWPS of 0.0413 mg/L. Arsenic was detected below this value at all locations during the 2024 sampling events, except MW-10 which exceeded in both March 2024 (0.0467 mg/L) and September 2024 (0.0446 mg/L). Arsenic concentrations were detected below this value, but exceeded the MCL of 0.01 mg/L in groundwater collected from MW-2 (March and September 2024), MW-17 (background; March and September 2024), MW-18 (background; March and September 2024), and MW-20 (March and September 2024). Arsenic was also detected at concentrations below the site-specific GWPS and MCL, but above the method reporting limit (0.00200 mg/L) during one or more sampling event, at wells MW-8, MW-13, and MW-21. Arsenic was not detected in wells MW-4, MW-11, MW-12, MW-14, MW-15, MW-16, and MW-19 during events in 2024. Arsenic was detected above the site-specific GWPS in PME monitoring wells MW-30, MW-43, and MW-49 (Appendix F).
- Barium: Barium was detected in all monitored wells during the 2024 monitoring events; however, the detected levels were below the barium MCL (2.0 mg/L) with a maximum concentration of 0.483 mg/L at MW-21 during the March 2024 monitoring event.
- Beryllium: No detectable concentrations of beryllium were reported in any of the samples collected during the 2024 monitoring events. The beryllium reporting limit is 0.00100 mg/L, which is below the established MCL (0.004 mg/L).
- Cadmium: No detectable concentrations of cadmium were reported in any of the samples collected during the 2024 monitoring events. The cadmium reporting limit is 0.000200 mg/L, which is below the established MCL (0.005 mg/L).
- Chromium: Chromium concentrations were below the method reporting limit (0.00500 mg/L) and the established MCL (0.1 mg/L) during 2024 monitoring events.
- Cobalt: The site-specific GWPS for cobalt in groundwater at the Neal South Monofill is 0.00724 mg/L. The highest cobalt concentrations detected during 2024 was at MW-19 (0.00636 mg/L in March 2024).
- Lead: Lead concentrations were below the method reporting limit (0.000500 mg/L), and were below the established CCR Rule GWPS of 0.015 mg/L in all samples from all wells during the 2024 monitoring events.
- Lithium: Lithium was detected in all wells during 2024 above the CCR Rule GWPS of 0.040 mg/L. The maximum lithium concentration detected was 0.182 mg/L at monitoring well MW-19 in September 2024, which was above the site-specific GWPS of 0.146 mg/L; this result will be verified during the next sampling event. Other wells that were above the site-specific GWPS include: downgradient well MW-12 (0.152 mg/L in March 2024) and background well MW-18 (0.156 mg/L in September 2024). All other lithium concentrations were below the site-specific GWPS.
- Mercury: Mercury concentrations were below the method reporting limit (0.000200 mg/L) and the established MCL (0.002 mg/L) in all samples from all monitoring wells during the 2024 monitoring events.

- Molybdenum: The GWPS for molybdenum under the CCR Rule is 0.100 mg/L. Molybdenum was detected at MW-8, MW-10, MW-17, and MW-18 with a maximum molybdenum concentration of 0.0153 mg/L at well MW-8, which is below the GWPS. All other wells had no detectable concentrations during the 2024 monitoring events.
- Radium 226 and 228 (combined): Radium 226 and 228 (combined) was detected in the majority of the monitoring wells during at least one of the 2024 monitoring events; however, detected concentrations were below the MCL of 5 picocuries per liter (pCi/L), except at MW-14. MW-14 had a maximum radium 226 and 228 (combined) concentration of 7.61 pCi/L in March 2024, which is above the MCL. However, subsequent radium 226 and 228 (combined) results from MW-14 were below the site-specific GWPS.
- Selenium: Selenium has an established MCL of 0.05 mg/L. The method reporting limit for selenium is 0.00500 mg/L. Selenium was detected at MW-8, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16 during the 2024 monitoring events. Concentrations at MW-8 (0.145 mg/L in March 2024 and 0.0809 mg/L in June 2024), MW-12 (0.293 mg/L in March 2024 and 0.193 mg/L in September 2024), MW-13 (0.0760 mg/L in September 2024), MW-15 (0.0677 mg/L in March 2024), and MW-16 (0.118 mg/L in September 2024) were above the established MCL during at least one sampling event in 2024. Of these locations, MW-8 is the only monitoring well with consecutive sampling events above the MCL, resulting in an SSL. Monitoring at these locations will continue for selenium. Selenium was not detected in any other wells during any of the 2024 monitoring events.
- Thallium: Thallium concentrations were below the method reporting limit (0.00100 mg/L) and the established MCL (0.002 mg/L) in all samples from monitoring wells during the 2024 monitoring events.

5. Corrective Action

Corrective measures were conducted in 2020 to address arsenic detected at a statistically significant level (SSL) above the groundwater protection standard (GWPS) at monitoring wells MW-2 and MW-10 in 2018 (GHD, 2019a; GHD, 2019b). Following approval from the USEPA for underground injection under Rule Authorization, in situ injections were performed from August 5 through 12, 2020 and August 17 through 19, 2020 as outlined in Work Plan (GHD, 2020b).

A PME Plan (GHD, 2020b) was developed which outlines additional monitoring locations to augment the routine monitoring at the Neal South Monofill to determine the performance of the in situ corrective action. The PME Plan designates additional monitoring locations as water level gauging locations or both water level gauging locations and groundwater monitoring locations for arsenic and calcium by EPA Method 6020A and sulfate by EPA Method 9056A. Corrective action (PME) monitoring events were completed on March 11-12, 2024 and September 16-17, 2024 (concurrent with the assessment monitoring events). Appendix F provides the Performance Monitoring Evaluation Report focused on the groundwater monitoring related to corrective actions at the monofill. The following conclusions and recommendations are provided in the Performance Monitoring Evaluation Report (Appendix F):

- Arsenic concentrations at the Neal South Monofill have been variable, both within the MW-2 and MW-10 injection areas and in the upgradient, background wells. Distribution of calcium polysulfide in the subsurface is evident for increases in calcium and sulfate following the injections. Continued groundwater monitoring in accordance with the PME Plan is recommended.
- Arsenic concentrations at the Neal South Monofill are below the updated site-specific GWPS for arsenic, with the exception of MW-30 in the MW-2 area and MW-10, MW-43, and MW-49 in the MW-10 area.
- Continued evaluation of upgradient, background concentrations of arsenic and other Appendix III and Appendix IV parameters will be completed in accordance with the requirements of 40 CFR §257.

Corrective measures to address selenium detected at an SSL above the GWPS at MW-8 are pending.

6. Conclusions and Recommendations

6.1 Groundwater Flow and Evaluation of the Monitoring Network

Groundwater flow in the vicinity of the Neal South Monofill is generally to the west. The groundwater flow evaluation (see Figures 3.1 through 3.3) indicates the monitoring network is sufficient and has appropriately located upgradient and downgradient well locations.

6.2 Groundwater Quality

A statistical evaluation of groundwater monitoring data collected during the updated intra-well baseline period (December 2015 to September 2020) and inter-well baseline period (October 2018 to September 2021) was conducted in accordance with the Federal CCR rule and Unified Guidance for assessing groundwater data (USEPA, 2009). The arsenic UTL was recalculated this reporting period using data from 2020 through to 2024 as the inter-well baseline period. This evaluation (GHD, 2021a) was successful in characterizing the baseline data sets, assessing the baseline data for trends, and generating inter-well upgradient background reference values and intra-well baseline values against which future monitoring data were evaluated.

An assessment of monitoring data from samples collected during the 2024 assessment and verification monitoring events has been conducted. Key results of the evaluation include:

- Significant concentration trends in groundwater over time were observed in some baseline data sets for both downgradient wells and upgradient wells.
- Inter-well baseline values (UTLs) use the baseline data from the three upgradient background wells (MW-16, MW-17, and MW-18) and the intra-well baseline values (UTLs) are calculated on a per-constituent, per-well basis.
- Evaluation of the data from the 2024 monitoring events indicate that:
 - Inter-well comparisons – The results of the inter-well comparisons indicate that all twelve downgradient wells had a constituent concentration or measurement outside of baseline conditions in the background wells for at least one analyte (boron, calcium, pH, chloride, sulfate, TDS, arsenic, barium, lithium, molybdenum, radium 226 and 228 (combined), and selenium) during one or more sample events.
 - Intra-well comparisons – Intra-well comparisons indicated constituent concentrations above those observed during the baseline (boron, calcium, chloride, pH, sulfate, TDS, arsenic, barium, cobalt, lithium, molybdenum, radium 226 and 228 combined, and selenium) at downgradient wells MW-2, MW-4, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-19, MW-20 and MW-21. In addition, calcium, chloride, sulfate, TDS, barium, lithium, molybdenum, and selenium were reported above intra-well baseline values at background monitoring wells MW-16, MW-17, and MW-18.

6.3 Corrective Action

In situ injections of a 29% calcium polysulfide (Remotox) solution were completed during August 2020 to address statistically significant levels of arsenic detected in the MW-2 and MW-10 areas. PME groundwater monitoring was completed to evaluate the effectiveness of the corrective action. Monitoring results collected during 2024 display expected variability in arsenic concentrations. Continued PME groundwater monitoring in accordance with the PME Plan (GHD, 2020b) will be completed to determine the effectiveness of the remedy.

Corrective measures to address selenium detected at an SSL above the GWPS at MW-8 are pending.

6.4 Recommendations

Based on the results of the 2024 sampling, the Neal South Monofill will remain in assessment monitoring and the corrective measures PME monitoring plan will be continued for arsenic. Following completion of the delineation work associated with the selenium SSL at MW-8, a corrective measures assessment will be completed.

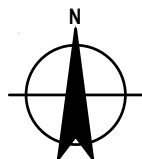
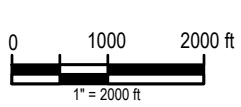
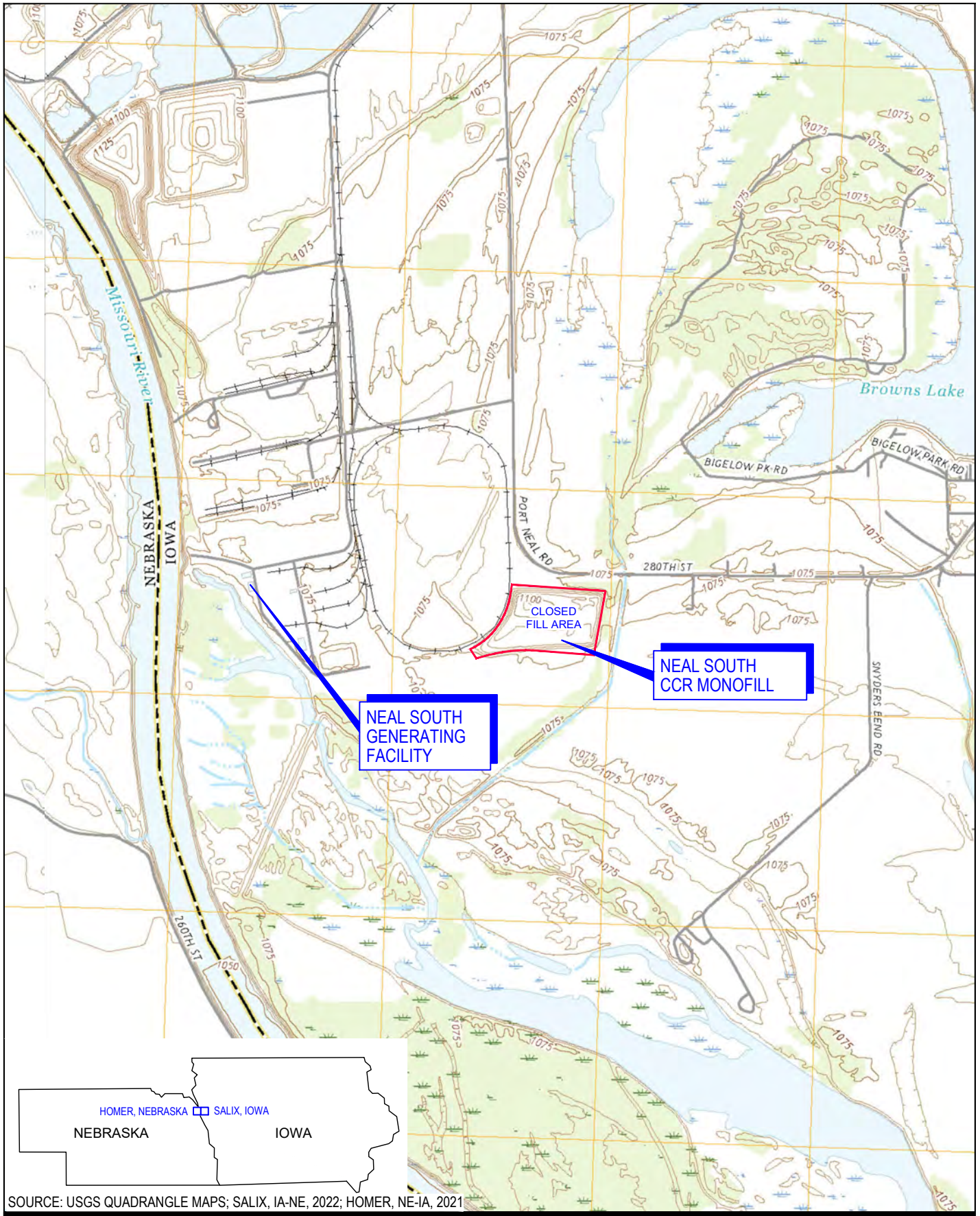
No changes to the monitoring network or sampling procedures are necessary at this time.

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Figures



MIDAMERICAN ENERGY COMPANY
NEAL SOUTH CCR MONOFILL
SALIX, IOWA

Project No. 12576485
Date November 2024

SITE LOCATION

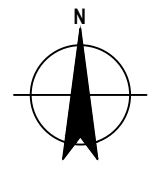
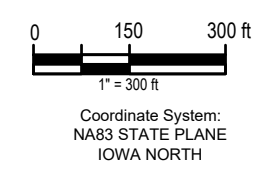
FIGURE 1.1



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- LEGEND**
- MW-8 SHALLOW GROUNDWATER MONITORING WELL
 - MW-7 DEEP GROUNDWATER MONITORING WELL
 - MW-6 ABANDONED MONITORING WELL

- △ UPGRADIENT SAMPLING LOCATION
- DOWNGRADIENT SAMPLING LOCATION
- ◇ GAUGING LOCATION



MIDAMERICAN ENERGY COMPANY
NEAL SOUTH CCR MONOFILL
SALIX, IOWA

SITE MAP AND MONITORING WELL LOCATIONS

Project No. 12576485
Date November 2024

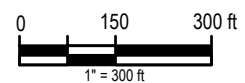
FIGURE 1.2



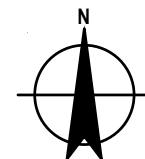
LEGEND

- MW-24 SHALLOW GROUNDWATER MONITORING WELL
- MW-7 DEEP GROUNDWATER MONITORING WELL
- 1057.70 GROUNDWATER ELEVATION
- * NOT USED FOR CONTOURING

- 1058.0 — GROUNDWATER CONTOUR
- ➔ GROUNDWATER FLOW DIRECTION
- △ UPGRADIENT SAMPLING LOCATION
- DOWNGRADIENT SAMPLING LOCATION
- ◇ GAUGING LOCATION



Coordinate System:
NA83 STATE PLANE
IOWA NORTH



MIDAMERICAN ENERGY COMPANY
NEAL SOUTH CCR MONOFILL
SALIX, IOWA

GROUNDWATER FLOW MAP
MARCH 11, 2024

Project No. 12576485
Date November 2024

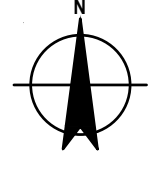
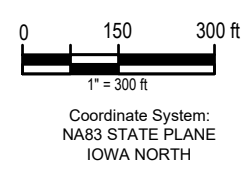
FIGURE 3.1



LEGEND

- MW-10 SHALLOW GROUNDWATER MONITORING WELL
- MW-7 DEEP GROUNDWATER MONITORING WELL
- 1057.97 GROUNDWATER ELEVATION
- * NOT USED FOR CONTOURING

- 1058.0 — GROUNDWATER CONTOUR
- ➔ GROUNDWATER FLOW DIRECTION
- △ UPGRADIENT SAMPLING LOCATION
- DOWNGRADIENT SAMPLING LOCATION
- ◇ GAUGING LOCATION



MIDAMERICAN ENERGY COMPANY
NEAL SOUTH CCR MONOFILL
SALIX, IOWA

GROUNDWATER FLOW MAP
JUNE 3, 2024

Project No. 12576485
Date November 2024

FIGURE 3.2

Filename: N:\US\Des Moines\Projects\563112576485\Digital_Design\ACAD\Figures\RPT006\12576485-GHD-00-00-RPT-EN-D104_DE-006.dwg
Plot Date: 22 November 2024 9:53 AM



LEGEND ● MW-24 SHALLOW GROUNDWATER MONITORING WELL ● MW-7 DEEP GROUNDWATER MONITORING WELL 1057.70 GROUNDWATER ELEVATION * NOT USED FOR CONTOURING		— 1061 — GROUNDWATER CONTOUR → GROUNDWATER FLOW DIRECTION ▲ UPGRADIENT SAMPLING LOCATION □ DOWNGRADIENT SAMPLING LOCATION		◆ GAUGING LOCATION 0 150 300 ft 1" = 300 ft Coordinate System: NA83 STATE PLANE IOWA NORTH				MIDAMERICAN ENERGY COMPANY NEAL SOUTH CCR MONOFILL SALIX, IOWA Project No. 12576485 Date November 2024	
							GROUNDWATER FLOW MAP SEPTEMBER 16, 2024		FIGURE 3.3

Tables

Table 2.1

**Groundwater Monitoring Well Network
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Monitoring Wells	Use in Monitoring Network	Role in Monitoring Network
MW-1 ^a	Gauged Only	Gauging Location
MW-2	Gauged and Sampled	Downgradient Location
MW-3 ^a	Gauged Only	Gauging Location
MW-4	Gauged and Sampled	Upgradient Location
MW-5 ^a	Gauged Only	Gauging Location
MW-7 ^a	Gauged Only	Gauging Location
MW-8	Gauged and Sampled	Downgradient Location
MW-9 ^a	Gauged Only	Gauging Location
MW-10	Gauged and Sampled	Downgradient Location
MW-11	Gauged and Sampled	Downgradient Location
MW-12	Gauged and Sampled	Downgradient Location
MW-13	Gauged and Sampled	Downgradient Location
MW-14	Gauged and Sampled	Downgradient Location
MW-15	Gauged and Sampled	Upgradient Location
MW-16	Gauged and Sampled	Upgradient Location
MW-17	Gauged and Sampled	Upgradient Location
MW-18	Gauged and Sampled	Upgradient Location
MW-19	Gauged and Sampled	Downgradient Location
MW-20	Gauged and Sampled	Downgradient Location
MW-21	Gauged and Sampled	Downgradient Location
MW-22 ^b	Gauged Only	Gauging Location
MW-23 ^b	Gauged Only	Gauging Location
MW-24 ^b	Gauged Only	Gauging Location

Table 2.1

**Groundwater Monitoring Well Network
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Monitoring Wells	Use in Monitoring Network	Role in Monitoring Network
MW-25	Gauged Only	Performance Monitoring Only
MW-26	Gauged and Sampled	Performance Monitoring Only
MW-27	Gauged Only	Performance Monitoring Only
MW-28	Gauged and Sampled	Performance Monitoring Only
MW-29	Gauged Only	Performance Monitoring Only
MW-30	Gauged and Sampled	Performance Monitoring Only
MW-31	Gauged Only	Performance Monitoring Only
MW-32	Gauged and Sampled	Performance Monitoring Only
MW-33	Gauged and Sampled	Performance Monitoring Only
MW-34	Gauged and Sampled	Performance Monitoring Only
MW-35	Gauged Only	Performance Monitoring Only
MW-36	Gauged and Sampled	Performance Monitoring Only
MW-37	Gauged Only	Performance Monitoring Only
MW-38	Gauged Only	Performance Monitoring Only
MW-39	Gauged Only	Performance Monitoring Only
MW-40	Gauged Only	Performance Monitoring Only
MW-41	Gauged Only	Performance Monitoring Only
MW-42	Gauged Only	Performance Monitoring Only
MW-43	Gauged and Sampled	Performance Monitoring Only
MW-44	Gauged Only	Performance Monitoring Only
MW-45	Gauged Only	Performance Monitoring Only
MW-46	Gauged Only	Performance Monitoring Only
MW-47	Gauged Only	Performance Monitoring Only
MW-48	Gauged Only	Performance Monitoring Only
MW-49	Gauged and Sampled	Performance Monitoring Only
MW-50	Gauged and Sampled	Performance Monitoring Only
MW-51	Gauged and Sampled	Performance Monitoring Only
MW-52	Gauged and Sampled	Performance Monitoring Only
MW-53	Gauged and Sampled	Performance Monitoring Only

Notes:

^a Well is screened in deep portion of the alluvial aquifer.

^b Well was sampled for delineation purposes during the fall of 2018, 2022, and 2024 (MW-23 and MW-24).

Well Construction Details
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

			Monitoring Well Construction					
Well			Ground Surface	Top of		Screen	Top of	Bottom of
Identification	Northing	Easting	Elevation	Casing	Total Depth	Length	Screen	Screen
			(NAVD)	(NAVD)	(feet BTOC)	(feet)	(NAVD)	(NAVD)
MW-1 ^a	3585568.7	4151099.3	1,076.26	1079.10	56.10	5	1,028.00	1,023.00
MW-2	3585568.0	4151093.3	1,076.01	1079.05	30.30	15	1,063.75	1,048.75
MW-3 ^{ad}	3585569.1	4152099.9	1,074.22	1076.93	58.5	5	1,023.46	1,018.46
MW-4	3585569.6	4152105.9	1,074.38	1077.38	26.70	15	1,065.68	1,050.68
MW-5 ^{ab}	3584559.2	4151802.4	1,077.45	1080.66	52.41	5	1,033.25	1,028.25
MW-7 ^{ac}	3584541.0	4151128.0	1,074.00	1075.98	47.85	5	1,033.13	1,028.13
MW-8 ^c	3584542.4	4151122.3	1,074.00	1075.78	24.73	15	1,066.05	1,051.05
MW-9 ^{ab}	3584471.1	4150346.8	1,076.11	1079.85	59.85	5	1,025.00	1,020.00
MW-10 ^b	3584472.9	4150352.3	1,076.41	1080.28	29.59	15	1,065.69	1,050.69
MW-11	3585119.9	4150620.0	1,078.86	1081.32	37.10	25	1,069.22	1,044.22
MW-12 ^b	3584882.6	4150461.9	1,084.41	1087.46	35.84	10	1,061.62	1,051.62
MW-13	3584757.1	4150325.5	1,083.47	1085.58	35.10	10	1,060.48	1,050.48
MW-14	3585319.1	4150695.0	1,079.19	1081.04	29.78	15	1,066.26	1,051.26
MW-15	3584908.1	4152060.7	1,074.89	1076.85	25.19	15	1,066.66	1,051.66
MW-16	3585839.1	4150839.6	1,079.43	1082.37	33.65	15	1,063.72	1,048.72
MW-17	3585877.3	4151284.6	1,077.94	1080.64	28.58	15	1,067.06	1,052.06
MW-18	3585768.6	4151871.1	1,074.51	1077.11	28.54	15	1,063.57	1,048.57
MW-19	3585458.4	4150566.5	1,078.44	1081.18	33.65	15	1,062.53	1,047.53
MW-20	3584978.0	4150342.7	1,079.65	1082.07	33.15	15	1,063.92	1,048.92
MW-21	3584339.3	4149933.9	1,071.00	1074.00	23.17	15	1,065.83	1,050.83
MW-22	3585155.1	4149967.7	1,081.90	1084.71	33.62	15	1,066.09	1,051.09
MW-23	3584829.0	4149032.5	1,077.38	1080.01	28.09	15	1,066.92	1,051.92
MW-24	3584330.5	4149078.0	1,076.38	1078.92	28.41	15	1,065.51	1,050.51
MW-25	3585624.2	4150795.3	1,077.19	1080.09	31.64	15	1,063.45	1,048.45
MW-26	3585619.0	4150889.1	1,075.73	1078.56	29.80	15	1,063.76	1,048.76
MW-27	3585614.9	4150995.3	1,075.50	1078.17	29.68	15	1,063.49	1,048.49
MW-28	3585610.2	4151095.2	1,075.68	1078.83	30.14	15	1,063.69	1,048.69
MW-29	3585605.7	4151195.4	1,075.79	1078.81	29.77	15	1,064.04	1,049.04
MW-30	3585601.1	4151295.0	1,075.98	1078.73	30.09	15	1,063.64	1,048.64
MW-31	3585596.5	4151395.1	1,075.65	1078.70	29.90	15	1,063.80	1,048.80
MW-32	3585543.4	4150891.4	1,075.35	1078.53	29.76	15	1,063.77	1,048.77
MW-33	3585537.0	4150982.1	1,075.93	1078.66	30.08	15	1,063.58	1,048.58
MW-34	3585535.6	4151060.8	1,076.13	1078.85	30.07	15	1,063.78	1,048.78
MW-35	3585529.9	4151126.3	1,076.20	1078.26	30.10	15	1,063.16	1,048.16
MW-36	3585526.1	4151191.1	1,076.34	1078.76	30.10	15	1,063.66	1,048.66
MW-37	3585520.0	4151290.9	1,076.17	1079.16	29.95	15	1,064.21	1,049.21
MW-38	3585515.1	4151090.4	1,076.34	1079.27	30.50	15	1,063.77	1,048.77
MW-39	3584497.5	4150100.5	1,073.12	1076.32	27.50	15	1,063.82	1,048.82

Well Construction Details
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

			Monitoring Well Construction					
Well Identification	Northing	Easting	Ground Surface	Top of	Total Depth	Screen	Top of	Bottom of
			Elevation (NAVD)	Casing (NAVD)		Length (feet)	Screen (NAVD)	Screen (NAVD)
MW-40	3584497.5	4150251.0	1,076.79	1079.73	31.25	15	1,063.48	1,048.48
MW-41	3584498.1	4150316.7	1,077.09	1079.49	30.86	15	1,063.63	1,048.63
MW-42	3584498.5	4150386.5	1,076.81	1079.85	31.19	15	1,063.66	1,048.66
MW-43	3584498.9	4150451.5	1,077.13	1080.18	31.43	15	1,063.75	1,048.75
MW-44	3584499.6	4150551.3	1,076.19	1079.03	30.31	15	1,063.72	1,048.72
MW-45	3584410.7	4149952.7	1,072.44	1075.15	25.70	15	1,064.45	1,049.45
MW-46	3584410.3	4150052.6	1,070.89	1074.00	26.65	15	1,062.35	1,047.35
MW-47 ^e	3584410.0	4150152.3	1,070.47	1073.22	25.74	15	1,062.48	1,047.48
MW-48	3584417.4	4150251.7	1,072.52	1075.51	26.16	15	1,064.35	1,049.35
MW-49	3584415.8	4150353.2	1,072.41	1075.16	26.05	15	1,064.11	1,049.11
MW-50	3584416.4	4150452.0	1,072.42	1075.43	26.15	15	1,064.28	1,049.28
MW-51	3584407.2	4150544.0	1072.11	1075.10	25.30	15	1,064.80	1,049.80
MW-52	3584311.6	4150311.5	1070.42	1073.37	25.59	15	1,062.78	1,047.78
MW-53	3584313.1	4150409.4	1070.38	1073.35	26.14	15	1,062.21	1,047.21
MW-54	3584962.3	4150516.0	1081.74	1081.59	34.65	15	1,061.94	1,046.94
MW-55	3584819.4	4150393.5	1083.56	1086.40	38.19	15	1,063.21	1,048.21
MW-56	3584874.8	4150402.5	1080.86	1080.97	34.10	15	1,061.87	1,046.87
MW-57	3584846.7	4150090.8	1071.40	1074.37	28.16	15	1,061.21	1,046.21
MW-58	3584455.7	4150867.6	1071.93	1074.93	30.28	15	1,059.65	1,044.65
MW-59	3584483.2	4150984.5	1072.36	1075.28	30.28	15	1,060.00	1,045.00
MW-60	3584489.0	4151230.5	1072.58	1075.32	30.28	15	1,060.04	1,045.04
MW-61	3584384.3	4150995.5	1070.13	1073.15	29.12	15	1,059.03	1,044.03
MW-62	3584422.7	4151125.2	1070.96	1073.97	28.85	15	1,060.12	1,045.12
MW-63	3584310.5	4150522.8	1068.81	1071.95	25.29	15	1,061.66	1,046.66
MW-64	3584435.3	4150645.3	1072.55	1075.32	27.86	15	1,062.46	1,047.46

Notes:

^a Well is screened in deep portion of the alluvial aquifer.

BTOC - Below top of casing.

NAVD - North American Vertical Datum 1988.

Updated survey performed October 2018 by Snoozy Surveying

^b Top of casing elevations at MW-5, MW-9, MW-10, MW-12 were changed during 2018 monofill capping project.

MW-5 top of casing elevation changed from 1077.15 to 1080.66 prior to Sept. 4, 2018 gauging event; MW-9 (from 1076.20 to 1079.85) and MW-10 (from 1076.29 to 1080.28) on Oct. 18, 2018.

MW-12 top of casing elevation was changed from 1086.79 to 1087.46 on Oct. 11, 2018.

^c Top of casing elevations at MW-7 and MW-8 were changed on December 6, 2019 as part of monofill closure project.

MW-7 top of casing elevation changed from 1078.62 to 1075.98; MW-8 changed from 1078.54 to 1075.78.

^d Top of casing elevation at MW-3 was changed in October 2022 to accommodate apparent settlement of the well pad.

Approximately 4-inches of casing was removed.

^e Top of casing elevation at MW-4 was changed in November 2024 to accommodate apparent settlement of the well pad.

Elevation changed from 1073.67 to 1073.22.

Table 2.3

**Monitoring Well Screen Occlusion Evaluation
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Well	Top of Casing Elevation	Total Well Depth Below Top of Casing (TOC) (feet)	Screen Length (feet)	20-Aug-2018		29-Oct-2018		2-Mar-2020		19-Aug-2020		14-Sep-2020		7-Sep-2021		26-Sep-2022		11-Sep-2023		16-Sep-2024	
				Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded
MW-1 ^a	1079.10	56.10	5	56.18	-1.6%	NM	NM	56.30	-4.0%	NM	NM	56.15	-1.0%	56.29	-3.8%	56.27	-3.4%	56.26	-3.2%	56.26	-3.2%
MW-2	1079.05	30.30	15	30.48	-1.2%	NM	NM	30.44	-0.9%	NM	NM	30.45	-1.0%	30.44	-0.9%	30.44	-0.9%	30.44	-0.9%	30.43	-0.9%
MW-3 ^{ad}	1076.93	58.47	5	58.83	-0.6%	NM	NM	59.05	-5.0%	NM	NM	58.75	1.0%	59.02	-4.4%	NM	NM	58.5	-0.6%	58.70	-4.6%
MW-4	1077.38	26.70	15	26.50	1.3%	NM	NM	26.47	1.5%	NM	NM	26.70	0.0%	26.25	3.0%	26.17	3.5%	26.16	3.6%	26.64	0.4%
MW-5 ^{ab}	1080.66	52.41	5	49.15	-5.0%	NM	NM	52.62	-4.2%	NM	NM	52.60	-3.8%	52.68	-5.4%	52.58	-3.4%	52.58	-3.4%	52.67	-5.2%
MW-7 ^{ac}	1075.98	47.85	5	50.68	-5.6%	NM	NM	47.85	0.0%	NM	NM	47.80	1.0%	47.98	-2.6%	48.03	-3.6%	48.04	-3.8%	48.14	-5.8%
MW-8 ^c	1075.78	24.73	15	27.72	-0.8%	NM	NM	24.73	0.0%	NM	NM	24.60	0.9%	24.71	0.1%	24.68	0.3%	24.72	0.1%	24.72	0.1%
MW-9 ^{ab}	1079.85	59.85	5	56.03	3.4%	NM	NM	60.13	-5.6%	NM	NM	59.90	-1.0%	60.00	-3.0%	60.1	-5.0%	60.1	-5.0%	60.16	-6.2%
MW-10 ^b	1080.28	29.59	15	25.75	-1.0%	NM	NM	29.73	-0.9%	NM	NM	29.75	-1.1%	29.75	-1.1%	29.75	-1.1%	29.72	-0.9%	29.77	-1.2%
MW-11	1081.32	37.10	25	37.40	-1.2%	NM	NM	37.46	-1.4%	NM	NM	37.35	-1.0%	37.36	-1.0%	37.38	-1.1%	37.39	-1.2%	37.37	-1.1%
MW-12 ^b	1087.46	35.84	10	34.98	-1.8%	35.51	3.3%	35.55	2.9%	NM	NM	35.50	3.4%	35.58	2.6%	35.55	2.9%	35.53	3.1%	35.57	2.7%
MW-13	1085.58	35.10	10	35.10	0.0%	NM	NM	35.29	-1.9%	NM	NM	35.10	0.0%	35.28	-1.8%	35.28	-1.8%	35.28	-1.8%	35.36	-2.6%
MW-14	1081.04	29.78	10	29.20	5.8%	NM	NM	29.27	5.1%	NM	NM	29.20	5.8%	29.24	5.4%	29.25	5.3%	29.24	5.4%	29.30	4.8%
MW-15	1076.85	25.19	10	25.07	1.2%	NM	NM	25.18	0.1%	NM	NM	25.20	-0.1%	25.18	0.1%	25.16	0.3%	25.17	0.2%	25.27	-0.8%
MW-16	1082.37	33.65	15	NI	NI	33.63	0.1%	33.61	0.3%	NM	NM	33.80	-1.0%	33.60	0.3%	33.61	0.3%	33.6	0.3%	33.62	0.2%
MW-17	1080.64	28.58	15	NI	NI	28.55	0.2%	28.60	-0.1%	NM	NM	28.60	-0.1%	28.53	0.3%	28.54	0.3%	28.54	0.3%	28.54 ^e	0.3%
MW-18	1077.11	28.54	15	NI	NI	28.50	0.3%	28.50	0.3%	NM	NM	28.50	0.3%	28.50	0.3%	28.5	0.3%	28.51	0.2%	28.59	-0.3%
MW-19	1081.18	33.65	15	NI	NI	33.57	0.5%	33.62	0.2%	NM	NM	33.60	0.3%	33.50	1.0%	33.59	0.4%	33.61	0.3%	33.66	-0.1%
MW-20	1082.07	33.15	15	NI	NI	33.13	0.1%	33.12	0.2%	NM	NM	33.15	0.0%	33.11	0.3%	33.12	0.2%	33.12	0.2%	33.19	-0.3%
MW-21	1074.00	23.17	15	NI	NI	23.15	0.1%	23.53	-2.4%	NM	NM	23.18	-0.1%	23.13	0.3%	23.12	0.3%	23.13	0.3%	23.23	-0.4%
MW-22	1084.71	33.6	15	NI	NI	33.56	0.4%	33.55	0.5%	NM	NM	33.60	0.1%	33.57	0.3%	33.55	0.5%	33.54	0.5%	33.54	0.5%
MW-23	1080.01	28.09	15	NI	NI	28.07	0.1%	28.07	0.1%	NM	NM	28.05	0.3%	28.05	0.3%	28.02	0.5%	28.02	0.5%	28.02	0.5%
MW-24	1078.92	28.41	15	NI	NI	28.39	0.1%	28.39	0.1%	NM	NM	28.40	0.1%	28.38	0.2%	28.34	0.5%	28.37	0.3%	28.37	0.3%
MW-25	1080.09	31.64	15	NI	NI	NI	NI	31.64	0.0%	31.65	-0.1%	NM	NM	31.63	0.1%	31.61	0.2%	31.61	0.2%	31.61	0.2%
MW-26	1078.56	29.80	15	NI	NI	NI	NI	29.80	0.0%	29.80	0.0%	NM	NM	29.78	0.1%	29.76	0.3%	29.78	0.1%	29.79	0.1%
MW-27	1078.17	29.68	15	NI	NI	NI	NI	29.68	0.0%	29.66	0.1%	NM	NM	29.67	0.1%	29.61	0.5%	29.63	0.3%	29.65	0.2%
MW-28	1078.83	30.14	15	NI	NI	NI	NI	30.14	0.0%	30.12	0.1%	NM	NM	30.11	0.2%	30.11	0.2%	30.1	0.3%	30.09	0.3%
MW-29	1078.81	29.77	15	NI	NI	NI	NI	29.77	0.0%	29.77	0.0%	NM	NM	29.76	0.1%	29.75	0.1%	29.72	0.3%	29.75	0.1%
MW-30	1078.73	30.09	15	NI	NI	NI	NI	30.09	0.0%	30.07	0.1%	NM	NM	30.09	0.0%	30.05	0.3%	30.04	0.3%	30.07	0.1%
MW-31	1078.70	29.90	15	NI	NI	NI	NI	29.90	0.0%	29.94	-0.3%	NM	NM	29.92	-0.1%	29.87	0.2%	29.89	0.1%	29.91	-0.1%
MW-32	1078.53	29.76	15	NI	NI	NI	NI	29.76	0.0%	29.77	-0.1%	NM	NM	29.71	0.3%	29.75	0.1%	29.74	0.1%	29.75	0.1%
MW-33	1078.66	30.08	15	NI	NI	NI	NI	30.08	0.0%	30.07	0.1%	NM	NM	30.05	0.2%	30.08	0.0%	30.09	-0.1%	30.08	0.0%
MW-34	1078.85	30.07	15	NI	NI	NI	NI	30.07	0.0%	29.98	0.6%	NM	NM	30.09	-0.1%	30.07	0.0%	30.07	0.0%	30.07	0.0%
MW-35	1078.26	30.10	15	NI	NI	NI	NI	30.10	0.0%	30.12	-0.1%	NM	NM	30.10	0.0%	30.1	0.0%	30.1	0.0%	30.09	0.1%

Table 2.3
Monitoring Well Screen Occlusion Evaluation
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Top of Casing Elevation	Total Well Depth Below Top of Casing (TOC) (feet)	Screen Length (feet)	20-Aug-2018		29-Oct-2018		2-Mar-2020		19-Aug-2020		14-Sep-2020		7-Sep-2021		26-Sep-2022		11-Sep-2023		16-Sep-2024	
				Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded	Measured Well Depth (feet)	Percent Screen Occluded
MW-36	1078.76	30.10	15	NI	NI	NI	NI	30.10	0.0%	30.10	0.0%	NM	NM	30.12	-0.1%	30.1	0.0%	30.1	0.0%	30.10	0.0%
MW-37	1079.16	29.95	15	NI	NI	NI	NI	29.95	0.0%	29.98	-0.2%	NM	NM	29.95	0.0%	29.94	0.1%	29.95	0.0%	29.94	0.1%
MW-38	1079.27	30.50	15	NI	NI	NI	NI	30.50	0.0%	30.50	0.0%	NM	NM	30.51	-0.1%	30.46	0.3%	30.49	0.1%	30.50	0.0%
MW-39	1076.32	27.50	15	NI	NI	NI	NI	27.50	0.0%	27.51	-0.1%	NM	NM	27.50	0.0%	27.5	0.0%	27.51	-0.1%	27.58	-0.5%
MW-40	1079.73	31.25	15	NI	NI	NI	NI	31.25	0.0%	31.25	0.0%	NM	NM	31.26	-0.1%	31.24	0.1%	31.24	0.1%	31.32	-0.5%
MW-41	1079.49	30.86	15	NI	NI	NI	NI	30.86	0.0%	30.88	-0.1%	NM	NM	30.88	-0.1%	30.86	0.0%	30.86	0.0%	30.96	-0.7%
MW-42	1079.85	31.19	15	NI	NI	NI	NI	31.19	0.0%	31.22	-0.2%	NM	NM	31.21	-0.1%	31.19	0.0%	31.18	0.1%	31.27	-0.5%
MW-43	1080.18	31.43	15	NI	NI	NI	NI	31.43	0.0%	31.45	-0.1%	NM	NM	31.40	0.2%	31.41	0.1%	31.41	0.1%	31.40	0.2%
MW-44	1079.03	30.31	15	NI	NI	NI	NI	30.31	0.0%	30.31	0.0%	NM	NM	30.20	0.7%	30.13	1.2%	29.54	5.1%	30.25	0.4%
MW-45	1075.15	25.70	15	NI	NI	NI	NI	25.70	0.0%	25.68	0.1%	NM	NM	25.69	0.1%	25.69	0.1%	25.71	-0.1%	25.80	-0.7%
MW-46	1074.00	26.65	15	NI	NI	NI	NI	26.65	0.0%	26.65	0.0%	NM	NM	26.68	-0.2%	26.64	0.1%	26.65	0.0%	26.74	-0.6%
MW-47	1073.67	26.19	15	NI	NI	NI	NI	26.19	0.0%	26.15	0.3%	NM	NM	26.20	-0.1%	26.15	0.3%	26.12	0.5%	26.25	-0.4%
MW-48	1075.51	26.16	15	NI	NI	NI	NI	26.16	0.0%	26.20	-0.3%	NM	NM	26.25	-0.6%	26.2	-0.3%	26.19	-0.2%	26.27	-0.7%
MW-49	1075.16	26.05	15	NI	NI	NI	NI	26.05	0.0%	26.06	-0.1%	NM	NM	26.05	0.0%	26.06	-0.1%	25.05	6.7%	26.05	0.0%
MW-50	1075.43	26.15	15	NI	NI	NI	NI	26.15	0.0%	26.14	0.1%	NM	NM	26.10	0.3%	26.11	0.3%	26.11	0.3%	26.12	0.2%
MW-51	1075.10	25.30	15	NI	NI	NI	NI	NI	NI	25.30	0.0%	NM	NM	25.41	-0.7%	25.36	-0.4%	25.33	-0.2%	25.34	-0.3%
MW-52	1073.37	25.59	15	NI	NI	NI	NI	NI	NI	25.59	0.0%	NM	NM	25.70	-0.7%	25.69	-0.7%	25.68	-0.6%	25.70	-0.7%
MW-53	1073.35	26.14	15	NI	NI	NI	NI	NI	NI	26.14	0.0%	NM	NM	26.11	0.2%	26.12	0.1%	26.13	0.1%	26.12	0.1%

Notes:
Elevations in feet NAVD88 (North American Vertical Datum 1988).
NI - Well not installed at time of measurement.
NM - Not measured.
% - Percent.
^a Well is screened in deep portion of the alluvial aquifer.
^b Top of casing elevations at MW-5, MW-9, MW-10, MW-12 were changed during 2018 monofill capping project.
MW-5 top of casing elevation changed from 1077.15 to 1080.66 prior to Sept. 4, 2018 gauging event; MW-9 (from 1076.20 to 1079.85) and MW-10 (from 1076.29 to 1080.28) on Oct. 18, 2018.
Monitoring well MW-12 was modified on October 11, 2018; the above grade casing was replaced due to damage, changing the total depth from 34.80 feet to 35.84 feet below TOC.
^c Top of casing elevations at MW-7 and MW-8 were changed on December 6, 2019 as part of monofill closure project. MW-7 top of casing elevation changed from 1078.62 to 1075.98; MW-8 changed from 1078.54 to 1075.78.
^d Top of casing elevation at MW-3 was changed in October 2022 to accommodate apparent settlement of the well pad and allow the hinged lid to properly close. Approximately 4-inches of casing was removed.
^e Total depth measurement collected on December 10, 2024.

Table 2.4

**Appendix III Parameters (Detection Monitoring)
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Analyte	Analytical Method
Boron	EPA 6020A
Calcium	EPA 6020A
Chloride	EPA 9056A
Fluoride	EPA 9056A
pH	SM 4500 H+B
Sulfate	EPA 9056A
Total Dissolved Solids (TDS)	SM 2540C

Table 2.5

**Appendix IV Parameters (Assessment Monitoring)
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Analyte	Analytical Method
Antimony	EPA 6020A
Arsenic	EPA 6020A
Barium	EPA 6020A
Beryllium	EPA 6020A
Cadmium	EPA 6020A
Chromium	EPA 6020A
Cobalt	EPA 6020A
Fluoride	EPA 9056A
Lead	EPA 6020A
Lithium	EPA 6020A
Mercury	EPA 7470A
Molybdenum	EPA 6020A
Selenium	EPA 6020A
Thallium	EPA 6020A
Radium 226 and 228 combined	EPA 9315/9320

Table 2.6

**Summary of Groundwater Monitoring Events
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

	MW-4 (Upgradient)	MW-15 (Upgradient)	MW-2	MW-8	MW-10	MW-11	MW-12	MW-13	MW-14	MW-16 (Upgradient)	MW-17 (Upgradient)	MW-18 (Upgradient)
Sampling Dates												
December 9, 2015	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-
February 29 - March 1, 2016	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-
June 6, 2016	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-
September 19-20, 2016	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-
December 19, 2016	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-
February 20-21, 2017	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-
April 24-25, 2017	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-
July 5, 2017	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	-	-	-
September 11, 2017	Detection	Detection	Detection	Detection	Detection	Detection	Detection	Detection	Detection	-	-	-
January 30, 2018	-	-	-	Verification	Verification	-	Verification	-	-	-	-	-
April 18, 2018	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	-	-	-
August 21, 2018	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	-	-	-
September 4, 2018	-	-	Supplemental	-	Supplemental	-	-	Supplemental	-	-	-	-
September 18, 2018	-	-	Supplemental	-	Supplemental	-	-	Supplemental	-	-	-	-
October 30-31, 2018	-	-	-	-	-	-	-	-	-	Baseline	Baseline	Baseline
November 19-21, 2018	-	-	-	-	-	-	-	-	-	Baseline	Baseline	Baseline
December 3-5, 2018	-	-	Supplemental	-	Supplemental	-	-	-	-	Baseline	Baseline	Baseline
January 3, 2019	-	-	-	-	-	-	-	-	-	Baseline	Baseline	Baseline
January 17, 2019	-	-	Supplemental	-	-	-	-	-	-	Baseline	Baseline	Baseline
January 28, 2019	-	-	-	-	-	-	-	-	-	Baseline	Baseline	Baseline
February 21, 2019	-	-	-	-	-	-	-	-	-	Baseline	Baseline	Baseline
March 7, 2019	-	-	-	-	-	-	-	-	-	Baseline	Baseline	Baseline
March 19-21, 2019	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
April 16-17, 2019	Verification	Verification	Verification	Verification	Verification	Verification	Verification	Verification	Verification	Verification	Verification	Verification
September 10-11, 2019	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
December 11-12, 2019	-	-	Corrective Action	-	Corrective Action	-	-	-	-	-	-	-
March 3-4, 2020	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
July 28-29, 2020	-	-	Corrective Action	-	Corrective Action	-	-	-	-	-	-	-
September 14-16, 2020	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
October 21-22, 2020	-	-	Corrective Action	-	Corrective Action	-	-	-	-	-	-	-
November 16-18, 2020	-	-	Corrective Action	-	Corrective Action	-	-	-	-	-	-	-
March 22-23 and 29, 2021	Assessment	Assessment	Assessment	Assessment	-	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
June 22-23, 2021	-	-	Corrective Action	-	Corrective Action	-	-	-	-	-	-	-
September 8-9, 2021	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
March 21-23, 2022	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
June 1-2, 2022	Verification	-	Verification	-	-	-	Verification	-	Verification	Verification	-	-
September 26-29, 2022	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
March 20-24, 2023 / April 4, 2023	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
June 5, 2023	-	-	-	-	-	-	Verification	-	-	-	-	-
September 5-7, 2023	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
March 11-13, 2024	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
June 3, 2024	-	Verification	-	Verification	-	-	Verification	-	Verification	-	-	-
September 3, 2024	-	-	-	Supplemental	-	-	Supplemental	-	-	-	-	-
September 16-18, 2024	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment
November 13-15, 2024	-	-	-	Supplemental	-	-	-	-	-	-	-	-
December 10-11, 2024	-	-	-	Supplemental	-	-	-	-	-	-	-	-
Number of Samples												
Appendix III Analytes	23	23	23	23	22	23	23	23	23	20	20	20
Appendix IV Analytes	22	22	22	22	21	22	22	22	22	20	20	20

Table 2.6
Summary of Groundwater Monitoring Events
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

	MW-19	MW-20	MW-21	MW-22	MW-23	MW-24	MW-25	MW-26	MW-27	MW-28	MW-29	MW-30
Sampling Dates												
December 9, 2015	-	-	-	-	-	-	-	-	-	-	-	-
February 29 - March 1, 2016	-	-	-	-	-	-	-	-	-	-	-	-
June 6, 2016	-	-	-	-	-	-	-	-	-	-	-	-
September 19-20, 2016	-	-	-	-	-	-	-	-	-	-	-	-
December 19, 2016	-	-	-	-	-	-	-	-	-	-	-	-
February 20-21, 2017	-	-	-	-	-	-	-	-	-	-	-	-
April 24-25, 2017	-	-	-	-	-	-	-	-	-	-	-	-
July 5, 2017	-	-	-	-	-	-	-	-	-	-	-	-
September 11, 2017	-	-	-	-	-	-	-	-	-	-	-	-
January 30, 2018	-	-	-	-	-	-	-	-	-	-	-	-
April 18, 2018	-	-	-	-	-	-	-	-	-	-	-	-
August 21, 2018	-	-	-	-	-	-	-	-	-	-	-	-
September 4, 2018	-	-	-	-	-	-	-	-	-	-	-	-
September 18, 2018	-	-	-	-	-	-	-	-	-	-	-	-
October 30-31, 2018	Characterization	Characterization	Characterization	Characterization	Characterization	Characterization	-	-	-	-	-	-
November 19-21, 2018	Characterization	Characterization	Characterization	Characterization	Characterization	Characterization	-	-	-	-	-	-
December 3-5, 2018	Characterization	Characterization	Characterization	Characterization	Characterization	Characterization	-	-	-	-	-	-
January 3, 2019	-	-	-	-	-	-	-	-	-	-	-	-
January 17, 2019	-	-	-	-	-	-	-	-	-	-	-	-
January 28, 2019	-	-	-	-	-	-	-	-	-	-	-	-
February 21, 2019	-	-	-	-	-	-	-	-	-	-	-	-
March 7, 2019	-	-	-	-	-	-	-	-	-	-	-	-
March 19-21, 2019	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	-	-	-	-	-	-
April 16-17, 2019	Verification	Verification	Verification	Verification	Verification	Verification	-	-	-	-	-	-
September 10-11, 2019	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	-	-	-	-	-	-
December 11-12, 2019	-	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
March 3-4, 2020	Assessment	Assessment	Assessment	-	-	-	-	-	-	-	-	-
July 28-29, 2020	-	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
September 14-16, 2020	Assessment	Assessment	Assessment	-	-	-	-	Corrective Action	-	Corrective Action	-	Corrective Action
October 21-22, 2020	-	-	-	-	-	-	-	Corrective Action	-	Corrective Action	-	Corrective Action
November 16-18, 2020	-	-	-	-	-	-	-	Corrective Action	-	Corrective Action	-	Corrective Action
March 22-23 and 29, 2021	Assessment	Assessment	Assessment	-	-	-	-	Corrective Action	-	Corrective Action	-	Corrective Action
June 22-23, 2021	-	-	-	-	-	-	-	Corrective Action	-	Corrective Action	-	Corrective Action
September 8-9, 2021	Assessment	Assessment	Assessment	-	-	-	-	Corrective Action	-	Corrective Action	-	Corrective Action
March 21-23, 2022	Assessment	Assessment	Assessment	-	-	-	-	Corrective Action	-	Corrective Action	-	Corrective Action
June 1-2, 2022	-	-	Verification	-	-	-	-	-	-	-	-	-
September 26-29, 2022	Assessment	Assessment	Assessment	Assessment	Assessment	Assessment	-	Corrective Action	-	Corrective Action	-	Corrective Action
March 20-24, 2023 / April 4, 2023	Assessment	Assessment	Assessment	-	-	-	-	Corrective Action	-	Corrective Action	-	Corrective Action
June 5, 2023	-	-	-	-	-	-	-	-	-	-	-	-
September 5-7, 2023	Assessment	Assessment	Assessment	-	-	-	-	Corrective Action	-	Corrective Action	-	Corrective Action
March 11-13, 2024	Assessment	Assessment	Assessment	-	-	-	-	Corrective Action	-	Corrective Action	-	Corrective Action
June 3, 2024	-	-	-	-	-	-	-	-	-	-	-	-
September 3, 2024	-	-	-	-	-	-	-	-	-	-	-	-
September 16-18, 2024	Assessment	Assessment	Assessment	-	-	-	-	Corrective Action	-	Corrective Action	-	Corrective Action
November 13-15, 2024	-	-	-	-	-	-	-	-	-	-	-	-
December 10-11, 2024	-	-	-	-	Supplemental	Supplemental	-	-	-	-	-	-
Number of Samples												
Appendix III Analytes	15	15	15	7	7	7	-	-	-	-	-	-
Appendix IV Analytes	15	15	15	7	7	7	-	-	-	-	-	-

Table 2.6

**Summary of Groundwater Monitoring Events
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

	MW-31	MW-32	MW-33	MW-34	MW-35	MW-36	MW-37	MW-38	MW-39	MW-40	MW-41	MW-42
Sampling Dates												
December 9, 2015	-	-	-	-	-	-	-	-	-	-	-	-
February 29 - March 1, 2016	-	-	-	-	-	-	-	-	-	-	-	-
June 6, 2016	-	-	-	-	-	-	-	-	-	-	-	-
September 19-20, 2016	-	-	-	-	-	-	-	-	-	-	-	-
December 19, 2016	-	-	-	-	-	-	-	-	-	-	-	-
February 20-21, 2017	-	-	-	-	-	-	-	-	-	-	-	-
April 24-25, 2017	-	-	-	-	-	-	-	-	-	-	-	-
July 5, 2017	-	-	-	-	-	-	-	-	-	-	-	-
September 11, 2017	-	-	-	-	-	-	-	-	-	-	-	-
January 30, 2018	-	-	-	-	-	-	-	-	-	-	-	-
April 18, 2018	-	-	-	-	-	-	-	-	-	-	-	-
August 21, 2018	-	-	-	-	-	-	-	-	-	-	-	-
September 4, 2018	-	-	-	-	-	-	-	-	-	-	-	-
September 18, 2018	-	-	-	-	-	-	-	-	-	-	-	-
October 30-31, 2018	-	-	-	-	-	-	-	-	-	-	-	-
November 19-21, 2018	-	-	-	-	-	-	-	-	-	-	-	-
December 3-5, 2018	-	-	-	-	-	-	-	-	-	-	-	-
January 3, 2019	-	-	-	-	-	-	-	-	-	-	-	-
January 17, 2019	-	-	-	-	-	-	-	-	-	-	-	-
January 28, 2019	-	-	-	-	-	-	-	-	-	-	-	-
February 21, 2019	-	-	-	-	-	-	-	-	-	-	-	-
March 7, 2019	-	-	-	-	-	-	-	-	-	-	-	-
March 19-21, 2019	-	-	-	-	-	-	-	-	-	-	-	-
April 16-17, 2019	-	-	-	-	-	-	-	-	-	-	-	-
September 10-11, 2019	-	-	-	-	-	-	-	-	-	-	-	-
December 11-12, 2019	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
March 3-4, 2020	-	-	-	-	-	-	-	-	-	-	-	-
July 28-29, 2020	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
September 14-16, 2020	-	Corrective Action	Corrective Action	Corrective Action	-	Corrective Action	-	-	-	-	-	-
October 21-22, 2020	-	Corrective Action	Corrective Action	Corrective Action	-	Corrective Action	-	-	-	-	-	-
November 16-18, 2020	-	Corrective Action	Corrective Action	Corrective Action	-	Corrective Action	-	-	-	-	-	-
March 22-23 and 29, 2021	-	Corrective Action	Corrective Action	Corrective Action	-	Corrective Action	-	-	-	-	-	-
June 22-23, 2021	-	Corrective Action	Corrective Action	Corrective Action	-	Corrective Action	-	-	-	-	-	-
September 8-9, 2021	-	Corrective Action	Corrective Action	Corrective Action	-	Corrective Action	-	-	-	-	-	-
March 21-23, 2022	-	Corrective Action	Corrective Action	Corrective Action	-	Corrective Action	-	-	-	-	-	-
June 1-2, 2022	-	-	-	-	-	-	-	-	-	-	-	-
September 26-29, 2022	-	Corrective Action	Corrective Action	Corrective Action	-	Corrective Action	-	-	-	-	-	-
March 20-24, 2023 / April 4, 2023	-	Corrective Action	Corrective Action	Corrective Action	-	Corrective Action	-	-	-	-	-	-
June 5, 2023	-	-	-	-	-	-	-	-	-	-	-	-
September 5-7, 2023	-	Corrective Action	Corrective Action	Corrective Action	-	Corrective Action	-	-	-	-	-	-
March 11-13, 2024	-	Corrective Action	Corrective Action	Corrective Action	-	Corrective Action	-	-	-	-	-	-
June 3, 2024	-	-	-	-	-	-	-	-	-	-	-	-
September 3, 2024	-	-	-	-	-	-	-	-	-	-	-	-
September 16-18, 2024	-	Corrective Action	Corrective Action	Corrective Action	-	Corrective Action	-	-	-	-	-	-
November 13-15, 2024	-	-	-	-	-	-	-	-	-	-	-	-
December 10-11, 2024	-	-	-	-	-	-	-	-	-	-	-	-
Number of Samples												
Appendix III Analytes	-	-	-	-	-	-	-	-	-	-	-	-
Appendix IV Analytes	-	-	-	-	-	-	-	-	-	-	-	-

Table 2.6
Summary of Groundwater Monitoring Events
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

	MW-43	MW-44	MW-45	MW-46	MW-47	MW-48	MW-49	MW-50	MW-51	MW-52	MW-53
Sampling Dates											
December 9, 2015	-	-	-	-	-	-	-	-	-	-	-
February 29 - March 1, 2016	-	-	-	-	-	-	-	-	-	-	-
June 6, 2016	-	-	-	-	-	-	-	-	-	-	-
September 19-20, 2016	-	-	-	-	-	-	-	-	-	-	-
December 19, 2016	-	-	-	-	-	-	-	-	-	-	-
February 20-21, 2017	-	-	-	-	-	-	-	-	-	-	-
April 24-25, 2017	-	-	-	-	-	-	-	-	-	-	-
July 5, 2017	-	-	-	-	-	-	-	-	-	-	-
September 11, 2017	-	-	-	-	-	-	-	-	-	-	-
January 30, 2018	-	-	-	-	-	-	-	-	-	-	-
April 18, 2018	-	-	-	-	-	-	-	-	-	-	-
August 21, 2018	-	-	-	-	-	-	-	-	-	-	-
September 4, 2018	-	-	-	-	-	-	-	-	-	-	-
September 18, 2018	-	-	-	-	-	-	-	-	-	-	-
October 30-31, 2018	-	-	-	-	-	-	-	-	-	-	-
November 19-21, 2018	-	-	-	-	-	-	-	-	-	-	-
December 3-5, 2018	-	-	-	-	-	-	-	-	-	-	-
January 3, 2019	-	-	-	-	-	-	-	-	-	-	-
January 17, 2019	-	-	-	-	-	-	-	-	-	-	-
January 28, 2019	-	-	-	-	-	-	-	-	-	-	-
February 21, 2019	-	-	-	-	-	-	-	-	-	-	-
March 7, 2019	-	-	-	-	-	-	-	-	-	-	-
March 19-21, 2019	-	-	-	-	-	-	-	-	-	-	-
April 16-17, 2019	-	-	-	-	-	-	-	-	-	-	-
September 10-11, 2019	-	-	-	-	-	-	-	-	-	-	-
December 11-12, 2019	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	-	-	-
March 3-4, 2020	-	-	-	-	-	-	-	-	-	-	-
July 28-29, 2020	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
September 14-16, 2020	Corrective Action	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
October 21-22, 2020	Corrective Action	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
November 16-18, 2020	Corrective Action	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
March 22-23 and 29, 2021	Corrective Action	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
June 22-23, 2021	Corrective Action	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
September 8-9, 2021	Corrective Action	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
March 21-23, 2022	Corrective Action	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
June 1-2, 2022	-	-	-	-	-	-	-	-	-	-	-
September 26-29, 2022	Corrective Action	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
March 20-24, 2023 / April 4, 2023	Corrective Action	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
June 5, 2023	-	-	-	-	-	-	-	-	-	-	-
September 5-7, 2023	Corrective Action	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
March 11-13, 2024	Corrective Action	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
June 3, 2024	-	-	-	-	-	-	-	-	-	-	-
September 3, 2024	-	-	-	-	-	-	-	-	-	-	-
September 16-18, 2024	Corrective Action	-	-	-	-	-	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action
November 13-15, 2024	-	-	-	-	-	-	-	-	-	-	-
December 10-11, 2024	-	-	-	-	-	-	-	-	-	-	-
Number of Samples											
Appendix III Analytes	-	-	-	-	-	-	-	-	-	-	-
Appendix IV Analytes	-	-	-	-	-	-	-	-	-	-	-

Notes:

1. Baseline monitoring events included analysis of both Appendix III (Detection Monitoring) and Appendix IV (Assessment Monitoring) analytes.
2. Detection monitoring events include the analysis of Appendix III (Detection Monitoring) analytes only.
3. Assessment monitoring events included analysis of both Appendix III (Detection Monitoring) and Appendix IV (Assessment Monitoring) analytes.
4. Characterization monitoring events included analysis of select Appendix III (Detection Monitoring) and select Appendix IV (Assessment Monitoring) analytes.
5. Supplemental monitoring events included analysis of analytes to aid in further understanding the geochemical conditions of the aquifer.
6. Corrective Action monitoring events include analysis of arsenic and geochemical indicator parameters for monitoring the performance of the corrective action.

Table 3.1
Groundwater Elevation Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well Identificatio	Top of Casing (feet NAVD88) ^c	Total Depth (feet BTOC)	10/29/2018	11/19/2018	12/3/2018	1/3/2019	1/16/2019	1/29/2019	2/14/2019	2/21/2019	3/7/2019	3/18/2019	4/16/2019	9/9/2019	12/9/2019	1/9/2020	3/2/2020	7/27/2020	8/19/2020	9/14/2020	10/21/2020	11/16/2020
MW-1 ^a	1079.10	56.1	1064.66	1063.95	1063.53	1062.10	1061.43	1060.83	1060.17	1059.97	1059.42	1060.33	1063.56	1064.92	1065.01	1063.14	1060.90	1059.86	1059.07	1059.01	1058.84	1058.61
MW-2	1079.05	30.3	1064.80	1064.10	1063.72	1062.37	1061.71	1061.07	1060.45	1060.24	1059.70	1060.42	1063.63	1065.10	1065.22	1063.41	1061.37	1060.09	1059.35	1059.16	1059.03	1058.84
MW-3 ^a	1076.93	58.5	1065.05	1064.36	1063.94	1062.72	1062.09	1061.52	1060.88	1060.63	1060.16	1061.09	1064.11	1065.21	1065.51	1063.82	1061.48	1060.41	1059.63	1059.54	1059.40	1059.25
MW-4	1077.38	26.7	1065.05	1064.35	1063.94	1062.72	1062.12	1061.52	1060.92	1060.66	1060.20	1061.08	1064.11	1065.18	1065.52	1063.82	1061.50	1060.40	1059.64	1059.51	1059.71	1059.55
MW-5 ^{ab}	1080.66	52.4	1064.96	1064.18	1063.79	1062.58	1061.93	1061.38	1060.70	1060.41	1060.01	1061.24	1064.14	1065.09	1065.27	1063.49	1061.34	1059.71	1059.43	1059.45	1059.35	1059.25
MW-7 ^{ad}	1075.98	47.9	1064.77	1064.00	1063.63	1062.20	1061.58	1061.01	1060.35	1060.14	1059.62	1060.84	1063.94	1065.00	1065.08	1063.13	1061.00	1059.90	1059.08	1059.19	1059.04	1058.92
MW-8 ^d	1075.78	24.7	1064.59	1063.82	1063.44	1062.03	1061.42	1060.82	1060.14	1059.96	1059.42	1060.57	1063.72	1064.94	1065.08	1063.13	1061.00	1059.89	1059.10	1058.92	1059.03	1058.91
MW-9 ^{ab}	1079.85	59.8	1066.53	1063.80	1063.42	1061.71	1061.09	1060.50	1059.82	1059.56	1059.00	1060.52	1063.83	1064.94	1064.92	1062.82	1060.64	1059.60	1058.77	1059.07	1058.76	1058.65
MW-10 ^b	1080.28	29.6	1064.55	1063.80	1063.44	1061.74	1061.10	1060.53	1059.84	1059.60	1059.05	1060.47	1063.79	1064.94	1064.92	1062.80	1060.72	1059.57	1058.77	1059.02	1058.75	1058.62
MW-11	1081.32	37.1	1064.64	1063.94	1063.56	1061.98	1061.33	1060.72	1060.08	1059.85	1059.31	1060.27	1063.62	1065.01	1065.10	1063.09	1060.82	1059.81	1058.87	1059.02	1058.82	1058.63
MW-12 ^b	1087.46	35.8	1064.57	1063.87	1063.49	1061.84	1061.22	1060.65	1060.00	1059.76	1059.19	1060.21	1063.69	1064.95	1064.94	1062.93	1060.71	1059.69	1058.87	1058.98	1058.75	1058.58
MW-13	1085.58	35.1	1064.58	1063.80	1063.42	1061.73	1061.11	1060.55	1059.90	1059.65	1059.08	1060.22	1063.71	1064.93	1064.93	1062.81	1060.62	1059.59	1058.75	1058.97	1058.70	1058.56
MW-14	1081.04	29.8	1064.64	1063.92	1063.51	1061.92	1061.29	1060.68	1060.03	1059.81	1059.27	1060.24	1063.55	1065.01	1065.08	1063.04	1060.83	1059.76	1058.98	1058.97	1058.76	1058.59
MW-15	1076.85	25.2	1065.27	1064.50	1064.08	1062.91	1062.40	1061.68	1061.06	1060.83	1060.31	1061.33	1064.32	1065.24	1065.55	1063.89	1061.60	1060.44	1059.70	1059.60	1059.49	1059.37
MW-16	1082.37	33.7	1064.69	1063.97	1063.57	1061.99	1061.32	1060.77	1060.14	1059.85	1059.30	1060.12	1063.50	1065.00	1065.14	1063.15	1060.71	1059.82	1059.02	1058.93	1059.76	1058.59
MW-17	1080.64	28.6	1065.45	1065.22	1064.97	1064.59	1064.39	1064.16	1063.85	1063.75	1063.47	1063.38	1063.70	1065.68	1065.85	1065.56	1064.42	1063.14	1062.74	1062.27	1061.76	1061.42
MW-18	1077.11	28.5	1065.06	1064.37	1063.94	1063.00	1062.32	1061.71	1061.11	1060.89	1060.51	1061.05	1063.90	1065.18	1065.56	1064.11	1061.82	1060.72	1060.01	1059.70	1059.59	1059.38
MW-19	1081.18	33.7	1064.62	1063.88	1063.50	1061.84	1061.20	1060.63	1059.99	1059.71	1059.20	1060.13	1063.55	1065.00	1065.04	1062.91	1060.77	#N/A	#N/A	1058.91	1058.67	1058.53
MW-20	1082.07	33.2	1064.57	1063.84	1063.46	1061.75	1061.12	1060.56	1059.90	1059.63	1059.11	1060.27	1063.68	1064.87	1064.95	1062.78	1060.65	#N/A	#N/A	1058.94	1058.66	1058.53
MW-21	1074.00	23.2	1064.73	1064.01	1063.62	1061.97	1061.22	1060.61	1059.92	1059.61	1059.13	1061.01	1064.14	1065.24	1065.10	1062.97	1060.74	1059.67	1058.83	1059.18	1058.86	1058.75
MW-22	1084.71	33.6	1064.48	1063.68	1063.31	1061.44	1060.85	1060.26	1059.58	1059.32	1058.76	1059.80	1063.48	1064.90	1064.84	1062.49	1060.44	#N/A	#N/A	1058.71	1058.40	1058.30
MW-23	1080.01	28.1	1064.27	1063.52	1063.12	1060.70	1060.16	1059.65	1058.99	1058.66	1058.09	1060.06	1063.60	1064.85	1064.60	1061.92	1059.94	#N/A	#N/A	1058.57	1058.09	1057.96
MW-24	1078.92	28.4	1064.31	1063.51	1063.13	1060.78	1060.26	1059.74	1059.05	1058.76	1058.19	1060.79	1063.77	1064.86	1064.63	1061.91	1059.99	1058.95	1058.11	1057.71	1058.21	1058.09
MW-25	1080.09	31.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.20	1063.25	1060.94	1059.93	1059.14	1059.06	1058.89	1058.71
MW-26	1078.56	29.8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.25	1063.32	1061.01	1059.97	1059.17	1059.11	1058.94	1058.76
MW-27	1078.17	29.7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.31	1063.51	1061.57	1060.35	1059.50	1059.27	1059.15	1058.92
MW-28	1078.83	30.1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.42	1064.26	1061.73	1060.39	1059.64	1059.39	1059.26	1059.04
MW-29	1078.81	29.8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.33	1063.62	1061.37	1060.26	1059.48	1059.29	1059.16	1058.96
MW-30	1078.73	30.1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.41	1063.59	1061.37	1060.24	1059.49	1059.34	1059.20	1059.01
MW-31	1078.70	29.9	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.36	1063.60	1061.45	1060.34	1059.57	1059.36	1059.26	1059.05

Table 3.1
Groundwater Elevation Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	3/23/2021	6/21/2021	9/7/2021	3/21/2022	6/1/2022	9/26/2022	10/25/2022	12/1/2022	3/20/2023	4/4/2023	6/5/2023	9/5/2023	3/11/2024	6/3/2024	8/19/2024	9/16/2024	11/13/2024	12/10/2024
MW-1 ^a	1054.08	1055.45	1056.65	1054.28	1054.16	1056.92	1057.28	1057.07	1054.46	1055.01	1056.18	1057.98	1055.69	1057.83	1061.32	1060.88	1060.06	1059.23
MW-2	1055.27	1055.59	1056.71	1054.50	1054.28	1057.00	1057.37	1057.23	1054.60	1055.10	1056.29	1058.06	1055.88	1057.90	1061.44	1061.00	1060.22	1059.43
MW-3 ^a	1055.76	1056.00	1057.13	1055.11	1054.68	#N/A	1057.79	1057.64	1055.28	1055.78	1056.84	1058.63	1056.49	1058.37	1061.90	1061.45	1060.64	1059.92
MW-4	1056.07	1056.29	1057.39	1055.43	1055.00	1057.71	1058.08	1057.96	1055.62	1056.08	1057.15	1058.95	1056.85	1058.74	1062.27	1061.76	1060.97	1060.26
MW-5 ^{ab}	1055.66	1055.87	1057.15	1055.01	1054.57	1057.54	1057.98	1057.79	1055.28	#N/A	1056.96	1058.63	1056.58	1058.54	1062.13	1061.62	1060.71	1060.02
MW-7 ^{ad}	1055.24	1055.55	1056.99	1054.51	1054.25	1057.29	1057.72	1057.47	1054.78	#N/A	1056.64	1058.32	1056.05	1058.21	1061.80	1061.30	1060.36	1059.53
MW-8 ^d	1055.23	1055.51	1056.98	1054.51	1054.21	1057.27	1057.72	1057.45	1054.79	#N/A	1056.60	1058.34	1056.06	1058.22	1061.79	1061.30	1060.36	1059.52
MW-9 ^{ab}	1055.04	1055.32	1057.03	1054.05	1054.02	1057.14	1057.60	1057.21	1054.35	#N/A	1056.32	1058.18	1055.54	1058.02	1061.58	1061.08	1060.11	1059.10
MW-10 ^b	1054.95	1055.28	1056.98	1054.02	1053.99	1057.11	1057.55	1057.19	1054.36	#N/A	1056.28	1058.14	1055.53	1057.97	1061.55	1061.06	1060.08	1059.08
MW-11	1054.94	1055.40	1056.75	1054.18	1054.08	1056.99	1057.38	1057.16	1054.33	#N/A	1056.19	1058.02	1055.59	1057.88	1061.39	1060.95	1060.07	1059.18
MW-12 ^b	1054.91	1055.30	1056.82	1054.06	1054.00	1057.01	1057.41	1057.11	1054.27	#N/A	1056.19	1058.01	1055.49	1057.85	1061.44	1060.97	1060.02	1059.10
MW-13	1054.38	1055.23	1056.88	1053.98	1053.95	1057.00	1057.39	1057.07	1054.20	#N/A	1056.16	1058.06	1055.39	1057.79	1061.44	1060.93	1059.98	1059.01
MW-14	1054.93	1055.37	1056.69	1054.14	1054.08	1056.90	1057.28	1057.05	1054.29	#N/A	1056.12	1057.95	1055.53	1057.82	1061.30	1060.86	1060.01	1059.12
MW-15	1055.85	1056.04	1057.23	1055.19	1054.77	1057.61	1058.03	1057.86	1055.44	#N/A	1057.04	1058.79	1056.71	1058.64	1062.07	1061.66	1060.83	1060.10
MW-16	1054.95	1055.39	1056.62	1054.12	1054.06	1056.81	1057.18	1056.92	1054.27	1054.82	1056.04	1057.91	1055.46	1057.74	1061.14	1060.75	1059.92	1059.08
MW-17	1059.59	1058.93	1058.58	1057.94	1057.39	1057.49	1057.59	1057.65	1057.02	1056.94	1056.97	1057.60	1057.36	1057.87	1059.29	1059.61	1059.73	1060.56
MW-18	1056.05	1056.06	1056.90	1055.37	1054.72	1057.14	1057.50	1057.55	1055.28	1055.56	1056.58	1058.27	1056.57	1058.10	1060.71	1061.30	1060.61	1060.01
MW-19	1054.83	1055.33	1056.63	1054.07	1054.00	1056.81	1057.20	1056.92	1054.17	#N/A	#N/A	1057.90	1055.36	1057.70	1061.14	1060.73	1059.90	1059.07
MW-20	1054.77	1055.24	1056.77	1053.98	1053.91	1056.90	1057.33	1057.00	1054.16	#N/A	#N/A	1057.96	1055.32	1057.78	1061.29	1060.84	1059.93	1059.02
MW-21	1054.99	1055.41	1057.25	1054.04	1054.07	1057.26	1057.72	1057.29	1054.35	#N/A	#N/A	1058.28	1055.49	1058.13	1061.66	1061.16	1060.17	1059.03
MW-22	1054.49	1055.07	1056.62	1053.57	1053.73	1056.67	1056.88	1056.69	1053.76	#N/A	#N/A	1057.71	1053.91	1057.53	1060.09	1060.53	1059.65	1058.67
MW-23	1053.99	1054.80	1056.78	1052.91	1053.46	1056.51	1056.89	1056.32	1053.21	#N/A	#N/A	1057.52	1054.20	1057.32	1060.57	1060.16	1059.21	1057.89
MW-24	1054.19	1054.83	1056.98	1053.00	1053.55	1056.72	1057.15	1056.52	1053.42	#N/A	#N/A	1057.70	1054.38	1057.54	1060.86	1060.42	1059.39	1057.94
MW-25	1055.06	1055.50	1056.77	1054.25	1054.15	1056.94	1057.32	#N/A	1054.40	1054.96	#N/A	1058.03	1055.60	#N/A	1061.31	1060.90	#N/A	#N/A
MW-26	1055.06	1055.54	1056.78	1054.30	1054.20	1056.97	1057.35	#N/A	1054.47	1055.01	#N/A	1058.04	1055.68	#N/A	1061.34	1060.93	#N/A	#N/A
MW-27	1055.28	1055.64	1056.76	1054.50	1054.31	1056.95	1057.36	#N/A	1054.59	1055.10	#N/A	1058.03	1055.86	#N/A	1061.39	1061.01	#N/A	#N/A
MW-28	1055.02	1055.76	1056.80	1054.73	1054.43	1057.06	1057.42	#N/A	1054.77	1055.22	#N/A	1058.10	1056.08	#N/A	1061.51	1061.11	#N/A	#N/A
MW-29	1055.43	1055.71	1056.79	1054.75	1054.41	1057.07	1057.45	#N/A	1054.80	1055.22	#N/A	1058.14	1056.06	#N/A	1061.53	1061.13	#N/A	#N/A
MW-30	1055.48	1055.77	1056.85	1054.76	1054.45	1057.14	1057.50	#N/A	1054.86	1055.32	#N/A	1058.23	1056.12	#N/A	1061.60	1061.17	#N/A	#N/A
MW-31	1055.54	1055.77	1056.83	1054.82	1054.45	1057.15	1057.53	#N/A	1054.93	1055.37	#N/A	1058.24	1056.19	#N/A	1061.60	1061.18	#N/A	#N/A

Table 3.1
Groundwater Elevation Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well Identificatio	Top of Casing (feet NAVD88) °	Total Depth (feet BTOC)	10/29/2018	11/19/2018	12/3/2018	1/3/2019	1/16/2019	1/29/2019	2/14/2019	2/21/2019	3/7/2019	3/18/2019	4/16/2019	9/9/2019	12/9/2019	1/9/2020	3/2/2020	7/27/2020	8/19/2020	9/14/2020	10/21/2020	11/16/2020	
			#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
MW-32	1078.53	29.8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.22	1063.32	1061.09	1060.03	1059.22	1059.13	1058.99	1058.77	
MW-33	1078.66	30.1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.19	1063.16	1061.16	1060.13	1059.40	1059.17	1058.86	1058.82	
MW-34	1078.85	30.1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.20	1063.62	1061.08	1060.04	1059.25	1059.14	1059.00	1058.80	
MW-35	1078.26	30.1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.18	1063.35	1061.11	1060.06	1059.29	1059.15	1059.04	1058.84	
MW-36	1078.76	30.1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.18	1063.36	1061.09	1060.05	1059.28	1059.17	1059.05	1058.86	
MW-37	1079.16	30.0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.23	1063.42	1061.15	1060.13	1059.34	1059.22	1059.10	1058.83	
MW-38	1079.27	30.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.25	1063.38	1061.12	1060.09	1059.31	1059.18	1059.05	1058.86	
MW-39	1076.32	27.5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1064.84	1062.65	1060.50	1059.45	1058.62	1058.92	1058.61	1058.51	
MW-40	1079.73	31.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1064.80	1062.66	1060.48	1059.44	1058.60	1058.88	1058.58	1058.47	
MW-41	1079.49	30.9	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1064.83	1062.71	1060.52	1059.51	1058.65	1058.93	1058.62	1058.52	
MW-42	1079.85	31.2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1064.88	1062.78	1060.61	1059.55	1058.73	1058.99	1058.69	1058.58	
MW-43	1080.18	31.4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1064.86	1062.78	1060.62	1059.57	1058.74	1059.02	1058.73	1058.63	
MW-44	1079.03	30.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.16	1064.26	1062.13	1060.85	1060.88	1060.30	1059.98	1059.71	
MW-45	1075.15	25.7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1064.77	1062.55	1060.37	1059.35	1058.50	1058.85	1058.52	1058.39	
MW-46	1074.00	26.7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1064.81	1062.63	1060.40	1059.20	1058.56	1058.91	1058.60	1058.46	
MW-47	1073.22	25.7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1064.79	1062.64	1060.46	1059.40	1058.58	1058.90	1058.57	1058.47	
MW-48	1075.51	26.2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1064.81	1062.69	1060.54	1059.46	1058.64	1058.92	1058.63	1058.53	
MW-49	1075.16	26.1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1064.85	1062.77	1060.60	1059.52	1058.71	1059.01	1058.67	1058.57	
MW-50	1075.43	26.2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1065.06	1064.17	1061.89	1060.60	1060.95	1060.03	1059.79	1059.57	
MW-51	1075.10	25.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1059.71	1058.92	1059.05	1058.78	1058.65	
MW-52	1073.37	25.6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1059.55	1058.72	1058.97	1058.70	1058.61	
MW-53	1073.35	26.1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1059.46	1058.68	1058.94	1058.65	1058.57	
MW-54	1081.59	34.7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
MW-55	1086.40	38.2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
MW-56	1080.97	34.1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
MW-57	1074.37	28.2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
MW-58	1074.93	30.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
MW-59	1075.28	30.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
MW-60	1075.32	30.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
MW-61	1073.15	29.1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
MW-62	1073.97	28.9	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
MW-63	1071.95	25.3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
MW-64	1075.32	27.9	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Table 3.1
Groundwater Elevation Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well Identification	3/23/2021	6/21/2021	9/7/2021	3/21/2022	6/1/2022	9/26/2022	10/25/2022	12/1/2022	3/20/2023	4/4/2023	6/5/2023	9/5/2023	3/11/2024	6/3/2024	8/19/2024	9/16/2024	11/13/2024	12/10/2024
MW-32	1055.00	1055.58	1056.81	1054.35	1054.24	1057.04	1057.40	#N/A	1054.50	1055.07	#N/A	1058.05	1055.74	#N/A	1061.41	1060.99	#N/A	#N/A
MW-33	1054.56	1055.56	1056.77	1054.38	1054.22	1057.03	1057.40	#N/A	1054.54	1055.11	#N/A	1057.97	1055.77	#N/A	1061.47	1061.03	#N/A	#N/A
MW-34	1054.32	1055.56	1056.74	1054.41	1054.24	1057.00	1057.37	#N/A	1054.56	1055.11	#N/A	1058.05	1055.82	#N/A	1061.44	1060.99	#N/A	#N/A
MW-35	1053.21	1055.60	1056.78	1054.49	1053.79	1057.04	1057.41	#N/A	1054.63	1055.18	#N/A	1058.11	1055.89	#N/A	1061.50	1061.04	#N/A	#N/A
MW-36	1054.33	1055.59	1056.77	1054.51	1054.76	1057.05	1057.41	#N/A	1054.61	1055.17	#N/A	1058.10	1055.87	#N/A	1061.52	1061.05	#N/A	#N/A
MW-37	1055.33	1055.67	1056.85	1054.60	1054.36	1057.11	1057.49	#N/A	1054.74	1055.27	#N/A	1058.19	1056.00	#N/A	1061.58	1061.12	#N/A	#N/A
MW-38	1055.25	1055.60	1056.78	1054.47	1054.26	1057.07	1057.43	#N/A	1054.59	1055.16	#N/A	1058.12	1055.86	#N/A	1061.50	1061.06	#N/A	#N/A
MW-39	1054.74	1055.16	1056.90	1053.73	1053.86	1056.96	1057.41	#N/A	1054.13	#N/A	#N/A	1057.98	1055.29	#N/A	1061.42	1060.89	#N/A	#N/A
MW-40	1054.80	1055.13	1056.83	1053.84	1053.83	1056.97	1057.39	#N/A	1054.14	#N/A	#N/A	1057.97	1055.31	#N/A	1061.39	1060.89	#N/A	#N/A
MW-41	1054.81	1055.18	1056.87	1053.91	1053.90	1056.99	1057.42	#N/A	1054.22	#N/A	#N/A	1058.01	1055.38	#N/A	1061.44	1060.94	#N/A	#N/A
MW-42	1054.90	1055.25	1056.93	1054.00	1053.96	1057.05	1057.49	#N/A	1054.30	#N/A	#N/A	1058.08	1055.47	#N/A	1061.49	1061.01	#N/A	#N/A
MW-43	1054.83	1055.28	1056.94	1054.04	1053.97	1057.07	1057.52	#N/A	1054.36	#N/A	#N/A	1058.09	1055.52	#N/A	1061.52	1061.03	#N/A	#N/A
MW-44	1059.28	1056.58	1057.24	1054.27	1054.12	1057.20	1057.60	#N/A	1054.51	#N/A	#N/A	1058.17	1056.41	#N/A	1062.12	1061.71	#N/A	#N/A
MW-45	1054.61	1055.07	1056.91	1053.70	1053.74	1056.92	1057.38	#N/A	1054.01	#N/A	#N/A	1057.94	1055.15	#N/A	1061.32	1060.81	#N/A	#N/A
MW-46	1054.76	1055.12	1056.93	1053.78	1053.81	1056.97	1057.44	#N/A	1054.10	#N/A	#N/A	1057.99	1055.24	#N/A	1061.39	1060.87	#N/A	#N/A
MW-47	1054.76	1055.12	1056.88	1053.81	1053.83	1056.98	1057.43	#N/A	1054.13	#N/A	#N/A	1058.02	1055.30	#N/A	1061.40	1060.89	#N/A	#N/A
MW-48	1054.84	1055.17	1056.90	1053.89	1053.87	1057.01	1057.46	#N/A	1054.20	#N/A	#N/A	1058.03	1055.38	#N/A	1061.45	1060.95	#N/A	#N/A
MW-49	1054.86	1055.22	1056.95	1053.98	1053.91	1057.06	1057.51	#N/A	1054.28	#N/A	#N/A	1058.08	1055.46	#N/A	1061.53	1061.00	#N/A	#N/A
MW-50	1060.41	1058.81	1058.29	1057.84	1057.84	1057.63	1057.73	#N/A	1058.24	#N/A	#N/A	1057.92	1059.11	#N/A	1062.02	1061.55	#N/A	#N/A
MW-51	1054.80	1055.29	1056.87	1054.17	1054.00	1057.08	1057.52	#N/A	1054.42	#N/A	#N/A	1058.08	1055.66	#N/A	1061.83	1061.32	#N/A	#N/A
MW-52	1055.21	1055.29	1056.95	1053.95	1053.88	1057.02	1057.50	#N/A	1054.41	#N/A	#N/A	1058.01	1055.51	#N/A	1061.55	1060.98	#N/A	#N/A
MW-53	1055.15	1055.17	1056.87	1053.95	1053.83	1057.00	1057.47	#N/A	1054.27	#N/A	#N/A	1058.02	1055.47	#N/A	1061.52	1060.98	#N/A	#N/A
MW-54	#N/A	#N/A	#N/A	#N/A	#N/A	1056.86	1057.24	#N/A	1054.15	#N/A	#N/A	1057.86	1055.38	#N/A	1061.28	1060.81	#N/A	1059.00
MW-55	#N/A	#N/A	#N/A	#N/A	#N/A	1056.86	1057.26	#N/A	1054.09	#N/A	#N/A	1057.89	1055.22	#N/A	1061.31	1060.82	#N/A	#N/A
MW-56	#N/A	#N/A	#N/A	#N/A	#N/A	1056.86	1057.24	#N/A	1054.07	#N/A	#N/A	1057.86	1055.31	#N/A	1061.26	1060.78	#N/A	#N/A
MW-57	#N/A	#N/A	#N/A	#N/A	#N/A	1056.72	1057.19	#N/A	1053.94	#N/A	#N/A	1057.79	1055.05	#N/A	1060.63	1060.65	#N/A	#N/A
MW-58	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1060.25	1059.36
MW-59	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1060.25	1059.38
MW-60	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1060.44	1059.61
MW-61	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1060.30	1059.41
MW-62	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1060.41	1059.55
MW-63	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1060.17	1059.23
MW-64	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1060.21	1059.28

Notes:

^a Well is screened in deep portion of the alluvial aquifer.

^b Top of casing elevations at MW-5, MW-9, and MW-10 were changed during 2018 monofill capping project.

MW-5 top of casing elevation changed from 1077.15 to 1080.66 prior to Sept. 4, 2018 gauging event; MW-9 (from 1076.20 to 1079.85) and MW-10 (from 1076.29 to 1080.28) on Oct. 18, 2018.

MW-12 top of casing elevation was changed from 1086.79 to 1087.46 on Oct. 11, 2018.

^c October 2018 survey completed by Snoozy Surveying.

^d Top of casing elevations at MW-7 and MW-8 were changed on December 6, 2019 as part of monofill closure project. MW-7 top of casing elevation changed from 1078.62 to 1075.98; MW-8 changed from 1078.54 to 1075.78.

BTOC - Below top of casing.

NAVD88 - North American Vertical Datum of 1988.

**Horizontal Gradients and Average Linear Groundwater Flow Velocities
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Date	Horizontal Hydraulic Gradient	Average Linear Groundwater Flow Velocity (meters per day)	Average Linear Groundwater Flow Velocity (feet per year)
7-Dec-2015	0.0011	0.008	10
29-Feb-2016	0.0010	0.008	9
6-Jun-2016	0.0009	0.007	9
19-Sep-2016	0.0008	0.006	7
19-Dec-2016	0.0009	0.007	8
20-Feb-2017	0.0008	0.006	7
24-Apr-2017	0.0006	0.005	6
5-Jul-2017	0.0005	0.004	5
11-Sep-2017	0.0006	0.005	5
29-Jan-2018	0.0008	0.006	7
16-Apr-2018	0.0007	0.006	7
20-Aug-2018	0.0009	0.007	8
4-Sep-2018	0.0009	0.007	8
18-Sep-2018	0.0009	0.007	8
29-Oct-2018	0.0003	0.002	2
19-Nov-2018	0.0003	0.002	2
3-Dec-2018	0.0011	0.009	11
9-Jan-2020	0.0006	0.005	6
3-Mar-2020	0.0006	0.004	5
28-Jul-2020	0.0005	0.004	4
19-Aug-2020	0.0005	0.004	5
14-Sep-2020	0.0004	0.003	4
21-Oct-2020	0.0005	0.004	4
16-Nov-2020	0.0005	0.004	5
23-Mar-2021	0.0006	0.005	5
21-Jun-2021	0.0005	0.004	4
7-Sep-2021	0.0003	0.002	2
21-Mar-2022	0.0007	0.006	7
1-Jun-2022	0.0005	0.004	4
26-Sep-2022	0.0004	0.003	3
1-Dec-2022	0.0005	0.004	4
20-Mar-2023	0.0007	0.006	7
5-Jun-2023	0.0005	0.004	5
5-Sep-2023	0.0005	0.004	5
11-Mar-2024	0.0008	0.006	7
3-Jun-2024	0.0005	0.004	5
16-Sep-2024	0.0004	0.003	4

Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Date	Appendix III Parameters						
		Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
MW-2	12/09/2015	0.780	287	6.47	0.500 U	6.88 J	360	1280
MW-2	03/01/2016	1.13	185	13.5	0.500 U	6.99 J	182	864
MW-2	06/06/2016	1.33	200	5.99	0.500 U	6.74 J	178	848 J
MW-2	09/20/2016	1.11	171	11.5	0.500 U	7.2 J	98.3	760
MW-2	12/19/2016	1.32	167	8.57	0.500 U	7.0 J	105	768
MW-2	02/20/2017	0.815	158	7.08	0.500 U	7.0 J	70.0	734
MW-2	04/25/2017	0.200 U	125	28.0	1.24	7.2 J	49.9	588
MW-2	07/05/2017	0.200 U	134	20.4	0.500 U	7.1 J	48.0	1390
MW-2	09/11/2017	0.583	151	12.1	0.500 U	7.0 J	82.3	740
MW-2	04/18/2018	0.216	141	30.1 J	0.500 U	7.1 J	51.2 J	566
MW-2	08/21/2018	0.243	140	16.5	0.100 U	7.4 J	52.7	590
MW-2	03/19/2019	0.268	135	14.0	0.500 U	7.1 J	35.5	596
MW-2	09/11/2019	0.496	144	9.40	0.500 U	7.2 J	54.3	642
MW-2	09/11/2019 (Duplicate)	0.546	147	9.20	0.500 U	7.1 J	55.2	646
MW-2	03/04/2020	1.23	164	7.05	0.500 U	7.3 J	70.6	696
MW-2	03/04/2020 (Duplicate)	1.25	158	6.18	0.500 U	6.9 J	68.3	680
MW-2	09/15/2020	0.663	172	8.45	0.500 U	7.0 J	77.5	756
MW-2	09/15/2020 (Duplicate)	0.642	167	8.28	0.500 U	7.2 J	77.1	738
MW-4	12/09/2015	3.30	366	18.3	0.500 U	6.87 J	996	2340
MW-4	03/01/2016	3.49	252	5.00 U	0.500 U	7.00 J	628	1830
MW-4	06/06/2016	2.32	324	15.2	0.500 U	6.73 J	852	1960 J
MW-4	09/20/2016	1.49	378	20.1	0.500 U	6.8 J	975	2310
MW-4	12/19/2016	1.32	323	18.7	0.500 U	6.9 J	844	2570
MW-4	02/20/2017	1.34	307	16.2	0.500 U	6.8 J	839	2220
MW-4	04/24/2017	0.972	279	15.8	0.500 U	6.9 J	681	1730
MW-4	07/05/2017	1.05	265	17.3	0.500 U	7.0 J	721	1760
MW-4	09/11/2017	0.898	245	18.6	0.500 U	6.9 J	608	1860
MW-4	04/18/2018	0.855	208	19.2 J	0.500 U	6.9 J	494 J	1190
MW-4	08/21/2018	0.397	128	17.0	0.100 U	7.3 J	262	850
MW-4	03/19/2019	0.926	197	29.3	0.500 U	6.9 J	496	1390
MW-4	09/11/2019	0.528	202	32.5	0.500 U	7.2 J	410	1210
MW-4	03/03/2020	0.848	199	41.5	0.500 U	7.3 J	409	1190
MW-4	09/14/2020	0.335	127	47.2	0.500 U	7.0 J	167	712
MW-8	12/09/2015	3.44	212	5.07	0.500 U	7.08 J	694	1590
MW-8	02/29/2016	4.01	204	5.90	0.500 U	7.23 J	734	1700
MW-8	06/06/2016	1.23	213	5.00 U	0.500 U	7.04 J	313	1060 J
MW-8	09/19/2016	4.91	187	5.00 U	0.500 U	7.4 J	803	1730
MW-8	12/19/2016	5.38	198	5.00 U	0.500 U	7.3 J	819	1790
MW-8	02/21/2017	4.00	190	8.69	2.31	7.2 J	690	1810
MW-8	04/24/2017	0.712	196	5.30	0.500 U	7.2 J	224	1160
MW-8	07/05/2017	0.703	167	5.00 U	0.500 U	7.1 J	169	1000
MW-8	09/11/2017	2.80	208	5.60	0.500 U	7.2 J	489	1610
MW-8	04/18/2018	0.999	171	8.23 J	0.500 U	7.1 J	190 J	870
MW-8	08/21/2018	1.14	153	4.80	0.100 U	7.3 J	198	920
MW-8	03/18/2019	2.47	163	7.19	0.500 U	7.2 J	375	1200
MW-8	09/10/2019	1.61	159	6.70	0.500 U	7.3 J	246	974
MW-8	03/03/2020	2.71	150	13.3	0.500 U	7.5 J	469	1120
MW-8	09/15/2020	3.14	161	7.99	0.500 U	7.3 J	349	1100
MW-10	12/09/2015	2.24	174	5.00 U	3.43	6.94 J	264	1130
MW-10	02/29/2016	2.13	174	5.00 U	0.500 U	7.02 J	250	1080
MW-10	06/06/2016	1.64	181	5.02	0.500 U	6.92 J	189	988 J
MW-10	09/19/2016	0.953	162	5.59	0.500 U	7.3 J	98.2	948
MW-10	12/19/2016	0.938	146	24.8	6.47	7.2 J	36.8	948
MW-10	02/21/2017	0.585	146	11.3	2.95	7.2 J	14.3	836
MW-10	04/24/2017	0.515	152	7.81	0.500 U	7.2 J	55.4	1150
MW-10	07/05/2017	0.271	154	5.00 U	0.500 U	7.3 J	134	1050
MW-10	09/11/2017	0.336	152	5.77	0.500 U	7.3 J	64.1	1040
MW-10	04/18/2018	0.530	159	7.15 J	0.500 U	7.1 J	128 J	832
MW-10	08/21/2018	2.15	148	3.23	0.100 U	7.3 J	267	1000
MW-10	08/21/2018 (Duplicate)	2.18	153	3.23	0.100 U	7.2 J	246	1060
MW-10	03/18/2019	0.361	155	6.92	1.99	7.4 J	171	922
MW-10	09/11/2019	0.633	140	5.00 U	0.500 U	7.3 J	136	894
MW-10	03/03/2020	0.553	142	5.00 U	0.500 U	7.4 J	131	864
MW-10	03/03/2020 (Duplicate)	0.505	144	5.00 U	0.500 U	7.2 J	122	868

Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Date	Appendix III Parameters						
		Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
MW-10	09/15/2020	0.611	166	6.00	0.500 U	7.3 J	149	984
MW-11	12/09/2015	0.697	225	12.9	0.500 U	6.93 J	303	1180
MW-11	12/09/2015 (Duplicate)	0.722	222	14.5	0.500 U	7.00 J	301	1170
MW-11	03/01/2016	0.322	243	7.24	0.500 U	7.02 J	315	1140
MW-11	03/01/2016 (Duplicate)	0.368	237	6.37	0.500 U	7.02 J	323	1190
MW-11	06/06/2016	0.221 J	238	37.5	0.500 U	6.88 J	240	1070 J
MW-11	06/06/2016 (Duplicate)	0.688 J	255	40.6	0.500 U	6.71 J	249	1100 J
MW-11	09/20/2016	0.602	279	16.8	0.500 U	7.1 J	352	1300
MW-11	09/20/2016 (Duplicate)	0.583	272	17.8	0.500 U	7.3 J	349	1260
MW-11	12/19/2016	0.524	264	20.0 U	2.00 U	7.3 J	309	1200
MW-11	12/19/2016 (Duplicate)	0.504	237	19.1	0.500 U	7.0 J	326	1190
MW-11	02/20/2017	0.268	243	7.39 J	1.20 J	7.0 J	340	1210
MW-11	02/20/2017 (Duplicate)	0.328	240	21.0 J	8.89 J	7.0 J	339	1180
MW-11	04/25/2017	0.238	239	11.2	2.11 J	6.9 J	321	1470
MW-11	04/25/2017 (Duplicate)	0.258	251	12.1	3.30 J	7.0 J	330	1300
MW-11	07/05/2017	0.243	225	6.10	0.500 U	7.0 J	339	1210
MW-11	07/05/2017 (Duplicate)	0.241	218	5.91	0.500 U	7.1 J	354	1280
MW-11	09/11/2017	0.431	252	8.91	0.500 U	7.0 J	368	1350
MW-11	09/11/2017 (Duplicate)	0.477	246	8.54	0.500 U	6.9 J	370	1310
MW-11	04/18/2018	0.441	255	5.85 J	0.500 U	7.0 J	427 J	1190
MW-11	04/18/2018 (Duplicate)	0.470	253	5.00 U	0.500 U	7.2 J	435 J	1300
MW-11	08/21/2018	0.492	233	16.0	0.100 U	7.1 J	450	1340
MW-11	03/18/2019	0.455	210	17.2	0.501	7.0 J	406	1190
MW-11	03/18/2019 (Duplicate)	0.368	226	16.0	0.500 U	6.9 J	410	1210
MW-11	09/10/2019	0.797	265	122	0.500 U	7.0 J	321	1340
MW-11	03/04/2020	1.28	264	149	0.500 U	7.2 J	312	1340
MW-11	09/15/2020	0.585	251	11.0	0.500 U	7.6 J	397	1280
MW-12	12/09/2015	3.86	199	143	0.500 U	7.05 J	457	1460
MW-12	03/01/2016	5.14	235	149	0.500 U	7.09 J	511	1730
MW-12	06/06/2016	4.78	287	303	0.500 U	7.03 J	524	1590 J
MW-12	09/19/2016	4.81	225	86.3	0.500 U	7.2 J	526	1440
MW-12	12/19/2016	5.25	209	152	21.0	7.1 J	563	1800
MW-12	02/20/2017	5.39	199	42.1	1.78	7.1 J	585	1600
MW-12	04/25/2017	5.12	193	29.2	1.85	7.0 J	626	1960
MW-12	07/05/2017	1.94	186	10.2	0.500 U	7.1 J	446	1360
MW-12	09/11/2017	4.34	233	180	0.500 U	7.1 J	508	1990
MW-12	04/18/2018	2.40	208	18.8 J	0.500 U	7.1 J	514 J	1220
MW-12	08/21/2018	1.42	165	44.3	0.100 U	7.2 J	288	1040
MW-12	03/18/2019	4.28	184	118	0.500 U	7.1 J	504	1340
MW-12	09/10/2019	1.23	197	27.2	0.500 U	7.2 J	357	1110
MW-12	03/04/2020	2.85	217	248	0.500 U	7.4 J	274	1350
MW-12	09/15/2020	3.52	223	333	0.500 U	7.5 J	245	1390
MW-13	12/09/2015	0.694	230	6.18	0.500 U	6.90 J	352	1220
MW-13	03/01/2016	0.726	258	5.00 U	0.500 U	6.98 J	364	1280
MW-13	06/06/2016	0.200 U	194	13.1	0.775	6.91 J	484	1500 J
MW-13	09/19/2016	1.60	262	15.7	0.500 U	7.1 J	344	1270
MW-13	12/19/2016	1.33	239	54.9	8.21	7.1 J	324	1140
MW-13	02/20/2017	1.21	264	18.1	0.848	7.0 J	451	1330
MW-13	04/25/2017	0.747	230	17.6	1.89	6.9 J	461	1210
MW-13	07/05/2017	1.26	245	17.5	0.500 U	7.0 J	524	1590
MW-13	09/11/2017	1.19	286	21.3	0.500 U	6.9 J	485	1770
MW-13	04/18/2018	1.29	284	12.3 J	0.500 U	6.9 J	536 J	1250
MW-13	08/21/2018	1.37	175	9.24	0.100 U	7.2 J	543	1410
MW-13	03/18/2019	1.30	267	16.0	0.500 U	7.0 J	618	1380
MW-13	09/10/2019	1.15	203	9.29	0.500 U	7.2 J	495	1200
MW-13	03/04/2020	1.00	290	18.4	0.500 U	7.3 J	597	1640
MW-13	09/15/2020	1.58	231	48.6	0.500 U	7.6 J	469	1450
MW-14	12/09/2015	1.19	263	6.40	0.500 U	6.80 J	386	1370
MW-14	03/01/2016	1.11	256	5.00 U	0.500 U	6.91 J	346	1280
MW-14	06/06/2016	0.593	246	5.66	0.500 U	6.87 J	311	1160 J
MW-14	09/20/2016	1.47	246	5.47	0.500 U	7.0 J	324	1300
MW-14	12/19/2016	1.05	301	5.00 U	0.500 U	6.9 J	274	1810
MW-14	02/20/2017	0.883	270	8.67	2.17	6.9 J	428	1600
MW-14	04/25/2017	0.343	235	23.2	14.9	6.9 J	277	1220

Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Date	Appendix III Parameters						
		Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
MW-14	07/05/2017	0.281	198	8.21	3.01	6.9 J	220	1030
MW-14	09/11/2017	1.36	238	5.00 U	0.500 U	7.0 J	357	1420
MW-14	04/18/2018	0.322	231	5.00 U	0.500 U	7.0 J	279 J	1000
MW-14	08/21/2018	0.312	198	4.32	0.100 U	7.8 J	278	1100
MW-14	03/19/2019	0.855	224	5.77	0.500 U	7.0 J	239	1020
MW-14	09/10/2019	1.01	200	29.6	0.500 U	7.0 J	218	1060
MW-14	03/04/2020	2.64	193	54.2	0.500 U	7.3 J	252	1310
MW-14	09/15/2020	2.41	213	32.4	0.500 U	7.4 J	260	1300
MW-15	12/09/2015	2.88	188	8.00	0.500 U	6.80 J	501	1580
MW-15	02/29/2016	2.92	196	7.87	0.500 U	6.93 J	515	1560
MW-15	06/06/2016	2.31	231	8.63	0.500 U	6.78 J	642	1580 J
MW-15	09/19/2016	2.69	256	5.00 U	0.500 U	6.9 J	520	1570
MW-15	12/19/2016	3.05	264	5.87	0.500 U	7.0 J	507	1970
MW-15	02/21/2017	2.88	244	9.35	1.90	6.9 J	538	2000
MW-15	04/24/2017	1.72	212	14.8	0.913	6.9 J	316	1310
MW-15	07/05/2017	1.33	187	16.7	0.500 U	6.9 J	293	1020
MW-15	09/11/2017	2.58	195	10.5	0.500 U	6.9 J	422	1370
MW-15	04/18/2018	1.31	190	19.6 J	0.500 U	6.9 J	297 J	876
MW-15	08/21/2018	0.670	117	19.0	0.185	7.2 J	187	640
MW-15	03/18/2019	1.83	159	17.3	0.500 U	7.0 J	403	1180
MW-15	09/11/2019	0.386	130	19.9	0.500 U	7.2 J	186	694
MW-15	03/04/2020	2.02	200	13.5	0.500 U	7.2 J	437	1350
MW-15	09/15/2020	1.01	189	19.2	0.500 U	7.3 J	313	1000
MW-16	10/30/2018	0.200 U	143	2.47	0.241	7.1 J	67.7	636
MW-16	10/30/2018	(Duplicate) 0.202	164	2.50	0.239	7.1 J	68.4	638
MW-16	11/20/2018	0.200 U	117	5.00 U	0.500 U	7.4 J	72.8	660
MW-16	12/04/2018	0.183	155	1.87	0.280	7.3 J	80.8	618
MW-16	01/03/2019	0.200 U	151	5.00 U	0.500 U	7.3	79.4	630
MW-16	01/16/2019	0.200 U	112	5.00 U	0.500 U	7.3 J	78.4	624
MW-16	01/28/2019	0.200 U	163	5.00 U	0.500 U	7.2 J	74.3	628
MW-16	02/21/2019	0.200 U	153	5.00 U	0.500 U	7.2 J	73.1	632
MW-16	03/07/2019	0.212	166	5.00 U	0.500 U	7.0 J	70.2	618
MW-16	03/20/2019	0.214	160	5.63	0.590	7.1 J	35.8	644
MW-16	09/10/2019	0.200 U	142	5.00 U	0.500 U	7.1 J	56.9	30.0 U
MW-16	03/04/2020	0.233	139	5.68	0.500 U	7.0 J	50.7	542
MW-16	09/15/2020	0.216	134	5.66	0.500 U	7.8 J	40.4	632
MW-17	10/30/2018	0.200 U	143	16.5	0.217	7.1 J	68.1	654
MW-17	11/20/2018	0.200 U	142	18.9	0.500 U	7.2 J	62.4	674
MW-17	12/04/2018	0.191	148	22.5	0.267	7.2 J	68.0	638
MW-17	01/03/2019	0.200 U	148	17.9	0.500 U	7.3	61.7	654
MW-17	01/16/2019	0.206	119	18.0	0.500 U	7.1 J	64.0	656
MW-17	01/28/2019	0.221	171	17.5	0.500 U	7.3 J	61.4	654
MW-17	02/21/2019	0.238	173	14.5	0.500 U	7.3 J	67.3	740
MW-17	03/07/2019	0.253	198	13.3	0.500 U	7.1 J	72.8	680
MW-17	03/21/2019	0.208	175	14.9	0.527	7.2 J	76.3	726
MW-17	09/10/2019	0.200 U	166	14.1	0.500 U	7.3 J	66.9	732
MW-17	03/03/2020	0.236	163	5.00 U	0.500 U	6.9 J	70.6	716
MW-17	09/14/2020	0.243	181	13.0	0.500 U	7.8 J	93.7	764
MW-18	10/31/2018	0.266	167	5.00 U	0.500 U	7.0 J	79.6	716
MW-18	11/20/2018	0.200 U	150	5.00 U	0.500 U	7.1 J	77.7	728
MW-18	11/20/2018	(Duplicate) 0.222	165	5.00 U	0.500 U	7.1 J	78.2	708
MW-18	12/04/2018	0.225	162	2.74	0.324	7.1 J	81.7	748
MW-18	12/04/2018	(Duplicate) 0.240	165	2.96	0.348	7.1 J	82.4	754
MW-18	01/03/2019	0.200 U	162	5.00 U	0.500 U	7.3	75.9	694
MW-18	01/03/2019	(Duplicate) 0.200 U	166	5.00 U	0.500 U	7.3 J	73.9	688
MW-18	01/16/2019	0.209	122	5.00 U	0.500 U	7.0 J	80.8	706
MW-18	01/16/2019	(Duplicate) 0.208	131	5.00 U	0.500 U	7.2 J	79.6	722
MW-18	01/28/2019	0.238	187	5.00 U	0.500 U	7.2 J	77.3	788
MW-18	01/28/2019	(Duplicate) 0.238	175	5.00 U	0.500 U	7.3 J	77.7	786
MW-18	02/21/2019	0.258	170	5.00 U	0.500 U	7.4 J	87.2	804
MW-18	02/21/2019	(Duplicate) 0.216	178	5.00 U	0.500 U	7.2 J	86.5	912
MW-18	03/07/2019	0.290	182	5.00 U	0.500 U	6.9 J	85.0	732
MW-18	03/07/2019	(Duplicate) 0.215	164	5.00 U	0.500 U	7.0 J	87.0	756

Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Date	Appendix III Parameters						
		Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
MW-18	03/21/2019	0.200 U	151	5.00 U	0.594	7.1 J	79.9	720
MW-18	03/21/2019	0.233	174	5.00 U	0.584	7.1 J	81.6	692
MW-18	09/10/2019	0.210	166	5.00 U	0.500 U	7.1 J	83.2	808
MW-18	03/03/2020	0.230	180	11.4	0.500 U	7.0 J	75.7	748
MW-18	09/14/2020	0.211	167	5.00 U	0.500 U	7.5 J	77.2	768
MW-19	10/30/2018	0.318	254	5.44	0.392	6.9 J	289	1150
MW-19	11/19/2018	0.272	186	5.51	0.500 U	6.9 J	298	1130
MW-19	12/03/2018	0.310	229	5.40	0.289	6.9 J	306	1180
MW-19	03/18/2019	0.272	197	11.6	1.78	7.0 J	278	1010
MW-19	09/11/2019	0.305	257	7.40	0.500 U	6.9 J	391	1330
MW-19	09/11/2019	0.300	256	7.36	0.500 U	6.9 J	391	1290
MW-19	03/02/2020	0.318	210	9.47	0.500 U	6.8 J	287	1040
MW-19	09/14/2020	0.230	173	10.4	0.500 U	7.5 J	253	936
MW-20	10/30/2018	0.812	179	19.4	0.233	7.1 J	184	808
MW-20	11/19/2018	0.516	144	11.1	0.500 U	7.3 J	151	716
MW-20	12/03/2018	0.637	149	7.58	0.227	7.1 J	146	674
MW-20	03/18/2019	1.04	180	23.8	0.500 U	7.1 J	236	908
MW-20	09/11/2019	0.527	143	5.00 U	0.500 U	7.2 J	112	624
MW-20	03/02/2020	0.665	141	5.00 U	0.500 U	7.0 J	106	632
MW-20	09/14/2020	0.566	131	5.00 U	0.500 U	7.6 J	103	628
MW-21	10/30/2018	0.225	154	4.36	0.215	6.9 J	37.4	574
MW-21	11/19/2018	0.200 U	149	5.00 U	0.500 U	7.0 J	41.0	568
MW-21	12/04/2018	0.194	154	3.68	0.325	7.0 J	38.3	626
MW-21	03/18/2019	0.200 U	151	5.36	0.500 U	7.1 J	59.6	560
MW-21	09/10/2019	0.200 U	140	7.82	0.500 U	7.0 J	51.6	544
MW-21	03/03/2020	0.200 U	136	8.61	0.500 U	7.1 J	64.4	552
MW-21	09/15/2020	0.165	140	7.89	0.500 U	7.7 J	74.8	552

**Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Well	Date	Appendix IV Parameters				
		Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L
MW-2	12/09/2015	0.00100 U	0.0509	0.193	0.00100 U	0.000500 U
MW-2	03/01/2016	0.00100 U	0.0632	0.130	0.00100 U	0.000500 U
MW-2	06/06/2016	0.00100 U	0.0694	0.136	0.00100 U	0.000500 U
MW-2	09/20/2016	0.00100 U	0.0539	0.125	0.00100 U	0.000500 U
MW-2	12/19/2016	0.00100 U	0.0720	0.129	0.00100 U	0.000500 U
MW-2	02/20/2017	0.00100 U	0.0386	0.137	0.00100 U	0.000500 U
MW-2	04/25/2017	0.00100 U	0.0214	0.137	0.00100 U	0.000500 U
MW-2	07/05/2017	0.00100 U	0.0156	0.159	0.00100 U	0.000500 U
MW-2	09/11/2017	--	--	--	--	--
MW-2	04/18/2018	0.00100 U	0.0210	0.173	0.00100 U	0.000500 U
MW-2	08/21/2018	--	0.0201	0.198	--	--
MW-2	03/19/2019	0.00100 U	0.230 J / 0.108 J	0.222	0.00100 U	0.000500 U
MW-2	09/11/2019	0.00100 U	0.0483	0.184	0.00100 U	0.000100 U
MW-2	09/11/2019 (Duplicate)	0.00100 U	0.0474	0.192	0.00100 U	0.000100 U
MW-2	03/04/2020	0.00100 U	0.0580	0.203	0.00100 U	0.000100 U
MW-2	03/04/2020 (Duplicate)	0.00100 U	0.0514	0.196	0.00100 U	0.000100 U
MW-2	09/15/2020	--	0.119	0.217	--	0.000100 U
MW-2	09/15/2020 (Duplicate)	--	0.112	0.210	--	0.000100 U
MW-4	12/09/2015	0.00100 U	0.00200 U	0.0275	0.00100 U	0.000500 U
MW-4	03/01/2016	0.00100 U	0.00200 U	0.0245	0.00100 U	0.000500 U
MW-4	06/06/2016	0.00100 U	0.00200 U	0.0374	0.00100 U	0.000500 U
MW-4	09/20/2016	0.00100 U	0.00200 U	0.0364	0.00100 U	0.000500 U
MW-4	12/19/2016	0.00100 U	0.00200 U	0.0355	0.00100 U	0.000500 U
MW-4	02/20/2017	0.00100 U	0.00200 U	0.0334	0.00100 U	0.000500 U
MW-4	04/24/2017	0.00100 U	0.00200 U	0.0364	0.00100 U	0.000500 U
MW-4	07/05/2017	0.00100 U	0.00200 U	0.0353	0.00100 U	0.000500 U
MW-4	09/11/2017	--	--	--	--	--
MW-4	04/18/2018	0.00100 U	0.00200 U	0.0376	0.00100 U	0.000500 U
MW-4	08/21/2018	--	0.00200 U	0.0325	--	--
MW-4	03/19/2019	0.00100 U	0.00200 U	0.0338	0.00100 U	0.000500 U
MW-4	09/11/2019	0.00100 U	0.00200 U	0.0444	0.00100 U	0.000100 U
MW-4	03/03/2020	0.00100 U	0.00200 U	0.0389	0.00100 U	0.000100 U
MW-4	09/14/2020	--	0.00200 U	0.0391	--	0.000100 U
MW-8	12/09/2015	0.00100 U	0.00200 U	0.111	0.00100 U	0.000500 U
MW-8	02/29/2016	0.00100 U	0.00200 U	0.0862	0.00100 U	0.000500 U
MW-8	06/06/2016	0.00100 U	0.00200 U	0.0926	0.00100 U	0.000500 U
MW-8	09/19/2016	0.00100 U	0.00200 U	0.0731	0.00100 U	0.000500 U
MW-8	12/19/2016	0.00100 U	0.00200 U	0.0736	0.00100 U	0.000500 U
MW-8	02/21/2017	0.00100 U	0.00200 U	0.0596	0.00100 U	0.000500 U
MW-8	04/24/2017	0.00100 U	0.00200 U	0.0751	0.00100 U	0.000500 U
MW-8	07/05/2017	0.00100 U	0.00200 U	0.0778	0.00100 U	0.000500 U
MW-8	09/11/2017	--	--	--	--	--
MW-8	04/18/2018	0.00100 U	0.00200 U	0.0714	0.00100 U	0.000500 U
MW-8	08/21/2018	--	0.00200 U	0.0782	--	--
MW-8	03/18/2019	0.00100 U	0.00200 U	0.0705	0.00100 U	0.000500 U
MW-8	09/10/2019	0.00100 U	0.00200 U	0.0819	0.00100 U	0.000100 U
MW-8	03/03/2020	0.00100 U	0.00200 U	0.0697	0.00100 U	0.000100 U
MW-8	09/15/2020	--	0.00200 U	0.0791	--	0.000100 U
MW-10	12/09/2015	0.00100 U	0.00312	0.179	0.00100 U	0.000500 U
MW-10	02/29/2016	0.00100 U	0.00551	0.208	0.00100 U	0.000500 U
MW-10	06/06/2016	0.00100 U	0.00200 U	0.111	0.00100 U	0.000500 U
MW-10	09/19/2016	0.00100 U	0.00489	0.255	0.00100 U	0.000500 U
MW-10	12/19/2016	0.00100 U	0.00938	0.276	0.00100 U	0.000500 U
MW-10	02/21/2017	0.00100 U	0.0165	0.399	0.00100 U	0.000500 U
MW-10	04/24/2017	0.00100 U	0.0192	0.569	0.00100 U	0.000500 U
MW-10	07/05/2017	0.00100 U	0.0136	0.618	0.00100 U	0.000500 U
MW-10	09/11/2017	--	--	--	--	--
MW-10	04/18/2018	0.00100 U	0.0251	0.416	0.00100 U	0.000500 U
MW-10	08/21/2018	--	0.00388	0.138	--	--
MW-10	08/21/2018 (Duplicate)	--	0.00359	0.138	--	--
MW-10	03/18/2019	0.00100 U	0.0302 J	0.486	0.00100 U	0.000500 U
MW-10	09/11/2019	0.00100 U	0.0121	0.325	0.00100 U	0.000100 U
MW-10	03/03/2020	0.00100 U	0.0531	0.463	0.00100 U	0.000100 U
MW-10	03/03/2020 (Duplicate)	0.00100 U	0.0533	0.472	0.00100 U	0.000100 U

**Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Well	Date	Appendix IV Parameters				
		Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L
MW-10	09/15/2020	--	0.0622	0.505	--	0.000100 U
MW-11	12/09/2015	0.00100 U	0.00200 U	0.0853	0.00100 U	0.000500 U
MW-11	12/09/2015 (Duplicate)	0.00100 U	0.00200 U	0.0864	0.00100 U	0.000500 U
MW-11	03/01/2016	0.00100 U	0.00200 U	0.0651	0.00100 U	0.000500 U
MW-11	03/01/2016 (Duplicate)	0.00100 U	0.00200 U	0.0757	0.00100 U	0.000500 U
MW-11	06/06/2016	0.00100 U	0.00200 U	0.121	0.00100 U	0.000500 U
MW-11	06/06/2016 (Duplicate)	0.00100 U	0.00200 U	0.0752	0.00100 U	0.000500 U
MW-11	09/20/2016	0.00100 U	0.00200 U	0.0827	0.00100 U	0.000500 U
MW-11	09/20/2016 (Duplicate)	0.00100 U	0.00200 U	0.0795	0.00100 U	0.000500 U
MW-11	12/19/2016	0.00100 U	0.00200 U	0.0835	0.00100 U	0.000500 U
MW-11	12/19/2016 (Duplicate)	0.00100 U	0.00200 U	0.0767	0.00100 U	0.000500 U
MW-11	02/20/2017	0.00100 U	0.00200 U	0.0703	0.00100 U	0.000500 U
MW-11	02/20/2017 (Duplicate)	0.00100 U	0.00200 U	0.0695	0.00100 U	0.000500 U
MW-11	04/25/2017	0.00100 U	0.00200 U	0.0808	0.00100 U	0.000500 U
MW-11	04/25/2017 (Duplicate)	0.00100 U	0.00200 U	0.0824	0.00100 U	0.000500 U
MW-11	07/05/2017	0.00100 U	0.00200 U	0.0717	0.00100 U	0.000500 U
MW-11	07/05/2017 (Duplicate)	0.00100 U	0.00200 U	0.0694	0.00100 U	0.000500 U
MW-11	09/11/2017	--	--	--	--	--
MW-11	09/11/2017 (Duplicate)	--	--	--	--	--
MW-11	04/18/2018	0.00100 U	0.00200 U	0.0813	0.00100 U	0.000500 U
MW-11	04/18/2018 (Duplicate)	0.00100 U	0.00200 U	0.0825	0.00100 U	0.000500 U
MW-11	08/21/2018	--	0.00200 U	0.0624	--	--
MW-11	03/18/2019	0.00100 U	0.00200 U	0.0546	0.00100 U	0.000500 U
MW-11	03/18/2019 (Duplicate)	0.00100 U	0.00200 U	0.0586	0.00100 U	0.000500 U
MW-11	09/10/2019	0.00100 U	0.00200 U	0.106	0.00100 U	0.000100 U
MW-11	03/04/2020	0.00100 U	0.00200 U	0.0989	0.00100 U	0.000100 U
MW-11	09/15/2020	--	0.00200 U	0.0551	--	0.000161
MW-12	12/09/2015	0.00100 U	0.00200 U	0.0838	0.00100 U	0.000500 U
MW-12	03/01/2016	0.00100 U	0.00200 U	0.0577	0.00100 U	0.000500 U
MW-12	06/06/2016	0.00100 U	0.00200 U	0.116	0.00100 U	0.000500 U
MW-12	09/19/2016	0.00100 U	0.00200 U	0.0509	0.00100 U	0.000500 U
MW-12	12/19/2016	0.00100 U	0.00200 U	0.0472	0.00100 U	0.000500 U
MW-12	02/20/2017	0.00100 U	0.00200 U	0.0440	0.00100 U	0.000500 U
MW-12	04/25/2017	0.00100 U	0.00200 U	0.0472	0.00100 U	0.000500 U
MW-12	07/05/2017	0.00100 U	0.00200 U	0.0454	0.00100 U	0.000500 U
MW-12	09/11/2017	--	--	--	--	--
MW-12	04/18/2018	0.00100 U	0.00200 U	0.0631	0.00100 U	0.000500 U
MW-12	08/21/2018	--	0.00200 U	0.0654	--	--
MW-12	03/18/2019	0.00100 U	0.00200 U	0.0566	0.00100 U	0.000500 U
MW-12	09/10/2019	0.00100 U	0.00200 U	0.0693	0.00100 U	0.000267
MW-12	03/04/2020	0.00100 U	0.00200 U	0.0655	0.00100 U	0.000103
MW-12	09/15/2020	--	0.00200 U	0.0706	--	0.000451
MW-13	12/09/2015	0.00100 U	0.00200 U	0.0530	0.00100 U	0.000500 U
MW-13	03/01/2016	0.00100 U	0.00200 U	0.0439	0.00100 U	0.000500 U
MW-13	06/06/2016	0.00100 U	0.00200 U	0.161	0.00100 U	0.000500 U
MW-13	09/19/2016	0.00100 U	0.00200 U	0.0418	0.00100 U	0.000500 U
MW-13	12/19/2016	0.00100 U	0.00388	0.0571	0.00100 U	0.000500 U
MW-13	02/20/2017	0.00100 U	0.00223	0.0477	0.00100 U	0.000500 U
MW-13	04/25/2017	0.00100 U	0.00339	0.0808	0.00100 U	0.000500 U
MW-13	07/05/2017	0.00100 U	0.00360	0.0768	0.00100 U	0.000500 U
MW-13	09/11/2017	--	--	--	--	--
MW-13	04/18/2018	0.00100 U	0.00200 U	0.0517	0.00100 U	0.000500 U
MW-13	08/21/2018	--	0.00200 U	0.0458	--	--
MW-13	03/18/2019	0.00100 U	0.00675 J	0.0579	0.00100 U	0.000500 U
MW-13	09/10/2019	0.00100 U	0.00251	0.0478	0.00100 U	0.000100 U
MW-13	03/04/2020	0.00100 U	0.00200 U	0.0389	0.00100 U	0.000100 U
MW-13	09/15/2020	--	0.00238	0.0368	--	0.000100 U
MW-14	12/09/2015	0.00100 U	0.00200 U	0.133	0.00100 U	0.000500 U
MW-14	03/01/2016	0.00100 U	0.00200 U	0.0798	0.00100 U	0.000500 U
MW-14	06/06/2016	0.00100 U	0.00200 U	0.0857	0.00100 U	0.000500 U
MW-14	09/20/2016	0.00100 U	0.00200 U	0.0656	0.00100 U	0.000500 U
MW-14	12/19/2016	0.00100 U	0.00200 U	0.0882	0.00100 U	0.000500 U
MW-14	02/20/2017	0.00100 U	0.00200 U	0.0768	0.00100 U	0.000500 U
MW-14	04/25/2017	0.00100 U	0.00200 U	0.0695	0.00100 U	0.000500 U

**Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Well	Date	Appendix IV Parameters					
		Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L	
MW-14	07/05/2017	0.00100 U	0.00200 U	0.0604	0.00100 U	0.000500 U	
MW-14	09/11/2017	--	--	--	--	--	
MW-14	04/18/2018	0.00100 U	0.00200 U	0.0646	0.00100 U	0.000500 U	
MW-14	08/21/2018	--	0.00200 U	0.0619	--	--	
MW-14	03/19/2019	0.00100 U	0.00200 U	0.0605	0.00100 U	0.000500 U	
MW-14	09/10/2019	0.00100 U	0.00200 U	0.0634	0.00100 U	0.000100 U	
MW-14	03/04/2020	0.00100 U	0.00200 U	0.0640	0.00100 U	0.000100	
MW-14	09/15/2020	--	0.00200 U	0.0655	--	0.000153	
MW-15	12/09/2015	0.00100 U	0.00200 U	0.0583	0.00100 U	0.000500 U	
MW-15	02/29/2016	0.00100 U	0.00200 U	0.0450	0.00100 U	0.000500 U	
MW-15	06/06/2016	0.00100 U	0.00200 U	0.0428	0.00100 U	0.000500 U	
MW-15	09/19/2016	0.00100 U	0.00200 U	0.0453	0.00100 U	0.000500 U	
MW-15	12/19/2016	0.00100 U	0.00200 U	0.0683	0.00100 U	0.000500 U	
MW-15	02/21/2017	0.00100 U	0.00286	0.0737	0.00100 U	0.000500 U	
MW-15	04/24/2017	0.00100 U	0.00200 U	0.0611	0.00100 U	0.000500 U	
MW-15	07/05/2017	0.00100 U	0.00200 U	0.0528	0.00100 U	0.000500 U	
MW-15	09/11/2017	--	--	--	--	--	
MW-15	04/18/2018	0.00100 U	0.00200 U	0.0489	0.00100 U	0.000500 U	
MW-15	08/21/2018	--	0.00200 U	0.0454	--	--	
MW-15	03/18/2019	0.00100 U	0.00200 U	0.0410	0.00100 U	0.000500 U	
MW-15	09/11/2019	0.00100 U	0.00273	0.0559	0.00100 U	0.000151	
MW-15	03/04/2020	0.00100 U	0.00200 U	0.0572	0.00100 U	0.000100 U	
MW-15	09/15/2020	--	0.00200 U	0.0528	--	0.000116	
MW-16	10/30/2018	0.00100 U	0.00200 U	0.220	0.00100 U	0.000500 U	
MW-16	10/30/2018	(Duplicate)	0.00100 U	0.00200 U	0.255	0.00100 U	0.000500 U
MW-16	11/20/2018	0.00100 U	0.00200 U	0.152	0.00100 U	0.000500 U	
MW-16	12/04/2018	0.00100 U	0.00200 U	0.189	0.00100 U	0.000500 U	
MW-16	01/03/2019	0.00100 U	0.00200 U	0.181	0.00100 U	0.000500 U	
MW-16	01/16/2019	0.00100 U	0.00200 U	0.164	0.00100 U	0.000500 U	
MW-16	01/28/2019	0.00100 U	0.00200 U	0.188	0.00100 U	0.000500 U	
MW-16	02/21/2019	0.00100 U	0.00200 U	0.195	0.00100 U	0.000500 U	
MW-16	03/07/2019	0.00100 U	0.00200 U	0.194	0.00100 U	0.000500 U	
MW-16	03/20/2019	0.00100 U	0.00200 U	0.201	0.00100 U	0.000500 U	
MW-16	09/10/2019	0.00100 U	0.00200 U	0.242	0.00100 U	0.000100 U	
MW-16	03/04/2020	0.00100 U	0.00200 U	0.163	0.00100 U	0.000100 U	
MW-16	09/15/2020	--	0.00200 U	0.197	--	0.000100 U	
MW-17	10/30/2018	0.00100 U	0.00569	0.157	0.00100 U	0.000500 U	
MW-17	11/20/2018	0.00100 U	0.0109	0.154	0.00100 U	0.000500 U	
MW-17	12/04/2018	0.00100 U	0.0115	0.161	0.00100 U	0.000500 U	
MW-17	01/03/2019	0.00100 U	0.00915	0.167	0.00100 U	0.000500 U	
MW-17	01/16/2019	0.00100 U	0.0104 J	0.171	0.00100 U	0.000500 U	
MW-17	01/28/2019	0.00100 U	0.00933	0.178	0.00100 U	0.000500 U	
MW-17	02/21/2019	0.00100 U	0.0103	0.197	0.00100 U	0.000500 U	
MW-17	03/07/2019	0.00100 U	0.0123	0.204	0.00100 U	0.000500 U	
MW-17	03/21/2019	0.00100 U	0.0176	0.181	0.00100 U	0.000500 U	
MW-17	09/10/2019	0.00100 U	0.0113	0.185	0.00100 U	0.000100 U	
MW-17	03/03/2020	0.00100 U	0.00650	0.166	0.00100 U	0.000100 U	
MW-17	09/14/2020	--	0.0184	0.207	--	0.000100 U	
MW-18	10/31/2018	0.00100 U	0.0208	0.132	0.00100 U	0.000500 U	
MW-18	11/20/2018	0.00100 U	0.0206	0.126	0.00100 U	0.000500 U	
MW-18	11/20/2018	(Duplicate)	0.00100 U	0.0224	0.136	0.00100 U	0.000500 U
MW-18	12/04/2018	0.00100 U	0.0199	0.141	0.00100 U	0.000500 U	
MW-18	12/04/2018	(Duplicate)	0.00100 U	0.0202	0.145	0.00100 U	0.000500 U
MW-18	01/03/2019	0.00100 U	0.00578	0.169	0.00100 U	0.000500 U	
MW-18	01/03/2019	(Duplicate)	0.00100 U	0.00531	0.167	0.00100 U	0.000500 U
MW-18	01/16/2019	0.00100 U	0.0126 J	0.133	0.00100 U	0.000500 U	
MW-18	01/16/2019	(Duplicate)	0.00100 U	0.0126 J	0.143	0.00100 U	0.000500 U
MW-18	01/28/2019	0.00100 U	0.0141	0.149	0.00100 U	0.000500 U	
MW-18	01/28/2019	(Duplicate)	0.00100 U	0.0140	0.140	0.00100 U	0.000500 U
MW-18	02/21/2019	0.00100 U	0.0191	0.145	0.00100 U	0.000500 U	
MW-18	02/21/2019	(Duplicate)	0.00100 U	0.0200	0.148	0.00100 U	0.000500 U
MW-18	03/07/2019	0.00100 U	0.0181	0.137	0.00100 U	0.000500 U	
MW-18	03/07/2019	(Duplicate)	0.00100 U	0.0165	0.123	0.00100 U	0.000500 U

**Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Well	Date		Appendix IV Parameters				
			Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L
MW-18	03/21/2019		0.00100 U	0.00450	0.121	0.00100 U	0.000500 U
MW-18	03/21/2019	(Duplicate)	0.00100 U	0.00468	0.133	0.00100 U	0.000500 U
MW-18	09/10/2019		0.00100 U	0.00523	0.164	0.00100 U	0.000100 U
MW-18	03/03/2020		0.00100 U	0.00780	0.206	0.00100 U	0.000100 U
MW-18	09/14/2020		--	0.0144	0.153	--	0.000100 U
MW-19	10/30/2018		--	0.00444	0.181	--	--
MW-19	11/19/2018		--	0.00200 U	0.123	--	--
MW-19	12/03/2018		--	0.00245	0.160	--	--
MW-19	03/18/2019		0.00100 U	0.00200 U	0.153	0.00100 U	0.000500 U
MW-19	09/11/2019		0.00100 U	0.00200 U	0.122	0.00100 U	0.000108
MW-19	09/11/2019	(Duplicate)	0.00100 U	0.00200 U	0.119	0.00100 U	0.000105
MW-19	03/02/2020		0.00100 U	0.00200 U	0.120	0.00100 U	0.000100 U
MW-19	09/14/2020		--	0.00200 U	0.121	--	0.000100 U
MW-20	10/30/2018		--	0.0161	0.127	--	--
MW-20	11/19/2018		--	0.00988	0.108	--	--
MW-20	12/03/2018		--	0.00693	0.125	--	--
MW-20	03/18/2019		0.00100 U	0.0234 J	0.107	0.00100 U	0.000500 U
MW-20	09/11/2019		0.00100 U	0.00339	0.0930	0.00100 U	0.000100 U
MW-20	03/02/2020		0.00100 U	0.00371	0.107	0.00100 U	0.000100 U
MW-20	09/14/2020		--	0.00574	0.0962	--	0.000100 U
MW-21	10/30/2018		--	0.00200 U	0.219	--	--
MW-21	11/19/2018		--	0.00200 U	0.204	--	--
MW-21	12/04/2018		--	0.00200 U	0.211	--	--
MW-21	03/18/2019		0.00100 U	0.00200 U	0.223	0.00100 U	0.000500 U
MW-21	09/10/2019		0.00100 U	0.00200 U	0.178	0.00100 U	0.000130
MW-21	03/03/2020		0.00100 U	0.00200 U	0.166	0.00100 U	0.000100 U
MW-21	09/15/2020		--	0.00200 U	0.212	--	0.000100 U

Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Date	Appendix IV Parameters				
		Chromium mg/L	Cobalt mg/L	Lead mg/L	Lithium mg/L	Mercury mg/L
MW-2	12/09/2015	0.00500 U	0.00331	0.000500 U	0.131	0.000200 U
MW-2	03/01/2016	0.00500 U	0.00201	0.000500 U	0.100	0.000200 U
MW-2	06/06/2016	0.00500 U	0.00159	0.000500 U	0.108	0.000200 U
MW-2	09/20/2016	0.00500 U	0.00175	0.000500 U	0.0889	0.000200 UJ
MW-2	12/19/2016	0.00500 U	0.00198	0.000500 U	0.102	0.000200 U
MW-2	02/20/2017	0.00500 U	0.00164	0.000500 U	0.0821	0.000200 U
MW-2	04/25/2017	0.00500 U	0.00144	0.000500 U	0.0589	0.000200 U
MW-2	07/05/2017	0.00500 U	0.00192	0.000500 U	0.0739	0.000200 U
MW-2	09/11/2017	--	--	--	--	--
MW-2	04/18/2018	0.00500 U	0.00204	0.000500 U	0.0715	0.000200 U
MW-2	08/21/2018	0.00500 U	0.00246	--	0.0708	--
MW-2	03/19/2019	0.00500 U	0.00199	0.000500 U	0.0763	0.000200 U
MW-2	09/11/2019	0.00500 U	0.00170	0.000500 U	0.0737	0.000200 U
MW-2	09/11/2019 (Duplicate)	0.00500 U	0.00176	0.000500 U	0.0776	0.000200 U
MW-2	03/04/2020	0.00500 U	0.00200	0.000500 U	0.0863	0.000200 U
MW-2	03/04/2020 (Duplicate)	0.00500 U	0.00200	0.000500 U	0.0878	0.000200 U
MW-2	09/15/2020	0.00500 U	0.00162	0.000500 U	0.0807	--
MW-2	09/15/2020 (Duplicate)	0.00500 U	0.00162	0.000500 U	0.0805	--
MW-4	12/09/2015	0.00500 U	0.00154	0.000500 U	0.254	0.000200 U
MW-4	03/01/2016	0.00500 U	0.000500 U	0.000500 U	0.180	0.000200 U
MW-4	06/06/2016	0.00500 U	0.000997	0.000500 U	0.188	0.000200 U
MW-4	09/20/2016	0.00500 U	0.0104	0.000500 U	0.195	0.000200 UJ
MW-4	12/19/2016	0.00500 U	0.00841	0.000500 U	0.174	0.000200 U
MW-4	02/20/2017	0.00500 U	0.00855	0.000500 U	0.171	0.000200 U
MW-4	04/24/2017	0.00500 U	0.00791	0.000500 U	0.146	0.000200 U
MW-4	07/05/2017	0.00500 U	0.00758	0.000500 U	0.121	0.000200 U
MW-4	09/11/2017	--	--	--	--	--
MW-4	04/18/2018	0.00500 U	0.00493	0.000500 U	0.128	0.000200 U
MW-4	08/21/2018	0.00500 U	0.00252	--	0.0787	--
MW-4	03/19/2019	0.00500 U	0.00377	0.000500 U	0.149	0.000200 U
MW-4	09/11/2019	0.00500 U	0.00434	0.000500 U	0.104	0.000200 U
MW-4	03/03/2020	0.00500 U	0.00399	0.000500 U	0.114	0.000200 U
MW-4	09/14/2020	0.00500 U	0.00249	0.000500 U	0.0725	--
MW-8	12/09/2015	0.00500 U	0.00253	0.000500 U	0.0950	0.000200 U
MW-8	02/29/2016	0.00500 U	0.00344	0.000500 U	0.0743	0.000200 U
MW-8	06/06/2016	0.00500 U	0.00303	0.000500 U	0.106	0.000200 U
MW-8	09/19/2016	0.00500 U	0.00248	0.000500 U	0.0500 U	0.000200 UJ
MW-8	12/19/2016	0.00500 U	0.00272	0.000500 U	0.0585	0.000200 U
MW-8	02/21/2017	0.00500 U	0.00211	0.000500 U	0.0684	0.000200 U
MW-8	04/24/2017	0.00500 U	0.00287	0.000500 U	0.111	0.000200 U
MW-8	07/05/2017	0.00500 U	0.00313	0.000500 U	0.103	0.000200 U
MW-8	09/11/2017	--	--	--	--	--
MW-8	04/18/2018	0.00500 U	0.00351	0.000500 U	0.104	0.000200 U
MW-8	08/21/2018	0.00500 U	0.00297	--	0.0909	--
MW-8	03/18/2019	0.00500 U	0.00256	0.000500 U	0.0850	0.000200 U
MW-8	09/10/2019	0.00500 U	0.00276	0.000500 U	0.0884	0.000200 U
MW-8	03/03/2020	0.00500 U	0.00192	0.000500 U	0.0563	0.000200 U
MW-8	09/15/2020	0.00500 U	0.00395	0.000500 U	0.0720	--
MW-10	12/09/2015	0.00500 U	0.00394	0.000500 U	0.138	0.000200 U
MW-10	02/29/2016	0.00500 U	0.00311	0.000500 U	0.126	0.000200 U
MW-10	06/06/2016	0.00500 U	0.000854	0.000500 U	0.117	0.000200 U
MW-10	09/19/2016	0.00500 U	0.00262	0.000500 U	0.0958	0.000200 UJ
MW-10	12/19/2016	0.00500 U	0.00197	0.000500 U	0.0874	0.000200 U
MW-10	02/21/2017	0.00500 U	0.00198	0.000500 U	0.0619	0.000200 U
MW-10	04/24/2017	0.00500 U	0.00191	0.000500 U	0.0653	0.000200 U
MW-10	07/05/2017	0.00500 U	0.00138	0.000500 U	0.0533	0.000200 U
MW-10	09/11/2017	--	--	--	--	--
MW-10	04/18/2018	0.00500 U	0.00194	0.000500 U	0.0753	0.000200 U
MW-10	08/21/2018	0.00500 U	0.000592	--	0.0947	--
MW-10	08/21/2018 (Duplicate)	0.00500 U	0.000630	--	0.0954	--
MW-10	03/18/2019	0.00500 U	0.00128	0.000500 U	0.0746	0.000200 U
MW-10	09/11/2019	0.00500 U	0.00101	0.000500 U	0.0767	0.000200 U
MW-10	03/03/2020	0.00500 U	0.000876	0.000500 U	0.0766	0.000200 U
MW-10	03/03/2020 (Duplicate)	0.00500 U	0.000870	0.000500 U	0.0801	0.000200 U

**Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Well	Date	Appendix IV Parameters				
		Chromium mg/L	Cobalt mg/L	Lead mg/L	Lithium mg/L	Mercury mg/L
MW-10	09/15/2020	0.00500 U	0.000834	0.000500 U	0.0883	--
MW-11	12/09/2015	0.00500 U	0.00238	0.000500 U	0.132	0.000200 U
MW-11	12/09/2015 (Duplicate)	0.00500 U	0.00240	0.000500 U	0.120	0.000200 U
MW-11	03/01/2016	0.00500 U	0.00153	0.000500 U	0.119	0.000200 U
MW-11	03/01/2016 (Duplicate)	0.00500 U	0.00182	0.000500 U	0.122	0.000200 U
MW-11	06/06/2016	0.00500 U	0.000500 U	0.000500 U	0.135	0.000200 U
MW-11	06/06/2016 (Duplicate)	0.00500 U	0.000792	0.000500 U	0.107	0.000200 U
MW-11	09/20/2016	0.00500 U	0.00155	0.000500 U	0.136	0.000200 UJ
MW-11	09/20/2016 (Duplicate)	0.00500 U	0.00163	0.000500 U	0.131	0.000200 UJ
MW-11	12/19/2016	0.00500 U	0.00212	0.000500 U	0.127	0.000200 U
MW-11	12/19/2016 (Duplicate)	0.00500 U	0.00204	0.000500 U	0.132	0.000200 U
MW-11	02/20/2017	0.00500 U	0.00282	0.000500 U	0.119	0.000200 U
MW-11	02/20/2017 (Duplicate)	0.00500 U	0.00271	0.000500 U	0.122	0.000200 U
MW-11	04/25/2017	0.00500 U	0.00279	0.000500 U	0.111	0.000200 U
MW-11	04/25/2017 (Duplicate)	0.00500 U	0.00293	0.000500 U	0.111	0.000200 U
MW-11	07/05/2017	0.00500 U	0.00331	0.000500 U	0.120	0.000200 U
MW-11	07/05/2017 (Duplicate)	0.00500 U	0.00321	0.000500 U	0.121	0.000200 U
MW-11	09/11/2017	--	--	--	--	--
MW-11	09/11/2017 (Duplicate)	--	--	--	--	--
MW-11	04/18/2018	0.00500 U	0.00323	0.000500 U	0.129	0.000200 U
MW-11	04/18/2018 (Duplicate)	0.00500 U	0.00322	0.000500 U	0.128	0.000200 U
MW-11	08/21/2018	0.00500 U	0.00251	--	0.109	--
MW-11	03/18/2019	0.00500 U	0.00137	0.000500 U	0.132	0.000200 U
MW-11	03/18/2019 (Duplicate)	0.00500 U	0.00171	0.000500 U	0.129	0.000200 U
MW-11	09/10/2019	0.00500 U	0.000588	0.000500 U	0.0987	0.000200 U
MW-11	03/04/2020	0.00500 U	0.000500 U	0.000500 U	0.0912	0.000200 U
MW-11	09/15/2020	0.00500 U	0.00253	0.000500 U	0.120	--
MW-12	12/09/2015	0.00500 U	0.000500 U	0.000500 U	0.136	0.000200 U
MW-12	03/01/2016	0.00500 U	0.000500 U	0.000500 U	0.109	0.000200 U
MW-12	06/06/2016	0.0340	0.000500 U	0.000500 U	0.108	0.000200 U
MW-12	09/19/2016	0.00500 U	0.000500 U	0.000500 U	0.0871	0.000200 UJ
MW-12	12/19/2016	0.00500 U	0.000500 U	0.000500 U	0.0893	0.000200 U
MW-12	02/20/2017	0.00500 U	0.000500 U	0.000500 U	0.0727	0.000200 U
MW-12	04/25/2017	0.00500 U	0.000567	0.000500 U	0.0814	0.000200 U
MW-12	07/05/2017	0.00500 U	0.00182	0.000500 U	0.102	0.000200 U
MW-12	09/11/2017	--	--	--	--	--
MW-12	04/18/2018	0.00500 U	0.000500 U	0.000500 U	0.101	0.000200 U
MW-12	08/21/2018	0.00500 U	0.00147	--	0.0957	--
MW-12	03/18/2019	0.00500 U	0.000500 U	0.000500 U	0.111	0.000200 U
MW-12	09/10/2019	0.00500 U	0.000500 U	0.000500 U	0.110	0.000200 U
MW-12	03/04/2020	0.00500 U	0.000500 U	0.000500 U	0.100	0.000200 U
MW-12	09/15/2020	0.00500 U	0.000500 U	0.000500 U	0.0986	--
MW-13	12/09/2015	0.00500 U	0.000796	0.000500 U	0.122	0.000200 U
MW-13	03/01/2016	0.00500 U	0.00139	0.000500 U	0.116	0.000200 U
MW-13	06/06/2016	0.00500 U	0.000500 U	0.000500 U	0.102	0.000200 U
MW-13	09/19/2016	0.00500 U	0.00103	0.000500 U	0.121	0.000200 UJ
MW-13	12/19/2016	0.00500 U	0.00105	0.000500 U	0.110	0.000200 U
MW-13	02/20/2017	0.00500 U	0.00187	0.000500 U	0.120	0.000200 U
MW-13	04/25/2017	0.00500 U	0.00624	0.000500 U	0.0830	0.000200 U
MW-13	07/05/2017	0.00500 U	0.00116	0.000500 U	0.105	0.000200 U
MW-13	09/11/2017	--	--	--	--	--
MW-13	04/18/2018	0.00500 U	0.00304	0.000500 U	0.120	0.000200 U
MW-13	08/21/2018	0.00500 U	0.00185	--	0.0745	--
MW-13	03/18/2019	0.00500 U	0.00158	0.000500 U	0.118	0.000200 U
MW-13	09/10/2019	0.00500 U	0.00191	0.000500 U	0.0937	0.000200 U
MW-13	03/04/2020	0.00500 U	0.000776	0.000500 U	0.134	0.000200 U
MW-13	09/15/2020	0.00500 U	0.00323	0.000500 U	0.0997	--
MW-14	12/09/2015	0.00500 U	0.00311	0.000500 U	0.162	0.000200 U
MW-14	03/01/2016	0.00500 U	0.00278	0.000500 U	0.143	0.000200 U
MW-14	06/06/2016	0.00500 U	0.00237	0.000500 U	0.129	0.000200 U
MW-14	09/20/2016	0.00500 U	0.00259	0.000500 U	0.152	0.000200 UJ
MW-14	12/19/2016	0.00500 U	0.00465	0.000500 U	0.133	0.000200 U
MW-14	02/20/2017	0.00500 U	0.00494	0.000500 U	0.142	0.000200 U
MW-14	04/25/2017	0.00500 U	0.00329	0.000500 U	0.0959	0.000200 U

Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Date	Appendix IV Parameters					
		Chromium mg/L	Cobalt mg/L	Lead mg/L	Lithium mg/L	Mercury mg/L	
MW-14	07/05/2017	0.00500 U	0.00327	0.000500 U	0.105	0.000200 U	
MW-14	09/11/2017	--	--	--	--	--	
MW-14	04/18/2018	0.00500 U	0.00277	0.000500 U	0.105	0.000200 U	
MW-14	08/21/2018	0.00500 U	0.00319	--	0.0814	--	
MW-14	03/19/2019	0.00500 U	0.00174	0.000500 U	0.125	0.000200 U	
MW-14	09/10/2019	0.00500 U	0.000759	0.000500 U	0.104	0.000200 U	
MW-14	03/04/2020	0.00500 U	0.00155	0.000500 U	0.128	0.000200 U	
MW-14	09/15/2020	0.00500 U	0.00219	0.000500 U	0.130	--	
MW-15	12/09/2015	0.00500 U	0.00212	0.000500 U	0.0652	0.000200 U	
MW-15	02/29/2016	0.00500 U	0.00188	0.000500 U	0.0541	0.000200 U	
MW-15	06/06/2016	0.00500 U	0.00165	0.000500 U	0.0540	0.000200 U	
MW-15	09/19/2016	0.00500 U	0.00213	0.000500 U	0.0701	0.000200 U	
MW-15	12/19/2016	0.00500 U	0.00212	0.000500 U	0.0923	0.000200 U	
MW-15	02/21/2017	0.00500 U	0.00561	0.000500 U	0.0814	0.000200 U	
MW-15	04/24/2017	0.00500 U	0.00199	0.000500 U	0.0847	0.000200 U	
MW-15	07/05/2017	0.00500 U	0.00227	0.000500 U	0.0919	0.000200 U	
MW-15	09/11/2017	--	--	--	--	--	
MW-15	04/18/2018	0.00500 U	0.00172	0.000500 U	0.0833	0.000200 U	
MW-15	08/21/2018	0.00500 U	0.00213	--	0.0576	--	
MW-15	03/18/2019	0.00500 U	0.00196	0.000500 U	0.0616	0.000200 U	
MW-15	09/11/2019	0.00500 U	0.00950	0.000500 U	0.0606	0.000200 U	
MW-15	03/04/2020	0.00500 U	0.00141	0.000500 U	0.0586	0.000200 U	
MW-15	09/15/2020	0.00500 U	0.000899	0.000500 U	0.0729	--	
MW-16	10/30/2018	0.00500 U	0.00187	0.000500 U	0.0596	0.000200 U	
MW-16	10/30/2018	(Duplicate)	0.00500 U	0.00218	0.000500 U	0.0679	0.000200 U
MW-16	11/20/2018		0.00500 U	0.000500 U	0.000500 U	0.0458	0.000200 U
MW-16	12/04/2018		0.00500 U	0.000500 U	0.000500 U	0.0685	0.000200 U
MW-16	01/03/2019		0.00500 U	0.000500 U	0.000500 U	0.0591	0.000200 U
MW-16	01/16/2019		0.00500 U	0.000500 U	0.000500 U	0.0599	0.000200 U
MW-16	01/28/2019		0.00500 U	0.000500 U	0.000500 U	0.0632	0.000200 U
MW-16	02/21/2019		0.00500 U	0.000500 U	0.000500 U	0.0716	0.000200 U
MW-16	03/07/2019		0.00500 U	0.000500 U	0.000500 U	0.0706	0.000200 U
MW-16	03/20/2019		0.00500 U	0.000500 U	0.000500 U	0.0700	0.000200 U
MW-16	09/10/2019		0.00500 U	0.000500 U	0.000500 U	0.0592	0.000200 U
MW-16	03/04/2020		0.00500 U	0.000500 U	0.000500 U	0.0573	0.000200 U
MW-16	09/15/2020		0.00500 U	0.000523	0.000500 U	0.0616	--
MW-17	10/30/2018		0.00500 U	0.00346	0.000500 U	0.0737	0.000200 U
MW-17	11/20/2018		0.00500 U	0.00396	0.000500 U	0.0724	0.000200 U
MW-17	12/04/2018		0.00500 U	0.00379	0.000500 U	0.0831	0.000200 U
MW-17	01/03/2019		0.00500 U	0.00335	0.000500 U	0.0721	0.000200 U
MW-17	01/16/2019		0.00500 U	0.00340	0.000500 U	0.0769	0.000200 U
MW-17	01/28/2019		0.00500 U	0.00344	0.000500 U	0.0764	0.000200 U
MW-17	02/21/2019		0.00500 U	0.00318	0.000500 U	0.0929	0.000200 U
MW-17	03/07/2019		0.00500 U	0.00328	0.000500 U	0.0867	0.000200 U
MW-17	03/21/2019		0.00500 U	0.00269	0.000500 U	0.0828	0.000200 U
MW-17	09/10/2019		0.00500 U	0.00313	0.000500 U	0.0771	0.000200 U
MW-17	03/03/2020		0.00500 U	0.00243	0.000500 U	0.114	0.000200 U
MW-17	09/14/2020		0.00500 U	0.00319	0.000500 U	0.0921	--
MW-18	10/31/2018		0.00500 U	0.00511	0.000500 U	0.129	0.000200 U
MW-18	11/20/2018		0.00500 U	0.00661	0.000500 U	0.107	0.000200 U
MW-18	11/20/2018	(Duplicate)	0.00500 U	0.00724	0.000500 U	0.116	0.000200 U
MW-18	12/04/2018		0.00500 U	0.00586	0.000500 U	0.121	0.000200 U
MW-18	12/04/2018	(Duplicate)	0.00500 U	0.00605	0.000500 U	0.132	0.000200 U
MW-18	01/03/2019		0.00500 U	0.00306	0.000500 U	0.101	0.000200 U
MW-18	01/03/2019	(Duplicate)	0.00500 U	0.00303	0.000500 U	0.103	0.000600 U
MW-18	01/16/2019		0.00500 U	0.00278	0.000500 U	0.103	0.000200 U
MW-18	01/16/2019	(Duplicate)	0.00500 U	0.00303	0.000500 U	0.107	0.000200 U
MW-18	01/28/2019		0.00500 U	0.00324	0.000500 U	0.118	0.000200 U
MW-18	01/28/2019	(Duplicate)	0.00500 U	0.00335	0.000500 U	0.120	0.000200 U
MW-18	02/21/2019		0.00500 U	0.00286	0.000500 U	0.125	0.000200 U
MW-18	02/21/2019	(Duplicate)	0.00500 U	0.00295	0.000500 U	0.129	0.000200 U
MW-18	03/07/2019		0.00500 U	0.00294	0.000500 U	0.133	0.000200 U
MW-18	03/07/2019	(Duplicate)	0.00500 U	0.00266	0.000500 U	0.136	0.000200 U

**Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Well	Date	Appendix IV Parameters				
		Chromium mg/L	Cobalt mg/L	Lead mg/L	Lithium mg/L	Mercury mg/L
MW-18	03/21/2019	0.00500 U	0.00154	0.000500 U	0.0991	0.000200 U
MW-18	03/21/2019 (Duplicate)	0.00500 U	0.00190	0.000500 U	0.115	0.000200 U
MW-18	09/10/2019	0.00500 U	0.00392	0.000500 U	0.118	0.000200 U
MW-18	03/03/2020	0.00500 U	0.00282	0.000500 U	0.0878	0.000200 U
MW-18	09/14/2020	0.00500 U	0.00457	0.000500 U	0.117	--
MW-19	10/30/2018	--	0.00980	--	0.149	--
MW-19	11/19/2018	--	0.00567	--	0.102	--
MW-19	12/03/2018	--	0.00693	--	0.147	--
MW-19	03/18/2019	0.00500 U	0.00758	0.000500 U	0.121	0.000200 U
MW-19	09/11/2019	0.00500 U	0.00455	0.000500 U	0.146	0.000200 U
MW-19	09/11/2019 (Duplicate)	0.00500 U	0.00456	0.000500 U	0.143	0.000200 U
MW-19	03/02/2020	0.00500 U	0.00502	0.000500 U	0.115	0.000200 U
MW-19	09/14/2020	0.00500 U	0.00714	0.000500 U	0.0930	--
MW-20	10/30/2018	--	0.00370	--	0.0936	--
MW-20	11/19/2018	--	0.00227	--	0.0730	--
MW-20	12/03/2018	--	0.00190	--	0.0891	--
MW-20	03/18/2019	0.00500 U	0.00158	0.000500 U	0.111	0.000200 U
MW-20	09/11/2019	0.00500 U	0.00218	0.000500 U	0.0773	0.000200 U
MW-20	03/02/2020	0.00500 U	0.00432	0.000500 U	0.0782	0.000200 U
MW-20	09/14/2020	0.00500 U	0.00574	0.000500 U	0.0752	--
MW-21	10/30/2018	--	0.00104	--	0.0806	--
MW-21	11/19/2018	--	0.000684	--	0.0707	--
MW-21	12/04/2018	--	0.000545	--	0.0841	--
MW-21	03/18/2019	0.00500 U	0.000683	0.000517	0.0768	0.000200 U
MW-21	09/10/2019	0.00500 U	0.000500 U	0.000500 U	0.0621	0.000200 U
MW-21	03/03/2020	0.00500 U	0.000500 U	0.000500 U	0.0686	0.000200 U
MW-21	09/15/2020	0.00500 U	0.00131	0.000500 U	0.0669	--

Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Date	Appendix IV Parameters			
		Molybdenum mg/L	Radium-226 & 228 pCi/L	Selenium mg/L	Thallium mg/L
MW-2	12/09/2015	0.00266	0.234 U	0.00500 U	0.00100 U
MW-2	03/01/2016	0.00218	0.360 U	0.00500 U	0.00100 U
MW-2	06/06/2016	0.00243	0.896	0.00500 U	0.00100 U
MW-2	09/20/2016	0.00242	0.575	0.00500 U	0.00100 U
MW-2	12/19/2016	0.00269	0.791	0.00500 U	0.00100 U
MW-2	02/20/2017	0.00258	0.164 U	0.00500 U	0.00100 U
MW-2	04/25/2017	0.00200 U	0.239 U	0.00500 U	0.00100 U
MW-2	07/05/2017	0.00200 U	0.597	0.00500 U	0.00100 U
MW-2	09/11/2017	--	--	--	--
MW-2	04/18/2018	0.00211	0.501	0.00500 U	0.00100 U
MW-2	08/21/2018	0.00200 U	0.829	0.00500 U	--
MW-2	03/19/2019	0.00200 U	0.638	0.00500 U	0.00100 U
MW-2	09/11/2019	0.00229	0.476 U	0.00500 U	0.00100 U
MW-2	09/11/2019 (Duplicate)	0.00246	0.960	0.00500 U	0.00100 U
MW-2	03/04/2020	0.00246	0.697	0.00500 U	0.00100 U
MW-2	03/04/2020 (Duplicate)	0.00227	0.718	0.00500 U	0.00100 U
MW-2	09/15/2020	0.00206	0.832	0.00500 U	--
MW-2	09/15/2020 (Duplicate)	0.00200 U	1.00	0.00500 U	--
MW-4	12/09/2015	0.00200 U	0.228 U	0.00500 U	0.00100 U
MW-4	03/01/2016	0.00200 U	0.212 U	0.0113	0.00100 U
MW-4	06/06/2016	0.00200 U	0.460	0.00500 U	0.00100 U
MW-4	09/20/2016	0.00200 U	0.829	0.00500 U	0.00100 U
MW-4	12/19/2016	0.00200 U	0.748	0.00500 U	0.00100 U
MW-4	02/20/2017	0.00200 U	0.398	0.00500 U	0.00100 U
MW-4	04/24/2017	0.00200 U	0.375	0.00500 U	0.00100 U
MW-4	07/05/2017	0.00200 U	0.425	0.00500 U	0.00100 U
MW-4	09/11/2017	--	--	--	--
MW-4	04/18/2018	0.00200 U	0.241 U	0.00500 U	0.00100 U
MW-4	08/21/2018	0.00200 U	0.634	0.00500 U	--
MW-4	03/19/2019	0.00200 U	0.399 U	0.00500 U	0.00100 U
MW-4	09/11/2019	0.00200 U	0.442	0.00500 U	0.00100 U
MW-4	03/03/2020	0.00200 U	0.475 U	0.00500 U	0.00100 U
MW-4	09/14/2020	0.00200 U	0.594	0.00500 U	--
MW-8	12/09/2015	0.00589	0.535	0.0985	0.00100 U
MW-8	02/29/2016	0.0565	0.290 U	0.0620	0.00100 U
MW-8	06/06/2016	0.0184	0.644	0.00500 U	0.00100 U
MW-8	09/19/2016	0.143	0.641	0.0672	0.00100 U
MW-8	12/19/2016	0.0895	0.657	0.00768	0.00100 U
MW-8	02/21/2017	0.0398	0.377 U	0.00500 U	0.00100 U
MW-8	04/24/2017	0.0241	0.0102 U	0.00500 U	0.00100 U
MW-8	07/05/2017	0.0165	0.959	0.00500 U	0.00100 U
MW-8	09/11/2017	--	--	--	--
MW-8	04/18/2018	0.0233	0.481	0.00590	0.00100 U
MW-8	08/21/2018	0.00976	0.722	0.00500 U	--
MW-8	03/18/2019	0.0355	0.410	0.00500 U	0.00100 U
MW-8	09/10/2019	0.0135	0.589	0.00500 U	0.00100 U
MW-8	03/03/2020	0.0303	0.315 U	0.00500 U	0.00100 U
MW-8	09/15/2020	0.0311	0.932	0.00500 U	--
MW-10	12/09/2015	0.00346	0.627	0.00500 U	0.00100 U
MW-10	02/29/2016	0.00248	0.701	0.00500 U	0.00100 U
MW-10	06/06/2016	0.00239	0.256 U	0.00500 U	0.00100 U
MW-10	09/19/2016	0.00292	0.530	0.00500 U	0.00100 U
MW-10	12/19/2016	0.00267	1.06	0.00500 U	0.00100 U
MW-10	02/21/2017	0.00329	0.731	0.00500 U	0.00100 U
MW-10	04/24/2017	0.00296	0.740	0.00500 U	0.00100 U
MW-10	07/05/2017	0.00309	0.902	0.00500 U	0.00100 U
MW-10	09/11/2017	--	--	--	--
MW-10	04/18/2018	0.00269	0.776	0.00500 U	0.00100 U
MW-10	08/21/2018	0.00200 U	0.830	0.0152	--
MW-10	08/21/2018 (Duplicate)	0.00200 U	0.608	0.0167	--
MW-10	03/18/2019	0.00345	0.694	0.00500 U	0.00100 U
MW-10	09/11/2019	0.00314	0.313 U	0.00500 U	0.00100 U
MW-10	03/03/2020	0.00326	0.385 U	0.00500 U	0.00100 U
MW-10	03/03/2020 (Duplicate)	0.00322	0.628	0.00500 U	0.00100 U

Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Date	Appendix IV Parameters			
		Molybdenum mg/L	Radium-226 & 228 pCi/L	Selenium mg/L	Thallium mg/L
MW-10	09/15/2020	0.00322	2.17	0.00500 U	--
MW-11	12/09/2015	0.00200 U	0.321 U	0.00500 U	0.00100 U
MW-11	12/09/2015 (Duplicate)	0.00200 U	0.827 U	0.00500 U	0.00100 U
MW-11	03/01/2016	0.00200 U	0.246 U	0.00500 U	0.00100 U
MW-11	03/01/2016 (Duplicate)	0.00200 U	0.0494 U	0.00500 U	0.00100 U
MW-11	06/06/2016	0.00200 U	-0.00864 U	0.0580 J	0.00100 U
MW-11	06/06/2016 (Duplicate)	0.00200 U	-0.0107 U	0.00609 J	0.00100 U
MW-11	09/20/2016	0.00200 U	0.163 U	0.00500 U	0.00100 U
MW-11	09/20/2016 (Duplicate)	0.00200 U	-0.0282 U	0.00500 U	0.00100 U
MW-11	12/19/2016	0.00200 U	0.659	0.00500 U	0.00100 U
MW-11	12/19/2016 (Duplicate)	0.00200 U	0.217 U	0.00500 U	0.00100 U
MW-11	02/20/2017	0.00200 U	0.0642 U	0.00500 U	0.00100 U
MW-11	02/20/2017 (Duplicate)	0.00200 U	0.0507 U	0.00500 U	0.00100 U
MW-11	04/25/2017	0.00200 U	0.0680 U	0.00500 U	0.00100 U
MW-11	04/25/2017 (Duplicate)	0.00200 U	0.120 U	0.00500 U	0.00100 U
MW-11	07/05/2017	0.00200 U	0.330	0.00500 U	0.00100 U
MW-11	07/05/2017 (Duplicate)	0.00200 U	0.576	0.00500 U	0.00100 U
MW-11	09/11/2017	--	--	--	--
MW-11	09/11/2017 (Duplicate)	--	--	--	--
MW-11	04/18/2018	0.00200 U	0.401 U	0.00500 U	0.00100 U
MW-11	04/18/2018 (Duplicate)	0.00200 U	0.595	0.00500 U	0.00100 U
MW-11	08/21/2018	0.00200 U	0.296 U	0.00500 U	--
MW-11	03/18/2019	0.00200 U	0.436	0.00500 U	0.00100 U
MW-11	03/18/2019 (Duplicate)	0.00200 U	-0.0335 U	0.00500 U	0.00100 U
MW-11	09/10/2019	0.00200 U	0.383 U	0.0213	0.00100 U
MW-11	03/04/2020	0.00200 U	0.0279 U	0.0100	0.00100 U
MW-11	09/15/2020	0.00200 U	0.379	0.00500 U	--
MW-12	12/09/2015	0.00200 U	0.209 U	0.0582	0.00100 U
MW-12	03/01/2016	0.00200 U	0.536	0.0674	0.00100 U
MW-12	06/06/2016	0.00234	0.448	0.0522	0.00100 U
MW-12	09/19/2016	0.00200 U	0.744	0.0766	0.00100 U
MW-12	12/19/2016	0.00200 U	0.161 U	0.0728	0.00100 U
MW-12	02/20/2017	0.00200 U	0.301 U	0.0701	0.00100 U
MW-12	04/25/2017	0.00200 U	0.288 U	0.0327	0.00100 U
MW-12	07/05/2017	0.00200 U	0.300 U	0.00500 U	0.00100 U
MW-12	09/11/2017	--	--	--	--
MW-12	04/18/2018	0.00477	0.297 U	0.00790	0.00100 U
MW-12	08/21/2018	0.00382	0.810	0.00500 U	--
MW-12	03/18/2019	0.00200 U	0.105 U	0.0202	0.00100 U
MW-12	09/10/2019	0.00200 U	0.351 U	0.00500 U	0.00100 U
MW-12	03/04/2020	0.00200 U	0.229 U	0.0242	0.00100 U
MW-12	09/15/2020	0.00200 U	0.649	0.0285	--
MW-13	12/09/2015	0.00200 U	1.25	0.0405	0.00100 U
MW-13	03/01/2016	0.00200 U	0.493	0.0624	0.00100 U
MW-13	06/06/2016	0.00208	0.486	0.0831	0.00100 U
MW-13	09/19/2016	0.00200 U	0.214 U	0.0258	0.00100 U
MW-13	12/19/2016	0.00200 U	0.370 U	0.00616	0.00100 U
MW-13	02/20/2017	0.00200 U	0.0861 U	0.0196	0.00100 U
MW-13	04/25/2017	0.00296	0.389	0.00500 U	0.00100 U
MW-13	07/05/2017	0.00235	0.579	0.00500 U	0.00100 U
MW-13	09/11/2017	--	--	--	--
MW-13	04/18/2018	0.00200 U	0.737	0.0205	0.00100 U
MW-13	08/21/2018	0.00205	0.653	0.00500 U	--
MW-13	03/18/2019	0.00276	0.00847 U	0.00500 U	0.00100 U
MW-13	09/10/2019	0.00200 U	0.255 U	0.00500 U	0.00100 U
MW-13	03/04/2020	0.00200 U	0.115 U	0.0326	0.00100 U
MW-13	09/15/2020	0.00273	0.622	0.00500 U	--
MW-14	12/09/2015	0.00207	1.79	0.0148	0.00100 U
MW-14	03/01/2016	0.00200 U	0.597	0.0216	0.00100 U
MW-14	06/06/2016	0.00200 U	0.789	0.0146	0.00100 U
MW-14	09/20/2016	0.00200 U	0.879	0.0289	0.00100 U
MW-14	12/19/2016	0.00222	1.05	0.0126	0.00100 U
MW-14	02/20/2017	0.00222	0.559	0.00695	0.00100 U
MW-14	04/25/2017	0.00209	0.324	0.00500 U	0.00100 U

Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
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Well	Date	Appendix IV Parameters				
		Molybdenum mg/L	Radium-226 & 228 pCi/L	Selenium mg/L	Thallium mg/L	
MW-14	07/05/2017	0.00200 U	0.557	0.00500 U	0.00100 U	
MW-14	09/11/2017	--	--	--	--	
MW-14	04/18/2018	0.00200 U	0.445	0.00500 U	0.00100 U	
MW-14	08/21/2018	0.00200 U	0.702	0.00500 U	--	
MW-14	03/19/2019	0.00200 U	0.616	0.00500 U	0.00100 U	
MW-14	09/10/2019	0.00200 U	0.311 U	0.0102	0.00100 U	
MW-14	03/04/2020	0.00200 U	0.679	0.0176	0.00100 U	
MW-14	09/15/2020	0.00224	1.18	0.0165	--	
MW-15	12/09/2015	0.00200 U	0.894	0.00500 U	0.00100 U	
MW-15	02/29/2016	0.00200 U	0.300 U	0.00799	0.00100 U	
MW-15	06/06/2016	0.00200 U	0.454	0.00657	0.00100 U	
MW-15	09/19/2016	0.00200 U	0.282 U	0.00500 U	0.00100 U	
MW-15	12/19/2016	0.00200 U	0.506 U	0.00500 U	0.00100 U	
MW-15	02/21/2017	0.00200 U	0.931	0.00500 U	0.00100 U	
MW-15	04/24/2017	0.00200 U	0.385	0.00500 U	0.00100 U	
MW-15	07/05/2017	0.00200 U	0.691	0.00500 U	0.00100 U	
MW-15	09/11/2017	--	--	--	--	
MW-15	04/18/2018	0.00200 U	0.773	0.00500 U	0.00100 U	
MW-15	08/21/2018	0.00200 U	1.05	0.00500 U	--	
MW-15	03/18/2019	0.00200 U	0.489	0.00500 U	0.00100 U	
MW-15	09/11/2019	0.00200 U	0.686	0.00500 U	0.00100 U	
MW-15	03/04/2020	0.00200 U	0.540	0.00500 U	0.00100 U	
MW-15	09/15/2020	0.00200 U	0.830	0.00500 U	--	
MW-16	10/30/2018	0.00200 U	2.38	0.0334	0.00100 U	
MW-16	10/30/2018	(Duplicate)	2.02	0.0403	0.00100 U	
MW-16	11/20/2018	0.00200 U	1.08	0.0268	0.00100 U	
MW-16	12/04/2018	0.00200 U	0.844	0.0332	0.00100 U	
MW-16	01/03/2019	0.00200 U	1.29	0.0299	0.00100 U	
MW-16	01/16/2019	0.00200 U	0.739	0.0304	0.00100 U	
MW-16	01/28/2019	0.00200 U	0.732	0.0333	0.00100 U	
MW-16	02/21/2019	0.00200 U	0.656	0.0230	0.00100 U	
MW-16	03/07/2019	0.00200 U	0.432	0.0167	0.00100 U	
MW-16	03/20/2019	0.00200 U	0.584	0.00500 U	0.00100 U	
MW-16	09/10/2019	0.00200 U	1.34	0.0169	0.00100 U	
MW-16	03/04/2020	0.00200 U	0.301 U	0.0178	0.00100 U	
MW-16	09/15/2020	0.00200 U	0.842	0.00500 U	--	
MW-17	10/30/2018	0.00200 U	2.27	0.00500 U	0.00100 U	
MW-17	11/20/2018	0.00200 U	1.21	0.00500 U	0.00100 U	
MW-17	12/04/2018	0.00200 U	1.21	0.00500 U	0.00100 U	
MW-17	01/03/2019	0.00200 U	1.19	0.00500 U	0.00100 U	
MW-17	01/16/2019	0.00200 U	1.21	0.00500 U	0.00100 U	
MW-17	01/28/2019	0.00200 U	0.943	0.00500 U	0.00100 U	
MW-17	02/21/2019	0.00200 U	0.650	0.00500 U	0.00100 U	
MW-17	03/07/2019	0.00200 U	0.778	0.00500 U	0.00100 U	
MW-17	03/21/2019	0.00200 U	0.696	0.00500 U	0.00100 U	
MW-17	09/10/2019	0.00200 U	1.20	0.00500 U	0.00100 U	
MW-17	03/03/2020	0.00200 U	0.835	0.00500 U	0.00100 U	
MW-17	09/14/2020	0.00200 U	1.10	0.00500 U	--	
MW-18	10/31/2018	0.00200 U	1.61	0.00500 U	0.00100 U	
MW-18	11/20/2018	0.00200 U	1.52	0.00500 U	0.00100 U	
MW-18	11/20/2018	(Duplicate)	1.61	0.00500 U	0.00100 U	
MW-18	12/04/2018	0.00200 U	1.32	0.00500 U	0.00100 U	
MW-18	12/04/2018	(Duplicate)	1.75	0.00500 U	0.00100 U	
MW-18	01/03/2019	0.00200 U	0.713	0.00500 U	0.00100 U	
MW-18	01/03/2019	(Duplicate)	1.28	0.00500 U	0.00100 U	
MW-18	01/16/2019	0.00200 U	1.44	0.00500 U	0.00100 U	
MW-18	01/16/2019	(Duplicate)	0.00263	1.84	0.00500 U	0.00100 U
MW-18	01/28/2019	0.00202	1.00	0.00500 U	0.00100 U	
MW-18	01/28/2019	(Duplicate)	0.00202	0.840	0.00500 U	0.00100 U
MW-18	02/21/2019	0.00200 U	0.989	0.00500 U	0.00100 U	
MW-18	02/21/2019	(Duplicate)	0.00200 U	0.822	0.00500 U	0.00100 U
MW-18	03/07/2019	0.00200 U	1.11	0.00500 U	0.00100 U	
MW-18	03/07/2019	(Duplicate)	0.00200 U	0.807	0.00500 U	0.00100 U

**Baseline Period Groundwater Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Well	Date	Appendix IV Parameters			
		Molybdenum mg/L	Radium-226 & 228 pCi/L	Selenium mg/L	Thallium mg/L
MW-18	03/21/2019	0.00284	1.18	0.00500 U	0.00100 U
MW-18	03/21/2019 (Duplicate)	0.00207	1.07	0.00500 U	0.00100 U
MW-18	09/10/2019	0.00200 U	1.51	0.00500 U	0.00100 U
MW-18	03/03/2020	0.00200 U	0.856	0.00500 U	0.00100 U
MW-18	09/14/2020	0.00200 U	1.51	0.00500 U	--
MW-19	10/30/2018	0.00200 U	1.90	0.00500 U	--
MW-19	11/19/2018	0.00200 U	1.39	0.00500 U	--
MW-19	12/03/2018	0.00200 U	0.987	0.00500 U	--
MW-19	03/18/2019	0.00200 U	0.612	0.00500 U	0.00100 U
MW-19	09/11/2019	0.00200 U	1.06	0.00500 U	0.00100 U
MW-19	09/11/2019 (Duplicate)	0.00200 U	0.570	0.00500 U	0.00100 U
MW-19	03/02/2020	0.00200 U	0.764	0.00500 U	0.00100 U
MW-19	09/14/2020	0.00200 U	0.929	0.00500 U	--
MW-20	10/30/2018	0.00200 U	2.11	0.00500 U	--
MW-20	11/19/2018	0.00200 U	1.12	0.00706	--
MW-20	12/03/2018	0.00200 U	1.07	0.0132	--
MW-20	03/18/2019	0.00200 U	0.331 U	0.00500 U	0.00100 U
MW-20	09/11/2019	0.00200 U	0.782	0.0109	0.00100 U
MW-20	03/02/2020	0.00200 U	0.440	0.00500 U	0.00100 U
MW-20	09/14/2020	0.00200 U	0.847	0.00500 U	--
MW-21	10/30/2018	0.00243	2.21	0.00500 U	--
MW-21	11/19/2018	0.00200 U	0.934	0.00500 U	--
MW-21	12/04/2018	0.00200 U	1.03	0.00500 U	--
MW-21	03/18/2019	0.00200 U	0.952	0.00500 U	0.00100 U
MW-21	09/10/2019	0.00200 U	0.850	0.00500 U	0.00100 U
MW-21	03/03/2020	0.00200 U	0.825	0.00500 U	0.00100 U
MW-21	09/15/2020	0.00200 U	1.88	0.00500 U	--

Table 4.2

**2024 Monitoring Analytical Results Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Sample Location:			MW-2	MW-2	MW-2	MW-2	MW-4	MW-4	MW-8
Sample ID:			MW02-GW-0324	DP01-GW-0324	MW02-GW-0924	DP01-GW-0924	MW04-GW-0324	MW04-GW-0924	MW08-GW-0324
Sample Date:			3/12/2024	3/12/2024	9/18/2024	9/18/2024	3/12/2024	9/18/2024	3/13/2024
	Site-Specific GWPS			(Duplicate)		(Duplicate)			
Parameters	Units								
Appendix III									
Boron	mg/L	--	0.631	0.602	0.547	0.551	0.223	0.222	3.27
Calcium	mg/L	--	216	218	220	222	125	119	209
Chloride	mg/L	--	<5.00	<5.00	<5.00	<5.00	29.6	32.6	<5.00
Fluoride	mg/L	4.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
pH, lab	s.u.	--	7.5 J	7.6 J	7.1 J	7.1 J	7.5 J	7.1 J	7.4 J
Sulfate	mg/L	--	205	201	208	208	143	123	448
Total dissolved solids (TDS)	mg/L	--	880	864	872	872	596	574	1170
Appendix IV									
Antimony	mg/L	0.006	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	0.0413	0.0182	0.0188	0.0220	0.0173	<0.00200	<0.00200	0.00217
Barium	mg/L	2.0	0.217 J+	0.219 J+	0.259 J+	0.258 J+	0.0578 J+	0.0604 J+	0.0934 J+
Beryllium	mg/L	0.004	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	0.005	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Chromium	mg/L	0.1	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	0.00724	0.00547	0.00562	0.00404	0.00407	0.00196	0.00200	0.00109
Lead	mg/L	0.015	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Lithium	mg/L	0.146	0.120	0.111	0.132	0.133	0.0639	0.0572	0.137
Mercury	mg/L	0.002	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	0.100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.00695
Radium-226 & 228	pCi/L	5	1.11	0.785	0.682	0.626	0.588	0.130	0.597
Selenium	mg/L	0.05	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.145
Thallium	mg/L	0.002	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Table 4.2

**2024 Monitoring Analytical Results Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Sample Location:	MW-8	MW-8	MW-10	MW-10	MW-11	MW-11	MW-12	MW-12	
Sample ID:	MW08-GW-0624	MW08-GW-0924	MW10-GW-0324	MW10-GW-0924	MW11-GW-0324	MW11-GW-0924	MW12-GW-0324	MW12-GW-0624	
Sample Date:	6/3/2024	9/17/2024	3/13/2024	9/17/2024	3/13/2024	9/17/2024	3/12/2024	6/3/2024	
Parameters	Units								
Appendix III									
Boron	mg/L	--	2.05	0.545	0.486	0.367	0.505	1.13	--
Calcium	mg/L	--	186	164	160	206	265	261	--
Chloride	mg/L	--	7.60	7.09	9.45	17.1	136	38.5	--
Fluoride	mg/L	--	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	--
pH, lab	s.u.	--	7.2 J	7.6 J	7.2 J	7.5 J	7.0 J	7.3 J	--
Sulfate	mg/L	--	186	137	101	353	322	594	--
Total dissolved solids (TDS)	mg/L	--	956	818	748	1000	1140	1320	--
Appendix IV									
Antimony	mg/L	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--
Arsenic	mg/L	--	<0.00200	0.0467	0.0446	<0.00200	<0.00200	<0.00200	--
Barium	mg/L	--	0.0965	0.463 J+	0.343	0.0466 J+	0.0442	0.0499 J+	--
Beryllium	mg/L	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--
Cadmium	mg/L	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	--
Chromium	mg/L	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--
Cobalt	mg/L	--	0.00154	0.00115	0.00133	0.00606	0.00446	<0.000500	--
Lead	mg/L	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--
Lithium	mg/L	--	0.117	0.109	0.0904	0.114	0.109	0.152	0.144
Mercury	mg/L	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	--
Molybdenum	mg/L	--	0.0153	0.00335	0.00443	<0.00200	<0.00200	<0.00200	--
Radium-226 & 228	pCi/L	--	0.297	0.970	1.09	<0.195	0.741	<0.00416	--
Selenium	mg/L	0.0809	0.0134	<0.00500	<0.00500	<0.00500	0.00976	0.293	0.00672
Thallium	mg/L	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--

Table 4.2

**2024 Monitoring Analytical Results Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Sample Location:	MW-12	MW-12	MW-13	MW-13	MW-14	MW-14	MW-14	MW-15	
Sample ID:	DP02-GW-0624	MW12-GW-0924	MW13-GW-0324	MW13-GW-0924	MW14-GW-0324	MW14-GW-0624	MW14-GW-0924	MW15-GW-0324	
Sample Date:	6/3/2024	9/17/2024	3/12/2024	9/17/2024	3/11/2024	6/3/2024	9/17/2024	3/13/2024	
	(Duplicate)								
Parameters	Units								
Appendix III									
Boron	mg/L	--	1.44	1.80	1.31	0.332	--	0.755	0.960
Calcium	mg/L	--	263	244	283	220	--	214	208
Chloride	mg/L	--	76.2	11.5	11.0	5.41	--	17.8	26.1
Fluoride	mg/L	--	<1.00	<1.00	<1.00	<1.00	--	<1.00	<1.00
pH, lab	s.u.	--	7.0 J	7.4 J	6.9 J	7.4 J	--	6.9 J	7.4 J
Sulfate	mg/L	--	406	558	473	236	--	202	374
Total dissolved solids (TDS)	mg/L	--	1230	1310	1300	942	--	990	1140
Appendix IV									
Antimony	mg/L	--	<0.00200	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200
Arsenic	mg/L	--	<0.00200	<0.00200	0.00215	<0.00200	--	<0.00200	<0.00200
Barium	mg/L	--	0.0596	0.0354 J+	0.0420	0.0731 J+	--	0.0637	0.0665 J+
Beryllium	mg/L	--	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	<0.00100
Cadmium	mg/L	--	<0.000200	<0.000200	<0.000200	<0.000200	--	<0.000200	<0.000200
Chromium	mg/L	--	<0.00500	<0.00500	<0.00500	<0.00500	--	<0.00500	<0.00500
Cobalt	mg/L	--	<0.000500	0.00112	0.00179	0.00277	--	0.000640	0.00113
Lead	mg/L	--	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	<0.000500
Lithium	mg/L	0.141	0.133	0.112	0.138	0.137	--	0.137	0.0754
Mercury	mg/L	--	<0.000200	<0.000200	<0.000200	<0.000200	--	<0.000200	<0.000200
Molybdenum	mg/L	--	<0.00200	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200
Radium-226 & 228	pCi/L	--	1.01	<0.448	1.60	7.61	<0.264	0.684	<0.483
Selenium	mg/L	0.00617	0.193	0.00751	0.0760	<0.00500	--	0.0264	0.0677
Thallium	mg/L	--	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	<0.00100

Table 4.2

**2024 Monitoring Analytical Results Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Sample Location:	MW-15	MW-15	MW-16	MW-16	MW-17	MW-17	MW-18	MW-18	
Sample ID:	MW15-GW-0624	MW15-GW-0924	MW16-GW-0324	MW16-GW-0924	MW17-GW-0324	MW17-GW-0924	MW18-GW-0324	MW18-GW-0924	
Sample Date:	6/3/2024	9/18/2024	3/11/2024	9/18/2024	3/12/2024	9/18/2024	3/12/2024	9/18/2024	
Parameters	Units								
Appendix III									
Boron	mg/L	--	0.785	0.184	0.184	0.194	0.229	0.215	0.244
Calcium	mg/L	--	129	142	170	161	180	180	208
Chloride	mg/L	--	16.9	6.08	5.86	14.7	23.9	<5.00	<5.00
Fluoride	mg/L	--	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
pH, lab	s.u.	--	7.1 J	7.6 J	7.0 J	7.5 J	7.0 J	7.6 J	7.0 J
Sulfate	mg/L	--	116	38.2	72.0	97.1	70.5	90.9	125
Total dissolved solids (TDS)	mg/L	--	746	600	716	658	712	802	824
Appendix IV									
Antimony	mg/L	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	--	<0.00200	<0.00200	<0.00200	0.0157	0.0190	0.0260	0.0243
Barium	mg/L	--	0.110 J+	0.266 J+	0.350 J+	0.105 J+	0.143 J+	0.120 J+	0.138 J+
Beryllium	mg/L	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Chromium	mg/L	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	--	0.00241	0.00111	0.00158	0.000878	0.00148	0.00277	0.00277
Lead	mg/L	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Lithium	mg/L	--	0.0578	0.0573	0.0616	0.0780	0.0752	0.132	0.156
Mercury	mg/L	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	--	<0.00200	<0.00200	<0.00200	0.00283	0.00349	0.00206	<0.00200
Radium-226 & 228	pCi/L	--	0.213	0.705	0.691	1.71	1.16	1.39	0.854
Selenium	mg/L	0.0227	0.00854	0.0214	0.118	<0.00500	<0.00500	<0.00500	<0.00500
Thallium	mg/L	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Table 4.2

**2024 Monitoring Analytical Results Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Sample Location:	MW-19	MW-19	MW-20	MW-20	MW-21	MW-21
Sample ID:	MW19-GW-0324	MW19-GW-0924	MW20-GW-0324	MW20-GW-0924	MW21-GW-0324	MW21-GW-0924
Sample Date:	3/12/2024	9/18/2024	3/12/2024	9/18/2024	3/13/2024	9/17/2024

Parameters	Units						
Appendix III							
Boron	mg/L	0.466	0.460	0.909	1.55	0.164	0.180
Calcium	mg/L	247	317	205	262	152	169
Chloride	mg/L	57.0	62.6	156	61.6	6.82	14.5
Fluoride	mg/L	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
pH, lab	s.u.	7.5 J	6.7 J	7.5 J	7.1 J	7.6 J	6.9 J
Sulfate	mg/L	244	365	181	398	17.4	79.7
Total dissolved solids (TDS)	mg/L	1110	1360	1000	1230	498	594
Appendix IV							
Antimony	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	<0.00200	<0.00200	0.0167	0.0124	0.00680	0.00210
Barium	mg/L	0.139 J+	0.0942 J+	0.159 J+	0.0975 J+	0.483 J+	0.254
Beryllium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Chromium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	0.00636	0.00173	0.00142	0.00147	0.00543	0.000951
Lead	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Lithium	mg/L	0.144	0.182	0.0921	0.120	0.0711	0.0677
Mercury	mg/L	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Radium-226 & 228	pCi/L	1.74	0.843	1.19	0.297	4.56	1.67
Selenium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Thallium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Notes:
 < - Not detected at the associated reporting limit.
 J - Estimated concentration.
 J+ - Estimated concentration; result may be biased high.

Table 4.3
Inter-Well Comparison Values
(Statistical Upper Tolerance Limits based on Data from Upgradient Wells)
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Analyte	Unit	Date Range	Number of Samples	Percent ND	Summary Statistics		Statistical Outliers	Data Distribution	Mann-Kendall Trend Test Results			UTL Method	95/95 UTL	99/95 UTL
					Min.	Max.			Stat.	Prob.	Conclusion			
Upgradient well (pooled MW-16, MW-17, and MW-18)														
Appendix III														
Boron	mg/L	10/2018 - 9/2021	42	26%	0.183	0.29	0	Normal	1.10	0.137	No trend	Normal (KM)	0.259	0.277
Calcium	mg/L	10/2018 - 9/2021	42	0%	112	278	2	Not Normal	2.09	0.018	Increasing	--	112 - 278	112 - 278
Chloride	mg/L	10/2018 - 9/2021	42	48%	1.87	22.5	0	Not Normal	1.26	0.104	No trend	Normal (KM)	21.79	27.22
Fluoride	mg/L	10/2018 - 9/2021	42	76%	0.217	0.729	0	--	--	--	--	Non-parametric	0.729	0.729
pH, lab	s.u.	10/2018 - 9/2021	42	0%	6.9 J	7.8 J	0	Not Normal	-0.50	0.691	No trend	Non-parametric	6.9 J - 7.8 J	6.9 J - 7.8 J
Sulfate	mg/L	10/2018 - 9/2021	42	0%	35.8	410	2	Not Normal	0.76	0.224	No trend	Non-parametric	409	409
TDS	mg/L	10/2018 - 9/2021	42	2%	30.0 U	1280	3	Not Normal	2.50	0.006	Increasing	--	30.0 U - 1280	30.0 U - 1280
Appendix IV														
Antimony	mg/L	10/2018 - 9/2021	39	100%	0.00100 U	0.00200 U	0	--	--	--	--	Detection Limit	0.00200 U	0.00200 U
Arsenic	mg/L	9/2020 - 9/2024	26	35%	0.00200 U	0.0369	3	Normal	0.26	0.798	No trend	Normal (KM)	0.0413	0.0509
Barium	mg/L	10/2018 - 9/2021	42	0%	0.121	0.322	0	Gamma	3.35	4E-04	Increasing	--	0.121 - 0.322	0.121 - 0.322
Beryllium	mg/L	10/2018 - 9/2021	39	100%	0.00100 U	0.00100 U	0	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
Cadmium	mg/L	10/2018 - 9/2021	42	95%	0.000100 U	0.000500 U	0	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
Chromium	mg/L	10/2018 - 9/2021	42	100%	0.00500 U	0.00500 U	0	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
Cobalt	mg/L	10/2018 - 9/2021	42	26%	0.000500 U	0.00724	0	Not Normal	-2.56	0.995	No trend	Non-parametric	0.00724	0.00724
Lead	mg/L	10/2018 - 9/2021	42	98%	0.000500 U	0.000638	0	--	--	--	--	Detection Limit	0.000638	0.000638
Lithium	mg/L	10/2018 - 9/2021	42	0%	0.0458	0.146	0	Gamma	2.09	0.018	Increasing	--	0.0458 - 0.146	0.0458 - 0.146
Mercury	mg/L	10/2018 - 9/2021	39	100%	0.000200 U	0.000600 U	0	--	--	--	--	Detection Limit	0.000600 U	0.000600 U
Molybdenum	mg/L	10/2018 - 9/2021	42	88%	0.00200 U	0.0035	3	--	--	--	--	Non-parametric	0.0035	0.0035
Radium-226 & 228	pCi/L	10/2018 - 9/2021	42	2%	0.301 U	2.38	0	Normal	-2.15	0.984	No trend	Normal (KM)	2.01	2.36
Selenium	mg/L	10/2018 - 9/2021	42	76%	0.00500 U	0.0403	0	--	--	--	--	Non-parametric	0.0403	0.0403
Thallium	mg/L	10/2018 - 9/2021	39	100%	0.00100 U	0.00100 U	0	--	--	--	--	Detection Limit	0.00100 U	0.00100 U

Notes:

0.200 U - Not detected at the associated reporting limit.

6.9 J - Estimated concentration.

UTLs were calculated using pooled data from Upgradient wells MW-16, MW-17, and MW-18

For pH, two-sided tolerance limits are considered. The 95/95 coverage values are between the 2.5th (lower) and 97.5th (upper) percentiles, and

the 99/95 coverage values are between the 0.5th (lower) and 99.5th (upper) percentiles.

TDS - Total dissolved solids

Table 4.4

Intra-Well Comparison Values
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Analyte	Date Range	Number of Samples	Percent ND	Summary Statistics		Statistical Outliers	Data Distribution	Mann-Kendall Trend Test Results			UTL Method	95/95 UTL	99/95 UTL
					Min.	Max.			Stat.	Prob.	Conclusion			
Appendix III														
MW-2	Boron	12/2015 - 3/2020	15	13%	0.200 U	1.33	0	Normal	-20	0.346	No trend	Normal (KM)	1.78	2.18
MW-2	Calcium	12/2015 - 3/2020	15	0%	125	287	1	Gamma	-39	0.060	No trend	H Approx. Gamr	235	319
MW-2	Chloride	12/2015 - 3/2020	15	0%	5.99	30.1 J	0	Normal	9	0.692	No trend	Normal	32.7	40.0
MW-2	Fluoride	12/2015 - 9/2020	15	93%	0.100 U	1.24	--	--	--	--	--	Non-parametric	1.24	1.24
MW-2	pH, lab	12/2015 - 9/2020	15	0%	6.74 J	7.4 J	0	Normal	41	0.042	Increasing	--	6.74 J - 7.4 J	6.74 J - 7.4 J
MW-2	Sulfate	12/2015 - 3/2020	15	0%	35.5	360	1	Gamma	-49	0.018	No trend	H Approx. Gamr	247	512
MW-2	TDS	12/2015 - 9/2020	15	0%	566	1390	1	Not Normal	-41	0.048	Decreasing	--	566 - 1390	566 - 1390
Appendix IV														
MW-2	Antimony	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-2	Arsenic	12/2015 - 3/2020	14	0%	0.0156	0.230 J	1	Gamma	-1	1.000	No trend	H Approx. Gamr	0.145	0.307
MW-2	Barium	12/2015 - 9/2020	14	0%	0.125	0.222	0	Not Normal	56	0.003	Increasing	--	0.125 - 0.222	0.125 - 0.222
MW-2	Beryllium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-2	Cadmium	12/2015 - 9/2020	13	100%	ND(0.0001)	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-2	Chromium	12/2015 - 9/2020	14	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-2	Cobalt	12/2015 - 3/2020	14	0%	0.00144	0.00331	1	Lognormal	-7	0.743	No trend	Lognormal	0.00330	0.00404
MW-2	Lead	12/2015 - 9/2020	13	100%	0.000500 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-2	Lithium	12/2015 - 9/2020	14	0%	0.0589	0.131	0	Normal	-37	0.049	Decreasing	--	0.0589 - 0.131	0.0589 - 0.131
MW-2	Mercury	12/2015 - 3/2020	12	100%	0.000200 U	0.000200 U	--	--	--	--	--	Detection Limit	0.000200 U	0.000200 U
MW-2	Molybdenum	12/2015 - 3/2020	14	29%	0.00200 U	0.00269	0	Normal	-31	0.096	No trend	Normal (KM)	0.00292	0.00317
MW-2	Radium-226 & 228	12/2015 - 9/2020	14	29%	0.164 U	0.96	0	Normal	39	0.035	Increasing	--	0.164 U - 0.96	0.164 U - 0.96
MW-2	Selenium	12/2015 - 9/2020	14	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-2	Thallium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
Appendix III														
MW-4	Boron	12/2015 - 9/2020	15	0%	0.335	3.49	0	Gamma	-87	0.000	Decreasing	--	0.335 - 3.49	0.335 - 3.49
MW-4	Calcium	12/2015 - 9/2020	15	0%	127	378	0	Normal	-79	0.000	Decreasing	--	127 - 378	127 - 378
MW-4	Chloride	12/2015 - 9/2020	15	7%	5.00 U	47.2	0	Not Normal	61	0.003	Increasing	--	5.00 U - 47.2	5.00 U - 47.2
MW-4	Fluoride	12/2015 - 9/2020	15	100%	0.100 U	0.500 U	--	--	--	--	--	Detection Limit	0.500 U	0.500 U
MW-4	pH, lab	12/2015 - 9/2020	15	0%	6.73 J	7.3 J	0	Not Normal	50	0.013	Increasing	--	6.73 J - 7.3 J	6.73 J - 7.3 J
MW-4	Sulfate	12/2015 - 9/2020	15	0%	167	996	0	Normal	-81	0.000	Decreasing	--	167 - 996	167 - 996
MW-4	TDS	12/2015 - 9/2020	15	0%	712	2570	0	Normal	-68	0.001	Decreasing	--	712 - 2570	712 - 2570
Appendix IV														
MW-4	Antimony	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-4	Arsenic	12/2015 - 9/2020	14	100%	0.00200 U	0.00200 U	--	--	--	--	--	Detection Limit	0.00200 U	0.00200 U
MW-4	Barium	12/2015 - 9/2020	14	0%	0.0245	0.0444	1	Normal	36	0.055	No trend	Normal	0.0480	0.0528
MW-4	Beryllium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-4	Cadmium	12/2015 - 9/2020	13	100%	0.000100 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-4	Chromium	12/2015 - 9/2020	14	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-4	Cobalt	12/2015 - 9/2020	14	7%	0.000500 U	0.0104	0	Normal	-11	0.584	No trend	Normal (KM)	0.0129	0.0159
MW-4	Lead	12/2015 - 9/2020	13	100%	0.000500 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-4	Lithium	12/2015 - 9/2020	14	0%	0.0725	0.254	0	Normal	-69	0.000	Decreasing	--	0.0725 - 0.254	0.0725 - 0.254
MW-4	Mercury	12/2015 - 3/2020	12	100%	0.000200 U	0.000200 U	--	--	--	--	--	Detection Limit	0.000200 U	0.000200 U
MW-4	Molybdenum	12/2015 - 9/2020	14	100%	0.00200 U	0.00200 U	--	--	--	--	--	Detection Limit	0.00200 U	0.00200 U
MW-4	Radium-226 & 228	12/2015 - 9/2020	14	36%	0.212 U	0.829	0	Normal	-1	1.000	No trend	Normal (KM)	0.946	1.13
MW-4	Selenium	12/2015 - 9/2020	14	93%	0.00500 U	0.0113	--	--	--	--	--	Non-parametric	0.0113	0.0113
MW-4	Thallium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U

Table 4.4

Intra-Well Comparison Values
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Analyte	Date Range	Number of Samples	Percent ND	Summary Statistics		Statistical Outliers	Data Distribution	Mann-Kendall Trend Test Results			UTL Method	95/95 UTL	99/95 UTL
					Min.	Max.			Stat.	Prob.	Conclusion			
Appendix III														
MW-8	Boron	12/2015 - 9/2020	15	0%	0.703	5.38	0	Normal	-17	0.428	No trend	Normal	6.54	8.00
MW-8	Calcium	12/2015 - 9/2020	15	0%	150	213	0	Normal	-69	0.001	Decreasing	--	150 - 213	150 - 213
MW-8	Chloride	12/2015 - 9/2020	15	27%	4.8	13.3	0	Normal	41	0.045	Increasing	--	4.8 - 13.3	4.8 - 13.3
MW-8	Fluoride	12/2015 - 9/2020	15	93%	0.100 U	2.31	--	--	--	--	--	Non-parametric	2.31	2.31
MW-8	pH, lab	12/2015 - 9/2020	15	0%	7.04 J	7.5 J	0	Normal	30	0.142	No trend	Normal	6.86 - 7.6	6.75 - 7.71
MW-8	Sulfate	12/2015 - 9/2020	15	0%	169	819	0	Normal	-31	0.138	No trend	Normal	1063	1291
MW-8	TDS	12/2015 - 9/2020	15	0%	870	1810	0	Gamma	-33	0.113	No trend	H Approx. Gamr	2008	2898
Appendix IV														
MW-8	Antimony	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-8	Arsenic	12/2015 - 9/2020	14	100%	0.00200 U	0.00200 U	--	--	--	--	--	Detection Limit	0.00200 U	0.00200 U
MW-8	Barium	12/2015 - 9/2020	14	0%	0.0596	0.111	1	Normal	-21	0.274	No trend	Normal	0.111	0.122
MW-8	Beryllium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-8	Cadmium	12/2015 - 9/2020	13	100%	0.000100 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-8	Chromium	12/2015 - 9/2020	14	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-8	Cobalt	12/2015 - 9/2020	14	0%	0.00192	0.00395	0	Normal	5	0.827	No trend	Normal	0.00428	0.00481
MW-8	Lead	12/2015 - 9/2020	13	100%	0.000500 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-8	Lithium	12/2015 - 9/2020	14	7%	0.0500 U	0.111	0	Normal	-11	0.584	No trend	Normal	0.135	0.155
MW-8	Mercury	12/2015 - 3/2020	12	100%	0.000200 U	0.000200 U	--	--	--	--	--	Detection Limit	0.000200 U	0.000200 U
MW-8	Molybdenum	12/2015 - 9/2020	14	0%	0.00589	0.143	1	Normal	-11	0.584	No trend	Normal	0.135	0.171
MW-8	Radium-226 & 228	12/2015 - 9/2020	14	29%	0.0102 U	0.959	0	Normal	9	0.657	No trend	Normal (KM)	1.32	1.64
MW-8	Selenium	12/2015 - 9/2020	14	64%	0.00500 U	0.0985	--	--	--	--	--	Non-parametric	0.0985	0.0985
MW-8	Thallium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
Appendix III														
MW-10	Boron	12/2015 - 9/2020	15	0%	0.271	2.24	0	Lognormal	-41	0.048	Decreasing	--	0.271 - 2.24	0.271 - 2.24
MW-10	Calcium	12/2015 - 9/2020	15	0%	140	181	0	Normal	-34	0.101	No trend	Normal	188	200
MW-10	Chloride	12/2015 - 3/2020	15	33%	3.23	24.8	1	Lognormal	-1	1.000	No trend	Lognormal (KM)	23.2	39.7
MW-10	Fluoride	12/2015 - 9/2020	15	73%	ND(0.1)	6.47	--	--	--	--	--	Non-parametric	6.47	6.47
MW-10	pH, lab	12/2015 - 9/2020	15	0%	6.92 J	7.4 J	0	Not Normal	53	0.007	Increasing	--	6.92 J - 7.4 J	6.92 J - 7.4 J
MW-10	Sulfate	12/2015 - 9/2020	15	0%	14.3	267	0	Normal	-3	0.921	No trend	Normal	339	414
MW-10	TDS	12/2015 - 9/2020	15	0%	832	1150	0	Normal	-40	0.053	No trend	Normal	1237	1333
Appendix IV														
MW-10	Antimony	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-10	Arsenic	12/2015 - 9/2020	14	7%	0.00200 U	0.0622	1	Gamma	57	0.002	Increasing	--	0.00200 U - 0.0622	0.00200 U - 0.0622
MW-10	Barium	12/2015 - 9/2020	14	0%	0.111	0.618	0	Normal	43	0.021	Increasing	--	0.111 - 0.618	0.111 - 0.618
MW-10	Beryllium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-10	Cadmium	12/2015 - 9/2020	13	100%	0.000100 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-10	Chromium	12/2015 - 9/2020	14	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-10	Cobalt	12/2015 - 9/2020	14	0%	0.000611	0.00394	0	Normal	-59	0.001	Decreasing	--	0.000611 - 0.00394	0.000611 - 0.00394
MW-10	Lead	12/2015 - 9/2020	13	100%	0.000500 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-10	Lithium	12/2015 - 9/2020	14	0%	0.0533	0.138	0	Normal	-29	0.125	No trend	Normal	0.152	0.180
MW-10	Mercury	12/2015 - 3/2020	12	100%	0.000200 U	0.000200 U	--	--	--	--	--	Detection Limit	0.000200 U	0.000200 U
MW-10	Molybdenum	12/2015 - 9/2020	14	7%	0.002 U	0.00346	1	Normal	19	0.324	No trend	Normal	0.0041	0.0045
MW-10	Radium-226 & 228	12/2015 - 3/2020	14	14%	0.256 U	2.17	0	Not Normal	12	0.546	No trend	Non-parametric	2.17	2.17
MW-10	Selenium	12/2015 - 9/2020	14	93%	0.00500 U	0.0160	--	--	--	--	--	Non-parametric	0.0160	0.0160
MW-10	Thallium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U

Table 4.4

Intra-Well Comparison Values
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Analyte	Date Range	Number of Samples	Percent ND	Summary Statistics		Statistical Outliers	Data Distribution	Mann-Kendall Trend Test Results			UTL Method	95/95 UTL	99/95 UTL
					Min.	Max.			Stat.	Prob.	Conclusion			
Appendix III														
MW-11	Boron	12/2015 - 9/2020	15	0%	0.221 J	1.28	1	Normal	17	0.428	No trend	Normal	1.20	1.45
MW-11	Calcium	12/2015 - 9/2020	15	0%	210	279	0	Normal	19	0.373	No trend	Normal	287	303
MW-11	Chloride	12/2015 - 9/2020	15	0%	5.00 U	149	3	Not Normal	7	0.767	No trend	Non-parametric	149	149
MW-11	Fluoride	12/2015 - 9/2020	15	80%	0.100 U	8.89 J	--	--	--	--	--	Non-parametric	8.89 J	8.89 J
MW-11	pH, lab	12/2015 - 9/2020	15	0%	6.71 J	7.6 J	1	Not Normal	25	0.231	No trend	Non-parametric	6.71 J - 7.6 J	6.71 J - 7.6 J
MW-11	Sulfate	12/2015 - 9/2020	15	0%	240	450	0	Normal	41	0.048	Increasing	--	240 - 450	240 - 450
MW-11	TDS	12/2015 - 9/2020	15	0%	1070 J	1470	0	Normal	49	0.017	Increasing	--	1070 J - 1470	1070 J - 1470
Appendix IV														
MW-11	Antimony	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-11	Arsenic	12/2015 - 9/2020	14	100%	0.00200 U	0.00200 U	--	--	--	--	--	Detection Limit	0.00200 U	0.00200 U
MW-11	Barium	12/2015 - 9/2020	14	0%	0.0546	0.121	0	Normal	-15	0.443	No trend	Normal	0.119	0.134
MW-11	Beryllium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-11	Cadmium	12/2015 - 9/2020	13	92%	0.000100 U	0.000500 U	--	--	--	--	--	Non-parametric	0.000500 U	0.000500 U
MW-11	Chromium	12/2015 - 9/2020	14	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-11	Cobalt	12/2015 - 9/2020	14	7%	0.000500 U	0.00331	0	Normal	-3	0.913	No trend	Normal (KM)	0.0044	0.0052
MW-11	Lead	12/2015 - 9/2020	13	100%	0.000500 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-11	Lithium	12/2015 - 9/2020	14	0%	0.0912	0.136	0	Normal	-34	0.069	No trend	Normal	0.151	0.163
MW-11	Mercury	12/2015 - 3/2020	12	100%	0.000200 U	0.000200 U	--	--	--	--	--	Detection Limit	0.000200 U	0.000200 U
MW-11	Molybdenum	12/2015 - 9/2020	14	100%	0.00200 U	0.00200 U	--	--	--	--	--	Detection Limit	0.00200 U	0.00200 U
MW-11	Radium-226 & 228	12/2015 - 9/2020	14	64%	-0.0335 U	0.827 U	--	--	--	--	--	Non-parametric	0.827 U	0.827 U
MW-11	Selenium	12/2015 - 9/2020	14	79%	0.00500 U	0.0580 J	--	--	--	--	--	Non-parametric	0.0580 J	0.0580 J
MW-11	Thallium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
Appendix III														
MW-12	Boron	12/2015 - 9/2020	15	0%	1.23	5.39	0	Normal	-41	0.048	Decreasing	--	1.23 - 5.39	1.23 - 5.39
MW-12	Calcium	12/2015 - 9/2020	15	0%	165	287	1	Normal	-26	0.215	No trend	Normal	284	312
MW-12	Chloride	12/2015 - 9/2020	15	0%	10.2	333	0	Normal	-1	1.000	No trend	Normal	394	493
MW-12	Fluoride	12/2015 - 9/2020	15	80%	0.100 U	21	--	--	--	--	--	Non-parametric	21	21
MW-12	pH, lab	12/2015 - 9/2020	15	0%	7.0 J	7.5 J	1	Not Normal	57	0.004	Increasing	--	7.0 J - 7.5 J	7.0 J - 7.5 J
MW-12	Sulfate	12/2015 - 9/2020	15	0%	245	626	0	Normal	-43	0.038	Decreasing	--	245 - 626	245 - 626
MW-12	TDS	12/2015 - 9/2020	15	0%	1040	1990	0	Normal	-33	0.113	No trend	Normal	2224	2496
Appendix IV														
MW-12	Antimony	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-12	Arsenic	12/2015 - 9/2020	14	100%	0.00200 U	0.00200 U	--	--	--	--	--	Detection Limit	0.00200 U	0.00200 U
MW-12	Barium	12/2015 - 9/2020	14	0%	0.044	0.116	1	Normal	12	0.546	No trend	Normal	0.113	0.131
MW-12	Beryllium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-12	Cadmium	12/2015 - 9/2020	13	77%	0.000103	0.000500 U	--	--	--	--	--	Non-parametric	0.000500 U	0.000500 U
MW-12	Chromium	12/2015 - 9/2020	14	93%	0.00500 U	0.034	--	--	--	--	--	Non-parametric	0.034	0.034
MW-12	Cobalt	12/2015 - 9/2020	14	79%	0.000500 U	0.00182	--	--	--	--	--	Non-parametric	0.00182	0.00182
MW-12	Lead	12/2015 - 9/2020	13	100%	0.000500 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-12	Lithium	12/2015 - 9/2020	14	0%	0.0727	0.136	0	Normal	-7	0.743	No trend	Normal	0.140	0.155
MW-12	Mercury	12/2015 - 3/2020	12	100%	0.000200 U	0.000200 U	--	--	--	--	--	Detection Limit	0.000200 U	0.000200 U
MW-12	Molybdenum	12/2015 - 9/2020	14	79%	0.00200 U	0.00477	--	--	--	--	--	Non-parametric	0.00477	0.00477
MW-12	Radium-226 & 228	12/2015 - 9/2020	14	64%	0.105 U	0.81	--	--	--	--	--	Non-parametric	0.81	0.81
MW-12	Selenium	12/2015 - 9/2020	14	21%	0.00500 U	0.0766	0	Normal	-38	0.042	Decreasing	--	0.00500 U - 0.0766	0.00500 U - 0.0766
MW-12	Thallium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U

Table 4.4

Intra-Well Comparison Values
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Analyte	Date Range	Number of Samples	Percent ND	Summary Statistics		Statistical Outliers	Data Distribution	Mann-Kendall Trend Test Results			UTL Method	95/95 UTL	99/95 UTL
					Min.	Max.			Stat.	Prob.	Conclusion			
Appendix III														
MW-13	Boron	12/2015 - 9/2020	15	7%	0.200 U	1.6	0	Normal	29	0.166	No trend	Normal (KM)	2.04	2.39
MW-13	Calcium	12/2015 - 9/2020	15	0%	175	290	0	Normal	18	0.400	No trend	Normal	332	365
MW-13	Chloride	12/2015 - 9/2020	15	7%	5.00 U	54.9	1	Lognormal	25	0.235	No trend	Lognormal (KM)	76	138
MW-13	Fluoride	12/2015 - 9/2020	15	73%	0.100 U	8.21	--	--	--	--	--	Non-parametric	8.21	8.21
MW-13	pH, lab	12/2015 - 9/2020	15	0%	6.90 J	7.6 J	1	Not Normal	44	0.030	Increasing	--	6.90 J - 7.6 J	6.90 J - 7.6 J
MW-13	Sulfate	12/2015 - 9/2020	15	0%	324	618	0	Normal	59	0.004	Increasing	--	324 - 618	324 - 618
MW-13	TDS	12/2015 - 9/2020	15	0%	1140	1770	0	Normal	23	0.276	No trend	Normal	1846	2021
Appendix IV														
MW-13	Antimony	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-13	Arsenic	12/2015 - 9/2020	14	50%	0.00200 U	0.00675 J	1	Not Normal	18	0.318	No trend	Non-parametric	0.00675 J	0.00675 J
MW-13	Barium	12/2015 - 9/2020	14	0%	0.0368	0.161	1	Not Normal	-25	0.189	No trend	Non-parametric	0.161	0.161
MW-13	Beryllium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-13	Cadmium	12/2015 - 9/2020	13	100%	0.000100 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-13	Chromium	12/2015 - 9/2020	14	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-13	Cobalt	12/2015 - 9/2020	14	7%	0.000500 U	0.00624	1	Gamma	33	0.080	No trend	Approx. Gamma	0.00065	0.00816
MW-13	Lead	12/2015 - 9/2020	13	100%	0.000500 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-13	Lithium	12/2015 - 9/2020	14	0%	0.0745	0.134	0	Normal	-18	0.351	No trend	Normal	0.152	0.168
MW-13	Mercury	12/2015 - 3/2020	12	100%	0.000200 U	0.000200 U	--	--	--	--	--	Detection Limit	0.000200 U	0.000200 U
MW-13	Molybdenum	12/2015 - 9/2020	14	57%	0.00200 U	0.00296	--	--	--	--	--	Non-parametric	0.00296	0.00296
MW-13	Radium-226 & 228	12/2015 - 9/2020	14	43%	0.00847 U	1.25	0	Normal	-10	0.607	No trend	Normal (KM)	1.34	1.70
MW-13	Selenium	12/2015 - 9/2020	14	43%	0.00500 U	0.0831	0	Not Normal	-42	0.019	Decreasing	--	0.00500 U - 0.0831	0.00500 U - 0.0831
MW-13	Thallium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
Appendix III														
MW-14	Boron	12/2015 - 9/2020	15	0%	0.281	2.64	0	Normal	-1	1.000	No trend	Normal	2.89	3.57
MW-14	Calcium	12/2015 - 9/2020	15	0%	193	301	0	Normal	-65	0.001	Decreasing	--	193 - 301	193 - 301
MW-14	Chloride	12/2015 - 9/2020	15	33%	4.32 u	54.2	0	Lognormal	31	0.130	No trend	Lognormal (KM)	76.5	171.0
MW-14	Fluoride	12/2015 - 9/2020	15	80%	0.100 U	14.9	--	--	--	--	--	Non-parametric	14.90	14.90
MW-14	pH, lab	12/2015 - 9/2020	15	0%	6.80 J	7.8 J	1	Not Normal	63	0.002	Increasing	--	6.80 J - 7.8 J	6.80 J - 7.8 J
MW-14	Sulfate	12/2015 - 9/2020	15	0%	218	428	0	Normal	-51	0.013	Decreasing	--	218 - 428	218 - 428
MW-14	TDS	12/2015 - 9/2020	15	0%	1000	1810	0	Normal	-24	0.254	No trend	Normal	1846	2062
Appendix IV														
MW-14	Antimony	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-14	Arsenic	12/2015 - 9/2020	14	100%	0.00200 U	0.00200 U	--	--	--	--	--	Detection Limit	0.00200 U	0.00200 U
MW-14	Barium	12/2015 - 9/2020	14	0%	0.0604	0.133	1	Not Normal	-47	0.012	Decreasing	--	0.0604 - 0.133	0.0604 - 0.133
MW-14	Beryllium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-14	Cadmium	12/2015 - 9/2020	13	85%	0.000100 U	0.000500 U	--	--	--	--	--	Non-parametric	0.000500 U	0.000500 U
MW-14	Chromium	12/2015 - 9/2020	14	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-14	Cobalt	12/2015 - 9/2020	14	0%	0.000759	0.00494	0	Normal	-33	0.080	No trend	Normal	0.0057	0.0068
MW-14	Lead	12/2015 - 9/2020	13	100%	0.000500 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-14	Lithium	12/2015 - 9/2020	14	0%	0.0814	0.162	0	Normal	-36	0.055	No trend	Normal	0.184	0.206
MW-14	Mercury	12/2015 - 3/2020	12	100%	0.000200 U	0.000200 U	--	--	--	--	--	Detection Limit	0.000200 U	0.000200 U
MW-14	Molybdenum	12/2015 - 9/2020	14	64%	0.00200 U	0.00224	--	--	--	--	--	Non-parametric	0.00224	0.00224
MW-14	Radium-226 & 228	12/2015 - 9/2020	14	7%	0.311 U	1.79	1	Normal	-17	0.381	No trend	Normal (KM)	1.73	2.09
MW-14	Selenium	12/2015 - 9/2020	14	36%	0.00500 U	0.0289	0	Normal	-21	0.261	No trend	Normal (KM)	0.0308	0.0377
MW-14	Thallium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U

Table 4.4

Intra-Well Comparison Values
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Analyte	Date Range	Number of Samples	Percent ND	Summary Statistics		Statistical Outliers	Data Distribution	Mann-Kendall Trend Test Results			UTL Method	95/95 UTL	99/95 UTL
					Min.	Max.			Stat.	Prob.	Conclusion			
Appendix III														
MW-15	Boron	12/2015 - 9/2020	15	0%	0.386	3.05	0	Normal	-58	0.005	Decreasing	--	0.386 - 3.05	0.386 - 3.05
MW-15	Calcium	12/2015 - 9/2020	15	0%	117	264	0	Normal	-37	0.075	No trend	Normal	304	344
MW-15	Chloride	12/2015 - 9/2020	15	7%	5.00 U	19.9	0	Normal	65	0.002	Increasing	--	5.00 U - 19.9	5.00 U - 19.9
MW-15	Fluoride	12/2015 - 9/2020	15	80%	0.185	1.9	--	--	--	--	--	Non-parametric	1.90	1.90
MW-15	pH, lab	12/2015 - 9/2020	15	0%	6.78 J	7.3 J	0	Not Normal	58	0.003	Increasing	--	6.78 J - 7.3 J	6.78 J - 7.3 J
MW-15	Sulfate	12/2015 - 9/2020	15	0%	186	642	0	Normal	-49	0.018	Decreasing	--	186 - 642	186 - 642
MW-15	TDS	12/2015 - 9/2020	15	0%	640	2000	0	Normal	-52	0.012	Decreasing	--	640 - 2000	640 - 2000
Appendix IV														
MW-15	Antimony	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-15	Arsenic	12/2015 - 9/2020	14	86%	0.00200 U	0.00286	1	--	--	--	--	Non-parametric	0.0029	0.0029
MW-15	Barium	12/2015 - 9/2020	14	0%	0.041	0.0737	0	Normal	0	1.000	No trend	Normal	0.0788	0.0883
MW-15	Beryllium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-15	Cadmium	12/2015 - 9/2020	13	85%	0.000100 U	0.000500 U	--	--	--	--	--	Non-parametric	0.000500 U	0.000500 U
MW-15	Chromium	12/2015 - 9/2020	14	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-15	Cobalt	12/2015 - 9/2020	14	0%	0.000899	0.0095	2	Not Normal	-11	0.583	No trend	Non-parametric	0.0095	0.0095
MW-15	Lead	12/2015 - 9/2020	13	100%	0.000500 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-15	Lithium	12/2015 - 9/2020	14	0%	0.054	0.0923	0	Normal	1	1.000	No trend	Normal	0.107	0.120
MW-15	Mercury	12/2015 - 3/2020	12	100%	0.000200 U	0.000200 U	--	--	--	--	--	Detection Limit	0.000200 U	0.000200 U
MW-15	Molybdenum	12/2015 - 9/2020	14	100%	0.00200 U	0.00200 U	--	--	--	--	--	Detection Limit	0.00200 U	0.00200 U
MW-15	Radium-226 & 228	12/2015 - 9/2020	14	21%	0.282 U	1.05	0	Normal	17	0.328	No trend	Normal (KM)	1.26	1.49
MW-15	Selenium	12/2015 - 9/2020	14	86%	0.00500 U	0.00799	--	--	--	--	--	Non-parametric	0.00799	0.00799
MW-15	Thallium	12/2015 - 3/2020	12	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
Appendix III														
MW-16	Boron	10/2018 - 9/2020	12	50%	0.183	0.233	0	Not Normal	21	0.141	No trend	Non-parametric	0.233	0.233
MW-16	Calcium	10/2018 - 9/2020	12	0%	112	166	0	Normal	-6	0.732	No trend	Normal	193	210
MW-16	Chloride	10/2018 - 9/2020	12	58%	1.87	5.68	--	--	--	--	--	Non-parametric	5.68	5.68
MW-16	Fluoride	10/2018 - 9/2020	12	75%	0.24	0.59	--	--	--	--	--	Non-parametric	0.59	0.59
MW-16	pH, lab	10/2018 - 9/2020	12	0%	7.0 J	7.8 J	1	Not Normal	-20	0.183	No trend	Normal	6.53 - 7.93	6.33 - 8.14
MW-16	Sulfate	10/2018 - 9/2020	12	0%	35.8	80.8	0	Not Normal	-36	0.016	Decreasing	--	35.8 - 80.8	35.8 - 80.8
MW-16	TDS	10/2018 - 9/2020	12	8%	30.0 U	660	1	Not Normal	-16	0.301	No trend	Non-parametric	660	660
Appendix IV														
MW-16	Antimony	10/2018 - 3/2020	11	100%	0.001 U	0.001 U	--	--	--	--	--	Detection Limit	0.001 U	0.001 U
MW-16	Arsenic	10/2018 - 9/2020	12	100%	0.002 U	0.002 U	--	--	--	--	--	Detection Limit	0.002 U	0.002 U
MW-16	Barium	10/2018 - 9/2020	12	0%	0.152	0.242	0	Normal	16	0.304	No trend	Normal	0.266	0.293
MW-16	Beryllium	10/2018 - 3/2020	11	100%	0.001 U	0.001 U	--	--	--	--	--	Detection Limit	0.001 U	0.001 U
MW-16	Cadmium	10/2018 - 9/2020	12	100%	0.000100 U	0.0005 U	--	--	--	--	--	Detection Limit	0.0005 U	0.0005 U
MW-16	Chromium	10/2018 - 9/2020	12	100%	0.005 U	0.005 U	--	--	--	--	--	Detection Limit	0.005 U	0.005 U
MW-16	Cobalt	10/2018 - 9/2020	12	83%	0.000500 U	0.002025	--	--	--	--	--	Non-parametric	0.00203	0.00203
MW-16	Lead	10/2018 - 9/2020	12	100%	0.0005 U	0.0005 U	--	--	--	--	--	Detection Limit	0.0005 U	0.0005 U
MW-16	Lithium	10/2018 - 9/2020	12	0%	0.0458	0.0716	1	Normal	2	0.945	No trend	Normal	0.0824	0.0897
MW-16	Mercury	10/2018 - 3/2020	11	100%	0.0002 U	0.0002 U	--	--	--	--	--	Detection Limit	0.0002 U	0.0002 U
MW-16	Molybdenum	10/2018 - 9/2020	12	100%	0.00200 U	0.00200 U	--	--	--	--	--	Detection Limit	0.00200 U	0.00200 U
MW-16	Radium-226 & 228	10/2018 - 9/2020	12	8%	0.301 U	2.2	1	Normal	-32	0.034	Decreasing	--	0.301 U - 2.2	0.301 U - 2.2
MW-16	Selenium	10/2018 - 9/2020	12	17%	0.00500 U	0.0369	0	Normal	-39	0.009	Decreasing	--	0.00500 U - 0.0369	0.00500 U - 0.0369
MW-16	Thallium	10/2018 - 3/2020	11	100%	0.001 U	0.001 U	--	--	--	--	--	Detection Limit	0.001 U	0.001 U

Table 4.4

Intra-Well Comparison Values
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Analyte	Date Range	Number of Samples	Percent ND	Summary Statistics		Statistical Outliers	Data Distribution	Mann-Kendall Trend Test Results			UTL Method	95/95 UTL	99/95 UTL
					Min.	Max.			Stat.	Prob.	Conclusion			
Appendix III														
MW-17	Boron	10/2018 - 9/2020	12	33%	0.191	0.253	0	Not Normal	34	0.021	Increasing	--	0.191 - 0.253	0.191 - 0.253
MW-17	Calcium	10/2018 - 9/2020	12	0%	119	198	0	Normal	33	0.028	Increasing	--	119 - 198	119 - 198
MW-17	Chloride	10/2018 - 9/2020	12	8%	5.00 U	22.5	1	Not Normal	-44	0.003	Decreasing	--	5.00 U - 22.5	5.00 U - 22.5
MW-17	Fluoride	10/2018 - 9/2020	12	75%	0.217	0.527	--	--	--	--	--	Non-parametric	0.53	0.53
MW-17	pH, lab	10/2018 - 9/2020	12	0%	6.9 J	7.8 J	1	Not Normal	12	0.433	No trend	Non-parametric	6.9 J - 7.8 J	6.9 J - 7.8 J
MW-17	Sulfate	10/2018 - 9/2020	12	0%	61.4	93.7	1	Not Normal	24	0.115	No trend	Not Normal	93.7	103
MW-17	TDS	10/2018 - 9/2020	12	0%	638	764	0	Normal	39	0.009	Increasing	--	638 - 764	638 - 764
Appendix IV														
MW-17	Antimony	10/2018 - 3/2020	11	100%	0.00100 U	0.00100 U	--	--	--	--	--	Non-parametric	0.00100 U	0.00100 U
MW-17	Arsenic	10/2018 - 9/2020	12	0%	0.00569	0.0184	0	Normal	22	0.150	No trend	Normal	0.0214	0.0252
MW-17	Barium	10/2018 - 9/2020	12	0%	0.154	0.207	0	Normal	42	0.005	Increasing	--	0.154 - 0.207	0.154 - 0.207
MW-17	Beryllium	10/2018 - 3/2020	11	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-17	Cadmium	10/2018 - 9/2020	12	100%	0.000100 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-17	Chromium	10/2018 - 9/2020	12	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-17	Cobalt	10/2018 - 9/2020	12	0%	0.00243	0.00396	0	Normal	-44	0.003	Decreasing	--	0.00243 - 0.00396	0.00243 - 0.00396
MW-17	Lead	10/2018 - 9/2020	12	100%	0.000500 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-17	Lithium	10/2018 - 9/2020	12	0%	0.0721	0.114	0	Lognormal	32	0.034	Increasing	--	0.0721 - 0.114	0.0721 - 0.114
MW-17	Mercury	10/2018 - 3/2020	11	100%	0.000200 U	0.000200 U	--	--	--	--	--	Detection Limit	0.000200 U	0.000200 U
MW-17	Molybdenum	10/2018 - 9/2020	12	100%	0.00200 U	0.00200 U	--	--	--	--	--	Detection Limit	0.00200 U	0.00200 U
MW-17	Radium-226 & 228	10/2018 - 9/2020	12	0%	0.65	2.27	1	Lognormal	-31	0.038	Decreasing	--	0.65 - 2.27	0.65 - 2.27
MW-17	Selenium	10/2018 - 9/2020	12	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-17	Thallium	10/2018 - 3/2020	11	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
Appendix III														
MW-18	Boron	10/2018 - 3/2019	12	8%	ND(0.2)	0.266	0	Normal	-8	0.631	No trend	Normal (KM)	0.279	0.298
MW-18	Calcium	10/2018 - 9/2020	12	0%	122	187	1	Not Normal	15	0.336	No trend	Non-parametric	181	181
MW-18	Chloride	10/2018 - 9/2020	12	83%	2.85	11.4	--	--	--	--	--	Non-parametric	11.4	11.4
MW-18	Fluoride	10/2018 - 9/2020	12	83%	0.336	0.589	--	--	--	--	--	Non-parametric	0.589	0.589
MW-18	pH, lab	10/2018 - 9/2020	12	0%	6.95	7.5 J	0	Normal	8	0.615	No trend	Normal	6.64 - 7.66	6.5 - 7.8
MW-18	Sulfate	10/2018 - 9/2020	12	0%	74.9	86.85	0	Normal	0	1.000	No trend	Normal	90.6	94.4
MW-18	TDS	10/2018 - 3/2019	12	0%	691	858	1	Not Normal	18	0.244	No trend	Normal	883	932
Appendix IV														
MW-18	Antimony	10/2018 - 3/2020	11	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-18	Arsenic	10/2018 - 9/2020	12	0%	0.0045	0.0224	0	Normal	-26	0.086	No trend	Normal	0.0312	0.0378
MW-18	Barium	10/2018 - 9/2020	12	0%	0.121	0.206	1	Normal	18	0.244	No trend	Normal	0.210	0.232
MW-18	Beryllium	10/2018 - 3/2020	11	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U
MW-18	Cadmium	10/2018 - 9/2020	12	100%	0.000100 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-18	Chromium	10/2018 - 9/2020	12	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-18	Cobalt	10/2018 - 9/2020	12	0%	0.00154	0.00724	0	Normal	-25	0.099	No trend	Normal	0.0080	0.0095
MW-18	Lead	10/2018 - 9/2020	12	100%	0.000500 U	0.000500 U	--	--	--	--	--	Detection Limit	0.000500 U	0.000500 U
MW-18	Lithium	10/2018 - 9/2020	12	0%	0.0878	0.136	0	Normal	-10	0.537	No trend	Normal	0.152	0.165
MW-18	Mercury	10/2018 - 3/2020	11	100%	0.000200 U	0.000600 U	--	--	--	--	--	Detection Limit	0.000600 U	0.000600 U
MW-18	Molybdenum	10/2018 - 9/2020	12	75%	0.00200 U	0.00284	--	--	--	--	--	Non-parametric	0.00284	0.00284
MW-18	Radium-226 & 228	10/2018 - 9/2020	12	0%	0.713	1.84	0	Not Normal	-23	0.130	No trend	Non-parametric	1.64	1.64
MW-18	Selenium	10/2018 - 9/2020	12	100%	0.00500 U	0.00500 U	--	--	--	--	--	Detection Limit	0.00500 U	0.00500 U
MW-18	Thallium	10/2018 - 3/2020	11	100%	0.00100 U	0.00100 U	--	--	--	--	--	Detection Limit	0.00100 U	0.00100 U

Table 4.4

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Neal South CCR Monofill
Salix, Iowa

Well	Analyte	Date Range	Number of Samples	Percent ND	Summary Statistics		Statistical Outliers	Data Distribution	Mann-Kendall Trend Test Results			UTL Method	95/95 UTL	99/95 UTL
					Min.	Max.			Stat.	Prob.	Conclusion			
Appendix III														
MW-19	Boron	10/2018 - 9/2021	9	0%	0.23	0.318	0	Normal	-12	0.260	No trend	Normal	0.379	0.414
MW-19	Calcium	10/2018 - 9/2021	9	0%	173	257	0	Normal	-4	0.762	No trend	Normal	301	333
MW-19	Chloride	10/2018 - 9/2021	9	0%	5.4	11.6	0	Normal	21	0.034	Increasing	--	5.4 - 11.6	5.4 - 11.6
MW-19	Fluoride	10/2018 - 9/2021	9	56%	0.289	1.78	--	>50% ND	--	--	>50% ND	Non-parametric	1.78	1.78
MW-19	pH, lab	10/2018 - 9/2021	9	0%	6.8 J	7.5 J	1	Not Normal	13	0.220	No trend	Non-parametric	6.8 J - 7.5 J	6.8 J - 7.5 J
MW-19	Sulfate	10/2018 - 9/2021	9	0%	253	391	0	Normal	4	0.762	No trend	Normal	450	501
MW-19	TDS	10/2018 - 9/2021	9	0%	936	1330	0	Normal	-13	0.220	No trend	Normal	1432	1557
Appendix IV														
MW-19	Antimony	3/2019 - 9/2021	5	100%	0.00100 U	0.00200 U	--	100% ND	--	--	100% ND	Detection Limit	0.00200 U	0.00200 U
MW-19	Arsenic	10/2018 - 9/2021	9	78%	0.00200 U	0.00444	--	>50% ND	--	--	>50% ND	Non-parametric	0.00444	0.00444
MW-19	Barium	10/2018 - 9/2021	9	0%	0.119	0.184	0	Normal	-6	0.612	No trend	Normal	0.224	0.253
MW-19	Beryllium	3/2019 - 9/2021	5	100%	0.00100 U	0.00100 U	--	100% ND	--	--	100% ND	Detection Limit	0.00100 U	0.00100 U
MW-19	Cadmium	3/2019 - 9/2021	6	83%	0.000100 U	0.000500 U	--	>50% ND	--	--	>50% ND	Non-parametric	0.000500 U	0.000500 U
MW-19	Chromium	3/2019 - 9/2021	6	100%	0.00500 U	0.00500 U	--	100% ND	--	--	100% ND	Detection Limit	0.00500 U	0.00500 U
MW-19	Cobalt	10/2018 - 9/2021	9	0%	0.00455	0.0102	0	Normal	6	0.612	No trend	Normal	0.0133	0.0155
MW-19	Lead	3/2019 - 9/2021	6	100%	0.000500 U	0.000500 U	--	100% ND	--	--	100% ND	Detection Limit	0.000500 U	0.000500 U
MW-19	Lithium	10/2018 - 9/2021	9	0%	0.093	0.149	0	Normal	-18	0.076	No trend	Normal	0.184	0.207
MW-19	Mercury	3/2019 - 9/2021	5	100%	0.000200 U	0.000200 U	--	100% ND	--	--	100% ND	Maximum	0.000200 U	0.000200 U
MW-19	Molybdenum	10/2018 - 9/2021	9	100%	0.00200 U	0.00200 U	--	100% ND	--	--	100% ND	Detection Limit	0.00200 U	0.00200 U
MW-19	Radium-226 & 228	10/2018 - 9/2021	9	0%	0.57	1.9	0	Normal	-10	0.358	No trend	Normal	2.22	2.66
MW-19	Selenium	10/2018 - 9/2021	9	100%	0.00500 U	0.00500 U	--	100% ND	--	--	100% ND	Detection Limit	0.00500 U	0.00500 U
MW-19	Thallium	3/2019 - 9/2021	5	100%	0.00100 U	0.00100 U	--	100% ND	--	--	100% ND	Detection Limit	0.00100 U	0.00100 U
Appendix III														
MW-20	Boron	10/2018 - 9/2021	9	0%	0.349	1.04	0	Normal	-8	0.476	No trend	Normal	1.23	1.45
MW-20	Calcium	10/2018 - 9/2021	9	0%	117	180	0	Normal	-16	0.120	No trend	Normal	210	233
MW-20	Chloride	10/2018 - 9/2021	9	44%	5.00 U	23.8	0	Gamma	-16	0.120	No trend	KM Normal	30.0	37.4
MW-20	Fluoride	10/2018 - 9/2021	9	67%	0.227	0.521	--	>50% ND	--	--	>50% ND	Non-parametric	0.52	0.52
MW-20	pH, lab	10/2018 - 9/2021	9	0%	7.0 J	7.6 J	1	Normal	7	0.544	No trend	Normal	6.68 - 7.84	6.48 - 8.01
MW-20	Sulfate	10/2018 - 9/2021	9	0%	60.3	236	0	Normal	-23	0.018	Decreasing	--	60.3 - 236	60.3 - 236
MW-20	TDS	10/2018 - 9/2021	9	0%	486	908	0	Normal	-18	0.076	No trend	Normal	1046	1181
Appendix IV														
MW-20	Antimony	3/2019 - 9/2021	5	100%	0.00100 U	0.00200 U	--	100% ND	--	--	100% ND	Detection Limit	0.00200 U	0.00200 U
MW-20	Arsenic	10/2018 - 9/2021	9	0%	0.00206	0.0234 J	0	Normal	-14	0.180	No trend	Normal	0.030	0.037
MW-20	Barium	10/2018 - 9/2021	9	0%	0.093	0.127	0	Normal	-15	0.150	No trend	Normal	0.145	0.159
MW-20	Beryllium	3/2019 - 9/2021	5	100%	0.00100 U	0.00100 U	--	100% ND	--	--	100% ND	Detection Limit	0.00100 U	0.00100 U
MW-20	Cadmium	3/2019 - 9/2021	6	100%	0.000100 U	0.000500 U	--	100% ND	--	--	100% ND	Detection Limit	0.000500 U	0.000500 U
MW-20	Chromium	3/2019 - 9/2021	6	100%	0.00500 U	0.00500 U	--	100% ND	--	--	100% ND	Detection Limit	0.00500 U	0.00500 U
MW-20	Cobalt	10/2018 - 9/2021	9	0%	0.00158	0.00574	0	Normal	10	0.358	No trend	Normal	0.0073	0.0089
MW-20	Lead	3/2019 - 9/2021	6	100%	0.000500 U	0.000500 U	--	100% ND	--	--	100% ND	Detection Limit	0.000500 U	0.000500 U
MW-20	Lithium	10/2018 - 9/2021	9	0%	0.0641	0.111	0	Normal	-10	0.358	No trend	Normal	0.125	0.141
MW-20	Mercury	3/2019 - 9/2021	5	100%	0.000200 U	0.000200 U	--	100% ND	--	--	100% ND	Detection Limit	0.000200 U	0.000200 U
MW-20	Molybdenum	10/2018 - 9/2021	9	100%	0.00200 U	0.00200 U	--	100% ND	--	--	100% ND	Detection Limit	0.00200 U	0.00200 U
MW-20	Radium-226 & 228	10/2018 - 9/2021	9	22%	0.331 U	2.11	1	Normal	-15	0.150	No trend	KM Normal	2.47	3.04
MW-20	Selenium	10/2018 - 9/2021	9	67%	0.00500 U	0.0132	--	>50% ND	--	--	>50% ND	Non-parametric	0.0132	0.0132
MW-20	Thallium	3/2019 - 9/2021	5	100%	0.00100 U	0.00100 U	--	100% ND	--	--	100% ND	Detection Limit	0.00100 U	0.00100 U

Table 4.4

Intra-Well Comparison Values
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Analyte	Date Range	Number of Samples	Percent ND	Summary Statistics		Statistical Outliers	Data Distribution	Mann-Kendall Trend Test Results			UTL Method	95/95 UTL	99/95 UTL
					Min.	Max.			Stat.	Prob.	Conclusion			
Appendix III														
MW-21	Boron	10/2018 - 9/2021	9	44%	0.141	0.225	0	Normal	-2	0.920	No trend	Normal	0.266	0.295
MW-21	Calcium	10/2018 - 9/2021	9	0%	125	154	0	Normal	-26	0.006	Decreasing	--	125 - 154	125 - 154
MW-21	Chloride	10/2018 - 9/2021	9	11%	3.68	8.95	0	Normal	28	0.002	Increasing	--	3.68 - 8.95	3.68 - 8.95
MW-21	Fluoride	10/2018 - 9/2021	9	67%	0.215	0.553	--	>50% ND	--	--	>50% ND	Non-parametric	0.55	0.55
MW-21	pH, lab	10/2018 - 9/2021	9	0%	6.9 J	7.7 J	1	Not Normal	21	0.034	Increasing	--	6.9 J - 7.7 J	6.9 J - 7.7 J
MW-21	Sulfate	10/2018 - 9/2021	9	0%	8.46	74.8	0	Normal	2	0.920	No trend	Normal	110	135
MW-21	TDS	10/2018 - 9/2021	9	0%	424	626	0	Normal	-27	0.004	Decreasing	--	424 - 626	424 - 626
Appendix IV														
MW-21	Antimony	3/2019 - 9/2021	5	100%	0.00100 U	0.00200 U	--	100% ND	--	--	100% ND	Detection Limit	0.00200 U	0.00200 U
MW-21	Arsenic	10/2018 - 9/2021	9	100%	0.00200 U	0.00200 U	--	100% ND	--	--	100% ND	Detection Limit	0.00200 U	0.00200 U
MW-21	Barium	10/2018 - 9/2021	9	0%	0.166	0.318	0	Normal	10	0.358	No trend	Normal	0.363	0.415
MW-21	Beryllium	3/2019 - 9/2021	5	100%	0.00100 U	0.00100 U	--	100% ND	--	--	100% ND	Detection Limit	0.00100 U	0.00100 U
MW-21	Cadmium	3/2019 - 9/2021	6	67%	0.000100 U	0.000500 U	--	>50% ND	--	--	>50% ND	Non-parametric	0.000500 U	0.000500 U
MW-21	Chromium	3/2019 - 9/2021	6	100%	0.00500 U	0.00500 U	--	100% ND	--	--	100% ND	Detection Limit	0.00500 U	0.00500 U
MW-21	Cobalt	10/2018 - 9/2021	9	22%	0.000500 U	0.00187	0	Normal	1	1.000	No trend	KM Normal	0.00219	0.00268
MW-21	Lead	3/2019 - 9/2021	6	83%	0.000500 U	0.000517	--	>50% ND	--	--	>50% ND	Non-parametric	0.00052	0.00052
MW-21	Lithium	10/2018 - 9/2021	9	0%	0.0621	0.0841	0	Normal	-14	0.180	No trend	Normal	0.093	0.101
MW-21	Mercury	3/2019 - 9/2021	5	100%	0.000200 U	0.000200 U	--	100% ND	--	--	100% ND	Detection Limit	0.000200 U	0.000200 U
MW-21	Molybdenum	10/2018 - 9/2021	9	78%	0.00200 U	0.00243	--	>50% ND	--	--	>50% ND	Non-parametric	0.00243	0.00243
MW-21	Radium-226 & 228	10/2018 - 9/2021	9	0%	0.825	2.21	0	Normal	0	1.000	No trend	Normal	2.83	3.40
MW-21	Selenium	10/2018 - 9/2021	9	100%	0.00500 U	0.00500 U	--	100% ND	--	--	100% ND	Detection Limit	0.00500 U	0.00500 U
MW-21	Thallium	3/2019 - 9/2021	5	80%	0.00100 U	0.00136	--	>50% ND	--	--	>50% ND	Non-parametric	0.00136	0.00136

Notes:

0.200 U - Not detected at the associated reporting limit.

6.74 J - Estimated concentration.

KM - UTLs were calculated using Kaplan-Meyer estimates for non-detects.

WH - UTLs were calculated using gamma distribution and the Wilson-Hilferty method.

TDS - Total dissolved solids

The following actual confidence coefficients were achieved for the following number of baseline samples:

n	at 95 percent coverage	at 99 percent coverage
7	0.302 (30% confidence)	0.0679 (6.8% confidence)
12	0.460 (46% confidence)	0.114 (11% confidence)
14	0.512 (51% confidence)	0.131 (13% confidence)
15	0.537 (54% confidence)	0.14 (14% confidence)
16	0.560 (56% confidence)	0.149 (15% confidence)

Table 4.5

Inter-Well Comparisons for 2024 Assessment Monitoring Data vs. Upgradient Background UTLs
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Observation	Monitoring Event	Appendix III Analytes						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
Pooled Upgradient (MW-16, MW-17, and MW-18)	Baseline 95/95 UTL		0.259	112 - 278 †	21.8	0.729	6.9 J - 7.8 J	409	30.0 U - 1280 †
	Baseline 99/95 UTL		0.277	112 - 278 †	27.2	0.729	6.9 J - 7.8 J	409	30.0 U - 1280 †
	MCL/GWPS		None	None	None	4.0 ^a	None	None	None
MW-2	3/12/2024	Assessment	0.631 / 0.602	216 / 218	5.00 U / 5.00 U	1.00 U / 1.00 U	7.5 J / 7.6 J	205 / 201	880 / 864
	9/18/2024	Assessment	0.547 / 0.551	220 / 222	5.00 U / 5.00 U	1.00 U / 1.00 U	7.1 J / 7.1 J	208 / 208	872 / 872
MW-4	3/12/2024	Assessment	0.223	125	29.6	1.00 U	7.5 J	143	596
	9/18/2024	Assessment	0.222	119	32.6	1.00 U	7.1 J	123	574
MW-8	3/13/2024	Assessment	3.27	209	5.00 U	1.00 U	7.4 J	448	1170
	6/3/2024	Verification	--	--	--	--	--	--	--
	9/17/2024	Assessment	2.05	186	7.60	1.00 U	7.2 J	186	956
MW-10	3/13/2024	Assessment	0.545	164	7.09	1.00 U	7.6 J	137	818
	9/17/2024	Assessment	0.486	160	9.45	1.00 U	7.2 J	101	748
MW-11	3/13/2024	Assessment	0.367	206	17.1	1.00 U	7.5 J	353	1000
	9/17/2024	Assessment	0.505	265	136	1.00 U	7.0 J	322	1140
MW-12	3/12/2024	Assessment	1.13	261	38.5	1.00 U	7.3 J	594	1320
	6/3/2024	Verification	--/--	--/--	--/--	--/--	--/--	--/--	--/--
	9/17/2024	Assessment	1.44	263	76.2	1.00 U	7.0 J	406	1230
MW-13	3/12/2024	Assessment	1.80	244	11.5	1.00 U	7.4 J	558	1310
	9/17/2024	Assessment	1.31	283	11.0	1.00 U	6.9 J	473	1300
MW-14	3/11/2024	Assessment	0.332	220	5.41	1.00 U	7.4 J	236	942
	6/3/2024	Verification	--	--	--	--	--	--	--
	9/17/2024	Assessment	0.755	214	17.8	1.00 U	6.9 J	202	990
MW-15	3/13/2024	Assessment	0.960	208	26.1	1.00 U	7.4 J	374	1140
	6/3/2024	Verification	--	--	--	--	--	--	--
	9/18/2024	Assessment	0.785	129	16.9	1.00 U	7.1 J	116	746
MW-16 (Background)	3/11/2024	Assessment	0.184	142	6.08	1.00 U	7.6 J	38.2	600
	9/18/2024	Verification	0.184	170	5.86	1.00 U	7.0 J	72.0	716
MW-17 (Background)	3/12/2024	Assessment	0.194	161	14.7	1.00 U	7.5 J	97.1	658
	9/18/2024	Assessment	0.229	180	23.9	1.00 U	7.0 J	70.5	712
MW-18 (Background)	3/12/2024	Assessment	0.215	180	5.00 U	1.00 U	7.6 J	90.9	802
	9/18/2024	Assessment	0.244	208	5.00 U	1.00 U	7.0 J	125	824

Table 4.5

**Inter-Well Comparisons for 2024 Assessment Monitoring Data vs. Upgradient Background UTLs
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Well	Observation	Monitoring Event	Appendix III Analytes						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
Pooled Upgradient (MW-16, MW-17, and MW-18)	Baseline 95/95 UTL		0.259	112 - 278 †	21.8	0.729	6.9 J - 7.8 J	409	30.0 U - 1280 †
	Baseline 99/95 UTL		0.277	112 - 278 †	27.2	0.729	6.9 J - 7.8 J	409	30.0 U - 1280 †
	MCL/GWPS		None	None	None	4.0 ^a	None	None	None
MW-19	3/12/2024	Assessment	0.466	247	57.0	1.00 U	7.5 J	244	1110
	9/18/2024	Assessment	0.460	317	62.6	1.00 U	6.7 J	365	1360
MW-20	3/12/2024	Assessment	0.909	205	156	1.00 U	7.5 J	181	1000
	9/18/2024	Assessment	1.550	262	61.6	1.00 U	7.1 J	398	1230
MW-21	3/13/2024	Assessment	0.164	152	6.82	1.00 U	7.6 J	17.4	498
	9/17/2024	Verification	0.180	169	14.5	1.00 U	6.9 J	79.7	594

Table 4.5

Inter-Well Comparisons for 2024 Assessment Monitoring Data vs. Upgradient Background UTLs
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Observation	Appendix IV Analytes						
		Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L	Chromium mg/L	Cobalt mg/L
Pooled Upgradient (MW-16, MW-17, and MW-18)	Baseline 95/95 UTL	0.00200 U	0.0413	0.121 - 0.322 †	0.00100 U	0.000500 U	0.00500 U	0.00724
	Baseline 99/95 UTL	0.00200 U	0.0509	0.121 - 0.322 †	0.00100 U	0.000500 U	0.00500 U	0.00724
	MCL/GWPS	0.006 ^a	0.0413 ^c	2.0 ^a	0.004 ^a	0.005 ^a	0.1 ^a	0.00724 ^c
MW-2	3/12/2024	0.00200 U/0.00200 U	0.0182/0.0188	0.217 J+ /0.219 J+	0.00100 U/0.00100 U	0.000200 U/0.000200 U	0.00500 U/0.00500 U	0.00547/0.00562
	9/18/2024	0.00200 U/0.00200 U	0.0220/0.0173	0.259 J+ /0.258 J+	0.00100 U/0.00100 U	0.000200 U/0.000200 U	0.00500 U/0.00500 U	0.00404/0.00407
MW-4	3/12/2024	0.00200 U	0.00200 U	0.0578 J+	0.00100 U	0.000200 U	0.00500 U	0.00196
	9/18/2024	0.00200 U	0.00200 U	0.0604 J+	0.00100 U	0.000200 U	0.00500 U	0.00200
MW-8	3/13/2024	0.00200 U	0.00217	0.0934 J+	0.00100 U	0.000200 U	0.00500 U	0.00109
	6/3/2024	--	--	--	--	--	--	--
	9/17/2024	0.00200 U	0.00200 U	0.0965	0.00100 U	0.000200 U	0.00500 U	0.00154
MW-10	3/13/2024	0.00200 U	0.0467	0.463 J+	0.00100 U	0.000200 U	0.00500 U	0.00115
	9/17/2024	0.00200 U	0.0446	0.343	0.00100 U	0.000200 U	0.00500 U	0.00133
MW-11	3/13/2024	0.00200 U	0.00200 U	0.0466 J+	0.00100 U	0.000200 U	0.00500 U	0.00606
	9/17/2024	0.00200 U	0.00200 U	0.0442	0.00100 U	0.000200 U	0.00500 U	0.00446
MW-12	3/12/2024	0.00200 U	0.00200 U	0.0499 J+	0.00100 U	0.000200 U	0.00500 U	0.000500 U
	6/3/2024	--/--	--/--	--/--	--/--	--/--	--/--	--/--
	9/17/2024	0.00200 U	0.00200 U	0.0596	0.00100 U	0.000200 U	0.00500 U	0.000500 U
MW-13	3/12/2024	0.00200 U	0.00200 U	0.0354 J+	0.00100 U	0.000200 U	0.00500 U	0.00112
	9/17/2024	0.00200 U	0.00215	0.0420	0.00100 U	0.000200 U	0.00500 U	0.00179
MW-14	3/11/2024	0.00200 U	0.00200 U	0.0731 J+	0.00100 U	0.000200 U	0.00500 U	0.00277
	6/3/2024	--	--	--	--	--	--	--
	9/17/2024	0.00200 U	0.00200 U	0.0637	0.00100 U	0.000200 U	0.00500 U	0.00064
MW-15	3/13/2024	0.00200 U	0.00200 U	0.0665 J+	0.00100 U	0.000200 U	0.00500 U	0.00113
	6/3/2024	--	--	--	--	--	--	--
	9/18/2024	0.00200 U	0.00200 U	0.110 J+	0.00100 U	0.000200 U	0.00500 U	0.00241
MW-16 (Background)	3/11/2024	0.00200 U	0.00200 U	0.266 J+	0.00100 U	0.000200 U	0.00500 U	0.00111
	9/18/2024	0.00200 U	0.00200 U	0.350 J+	0.00100 U	0.000200 U	0.00500 U	0.00158
MW-17 (Background)	3/12/2024	0.00200 U	0.0157	0.105 J+	0.00100 U	0.000200 U	0.00500 U	0.000878
	9/18/2024	0.00200 U	0.0190	0.143 J+	0.00100 U	0.000200 U	0.00500 U	0.00148
MW-18 (Background)	3/12/2024	0.00200 U	0.0260	0.120 J+	0.00100 U	0.000200 U	0.00500 U	0.00277
	9/18/2024	0.00200 U	0.0243	0.138 J+	0.00100 U	0.000200 U	0.00500 U	0.00277

Table 4.5

Inter-Well Comparisons for 2024 Assessment Monitoring Data vs. Upgradient Background UTLs
 MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Well	Observation	Appendix IV Analytes						
		Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L	Chromium mg/L	Cobalt mg/L
Pooled Upgradient (MW-16, MW-17, and MW-18)	Baseline 95/95 UTL	0.00200 U	0.0413	0.121 - 0.322 †	0.00100 U	0.000500 U	0.00500 U	0.00724
	Baseline 99/95 UTL	0.00200 U	0.0509	0.121 - 0.322 †	0.00100 U	0.000500 U	0.00500 U	0.00724
	MCL/GWPS	0.006 ^a	0.0413 ^c	2.0 ^a	0.004 ^a	0.005 ^a	0.1 ^a	0.00724 ^c
MW-19	3/12/2024	0.00200 U	0.00200 U	0.139 J+	0.00100 U	0.000200 U	0.00500 U	0.00636
	9/18/2024	0.00200 U	0.00200 U	0.0942 J+	0.00100 U	0.000200 U	0.00500 U	0.00173
MW-20	3/12/2024	0.00200 U	0.0167	0.159 J+	0.00100 U	0.000200 U	0.00500 U	0.00142
	9/18/2024	0.00200 U	0.0124	0.0975 J+	0.00100 U	0.000200 U	0.00500 U	0.00147
MW-21	3/13/2024	0.00200 U	0.00680	0.483 J+	0.00100 U	0.000200 U	0.00500 U	0.00543
	9/17/2024	0.00200 U	0.00210	0.254	0.00100 U	0.000200 U	0.00500 U	0.000951

Table 4.5

Inter-Well Comparisons for 2024 Assessment Monitoring Data vs. Upgradient Background UTLs
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Observation	Appendix IV Analytes						
		Lead mg/L	Lithium mg/L	Mercury mg/L	Molybdenum mg/L	Radium-226 & 228 pCi/L	Selenium mg/L	Thallium mg/L
Pooled Upgradient (MW-16, MW-17, and MW-18)	Baseline 95/95 UTL	0.000638	0.0458 - 0.146 †	0.000600 U	0.00350	2.01	0.0403	0.00100 U
	Baseline 99/95 UTL	0.000638	0.0458 - 0.146 †	0.000600 U	0.00350	2.36	0.0403	0.00100 U
	MCL/GWPS	0.015 ^b	0.146 ^c	0.002 ^a	0.100 ^b	5 ^a	0.05 ^a	0.002 ^a
MW-2	3/12/2024	0.000500 U/0.000500 U	0.120/0.111	0.000200 U/0.000200 U	0.00200 U/0.00200 U	1.11/0.785	0.00500 U/0.00500 U	0.00100 U/0.00100 U
	9/18/2024	0.000500 U/0.000500 U	0.132/0.133	0.000200 U/0.000200 U	0.00200 U/0.00200 U	0.682/0.626	0.00500 U/0.00500 U	0.00100 U/0.00100 U
MW-4	3/12/2024	0.000500 U	0.0639	0.000200 U	0.00200 U	0.588	0.00500 U	0.00100 U
	9/18/2024	0.000500 U	0.0572	0.000200 U	0.00200 U	0.130	0.00500 U	0.00100 U
MW-8	3/13/2024	0.000500 U	0.137	0.000200 U	0.00695	0.597	0.145	0.00100 U
	6/3/2024	--	--	--	--	--	0.0809	--
MW-10	3/13/2024	0.000500 U	0.109	0.000200 U	0.00335	0.970	0.00500 U	0.00100 U
	9/17/2024	0.000500 U	0.0904	0.000200 U	0.00443	1.09	0.00500 U	0.00100 U
MW-11	3/13/2024	0.000500 U	0.114	0.000200 U	0.00200 U	0.195 U	0.00500 U	0.00100 U
	9/17/2024	0.000500 U	0.109	0.000200 U	0.00200 U	0.741	0.00976	0.00100 U
MW-12	3/12/2024	0.000500 U	0.152	0.000200 U	0.00200 U	0.00416 U	0.293	0.00100 U
	6/3/2024	--/--	0.144/0.141	--/--	--/--	--/--	0.00672/0.00617	--/--
	9/17/2024	0.000500 U	0.133	0.000200 U	0.00200 U	1.01	0.193	0.00100 U
MW-13	3/12/2024	0.000500 U	0.112	0.000200 U	0.00200 U	0.448 U	0.00751	0.00100 U
	9/17/2024	0.000500 U	0.138	0.000200 U	0.00200 U	1.60	0.0760	0.00100 U
MW-14	3/11/2024	0.000500 U	0.137	0.000200 U	0.00200 U	7.61	0.00500 U	0.00100 U
	6/3/2024	--	--	--	--	0.264 U	--	--
MW-15	9/17/2024	0.000500 U	0.137	0.000200 U	0.00200 U	0.684	0.0264	0.00100 U
	3/13/2024	0.000500 U	0.0754	0.000200 U	0.00200 U	0.483 U	0.0677	0.00100 U
	6/3/2024	--	--	--	--	--	0.0227	--
MW-16 (Background)	9/18/2024	0.000500 U	0.0578	0.000200 U	0.00200 U	0.213	0.00854	0.00100 U
	3/11/2024	0.000500 U	0.0573	0.000200 U	0.00200 U	0.705	0.0214	0.00100 U
	9/18/2024	0.000500 U	0.0616	0.000200 U	0.00200 U	0.691	0.118	0.00100 U
MW-17 (Background)	3/12/2024	0.000500 U	0.0780	0.000200 U	0.00283	1.71	0.00500 U	0.00100 U
	9/18/2024	0.000500 U	0.0752	0.000200 U	0.00349	1.16	0.00500 U	0.00100 U
MW-18 (Background)	3/12/2024	0.000500 U	0.132	0.000200 U	0.00206	1.39	0.00500 U	0.00100 U
	9/18/2024	0.000500 U	0.156	0.000200 U	0.00200 U	0.854	0.00500 U	0.00100 U

Table 4.5

**Inter-Well Comparisons for 2024 Assessment Monitoring Data vs. Upgradient Background UTLs
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Well	Observation	Appendix IV Analytes						
		Lead mg/L	Lithium mg/L	Mercury mg/L	Molybdenum mg/L	Radium-226 & 228 pCi/L	Selenium mg/L	Thallium mg/L
Pooled Upgradient (MW-16, MW-17, and MW-18)	Baseline 95/95 UTL	0.000638	0.0458 - 0.146 †	0.000600 U	0.00350	2.01	0.0403	0.00100 U
	Baseline 99/95 UTL	0.000638	0.0458 - 0.146 †	0.000600 U	0.00350	2.36	0.0403	0.00100 U
	MCL/GWPS	0.015 ^b	0.146 ^c	0.002 ^a	0.100 ^b	5 ^a	0.05 ^a	0.002 ^a
MW-19	3/12/2024	0.000500 U	0.144	0.000200 U	0.00200 U	1.74	0.00500 U	0.00100 U
	9/18/2024	0.000500 U	0.182	0.000200 U	0.00200 U	0.843	0.00500 U	0.00100 U
MW-20	3/12/2024	0.000500 U	0.0921	0.000200 U	0.00200 U	1.19	0.00500 U	0.00100 U
	9/18/2024	0.000500 U	0.120	0.000200 U	0.00200 U	0.297	0.00500 U	0.00100 U
MW-21	3/13/2024	0.000500 U	0.0711	0.000200 U	0.00200 U	4.56	0.00500 U	0.00100 U
	9/17/2024	0.000500 U	0.0677	0.000200 U	0.00200 U	1.67	0.00500 U	0.00100 U

Notes:

28.0 Value exceeds intra-well baseline 95/95 UTL or is outside of baseline range.

7.2 J Value exceeds intra-well baseline 99/95 UTL.

† - Trend present during baseline period, no UTL values calculated (baseline range listed for comparison).

368/370 - Field duplicate results.

U - Not detected at the associated reporting limit.

None - No MCL established.

J - Estimated concentration.

^a Maximum contaminant level (MCL).

NS - Not Sampled

^b Groundwater protection standard (GWPS) established under 40 CFR 257.95(h)(2).

^c Determined from baseline data set for MW-16, MW-17, and MW-18.

Table 4.6

Intra-Well Comparisons for 2024 Assessment Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Observation	Monitoring Event	Appendix III Analytes						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
	MCL/GWPS		None	None	None	4.0^a	None	None	None
MW-2	Baseline 95/95 UTL		1.78	235	32.7	1.24	6.74 J - 7.4 J	247	566 - 1390 †
	Baseline 99/95 UTL		2.18	319	40.0	1.24	6.74 J - 7.4 J	512	566 - 1390 †
	3/12/2024	Assessment	0.631 /0.602	216 /218	5.00 U /5.00 U	1.00 U /1.00 U	7.5 J /7.6 J	205 /201	880 /864
	9/18/2024	Assessment	0.547 /0.551	220 /222	5.00 U /5.00 U	1.00 U /1.00 U	7.1 J /7.1 J	208 /208	872 /872
MW-4	Baseline 95/95 UTL		0.335 - 3.49 †	127 - 378 †	5.00 U - 47.2 †	0.500 U	6.73 J - 7.3 J	167 - 996 †	712 - 2570 †
	Baseline 99/95 UTL		0.335 - 3.49 †	127 - 378 †	5.00 U - 47.2 †	0.500 U	6.73 J - 7.3 J	167 - 996 †	712 - 2570 †
	3/12/2024	Assessment	0.223	125	29.6	1.00 U	7.5 J	143	596
	9/18/2024	Assessment	0.222	119	32.6	1.00 U	7.1 J	123	574
MW-8	Baseline 95/95 UTL		6.54	150 - 213 †	4.8 - 13.3 †	2.31	6.86 - 7.6	1063	2008
	Baseline 99/95 UTL		8.00	150 - 213 †	4.8 - 13.3 †	2.31	6.86 - 7.6	1291	2898
	3/13/2024	Assessment	3.27	209	5.00 U	1.00 U	7.4 J	448	1170
	6/3/2024	Verification	--	--	--	--	--	--	--
9/17/2024	Assessment	2.05	186	7.60	1.00 U	7.2 J	186	956	
MW-10	Baseline 95/95 UTL		0.271 - 2.24 †	188	23.2	6.47	6.92 J - 7.4 J	339	1237
	Baseline 99/95 UTL		0.271 - 2.24 †	200	39.7	6.47	6.92 J - 7.4 J	414	1333
	3/13/2024	Assessment	0.545	164	7.09	1.00 U	7.6 J	137	818
	9/17/2024	Assessment	0.486	160	9.45	1.00 U	7.2 J	101	748
MW-11	Baseline 95/95 UTL		1.20	287	149	8.89 J	6.71 J - 7.6 J	240 - 450 †	1070 J - 1470 †
	Baseline 99/95 UTL		1.45	303	149	8.89 J	6.71 J - 7.6 J	240 - 450 †	1070 J - 1470 †
	3/13/2024	Assessment	0.367	206	17.1	1.00 U	7.5 J	353	1000
	9/17/2024	Assessment	0.505	265	136	1.00 U	7.0 J	322	1140
MW-12	Baseline 95/95 UTL		1.23 - 5.39 †	284	394	21.0	7.0 J - 7.5 J	245 - 626 †	2224
	Baseline 99/95 UTL		1.23 - 5.39 †	312	493	21.0	7.0 J - 7.5 J	245 - 626 †	2496
	3/12/2024	Assessment	1.13	261	38.5	1.00 U	7.3 J	594	1320
	6/3/2024	Verification	--/--	--/--	--/--	--/--	--/--	--/--	--/--
9/17/2024	Assessment	1.44	263	76.2	1.00 U	7.0 J	406	1230	
MW-13	Baseline 95/95 UTL		2.04	332	76	8.21	6.90 J - 7.6 J	324 - 618 †	1846
	Baseline 99/95 UTL		2.39	365	138	8.21	6.90 J - 7.6 J	324 - 618 †	2021
	3/12/2024	Assessment	1.80	244	11.5	1.00 U	7.4 J	558	1310
	9/17/2024	Assessment	1.31	283	11.0	1.00 U	6.9 J	473	1300
MW-14	Baseline 95/95 UTL		2.89	193 - 301 †	76.5	14.9	6.80 J - 7.8 J	218 - 428 †	1846
	Baseline 99/95 UTL		3.57	193 - 301 †	171	14.9	6.80 J - 7.8 J	218 - 428 †	2062
	3/11/2024	Assessment	0.332	220	5.41	1.00 U	7.4 J	236	942
	6/3/2024	Verification	--	--	--	--	--	--	--
9/17/2024	Assessment	0.755	214	17.8	1.00 U	6.9 J	202	990	

Table 4.6

Intra-Well Comparisons for 2024 Assessment Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Observation	Monitoring Event	Appendix III Analytes						
			Boron mg/L	Calcium mg/L	Chloride mg/L	Fluoride mg/L	pH, lab s.u.	Sulfate mg/L	TDS mg/L
	MCL/GWPS		None	None	None	4.0^a	None	None	None
MW-15	Baseline 95/95 UTL		0.386 - 3.05 †	304	5.00 U - 19.9 †	1.90	6.78 J - 7.3 J	186 - 642 †	640 - 2000 †
	Baseline 99/95 UTL		0.386 - 3.05 †	344	5.00 U - 19.9 †	1.90	6.78 J - 7.3 J	186 - 642 †	640 - 2000 †
	3/13/2024	Assessment	0.960	208	26.1	1.00 U	7.4 J	374	1140
	6/3/2024	Verification	--	--	--	--	--	--	--
	9/18/2024	Assessment	0.785	129	16.9	1.00 U	7.1 J	116	746
MW-16 (Background)	Baseline 95/95 UTL		0.233	193	5.68	0.590	6.53 - 7.93	35.8 - 80.8 †	660
	Baseline 99/95 UTL		0.233	210	5.68	0.590	6.53 - 7.93	35.8 - 80.8 †	660
	3/11/2024	Assessment	0.184	142	6.08	1.00 U	7.6 J	38.2	600
	9/18/2024	Assessment	0.184	170	5.86	1.00 U	7.0 J	72.0	716
MW-17 (Background)	Baseline 95/95 UTL		0.191 - 0.253 †	119 - 198 †	5.00 U - 22.5 †	0.527	6.9 J - 7.8 J	93.7	638 - 764 †
	Baseline 99/95 UTL		0.191 - 0.253 †	119 - 198 †	5.00 U - 22.5 †	0.527	6.9 J - 7.8 J	103	638 - 764 †
	3/12/2024	Assessment	0.194	161	14.7	1.00 U	7.5 J	97.1	658
	9/18/2024	Assessment	0.229	180	23.9	1.00 U	7.0 J	70.5	712
MW-18 (Background)	Baseline 95/95 UTL		0.279	181	11.4	0.589	6.64 - 7.66	90.6	883
	Baseline 99/95 UTL		0.298	181	11.4	0.589	6.64 - 7.66	94.4	932
	3/12/2024	Assessment	0.215	180	5.00 U	1.00 U	7.6 J	90.9	802
	9/18/2024	Assessment	0.244	208	5.00 U	1.00 U	7.0 J	125	824
MW-19	Baseline 95/95 UTL		0.379	301	5.4 - 11.6	1.78	6.8 J - 7.5 J	450	1432
	Baseline 99/95 UTL		0.414	333	5.4 - 11.6	1.78	6.8 J - 7.5 J	501	1557
	3/12/2024	Assessment	0.466	247	57.0	1.00 U	7.5 J	244	1110
	9/18/2024	Assessment	0.460	317	62.6	1.00 U	6.7 J	365	1360
MW-20	Baseline 95/95 UTL		1.23	210	30.0	0.521	6.68 - 7.84	60.3 - 236 †	1046
	Baseline 99/95 UTL		1.45	233	37.4	0.521	6.68 - 7.84	60.3 - 236 †	1181
	3/12/2024	Assessment	0.909	205	156	1.00 U	7.5 J	181	1000
	9/18/2024	Assessment	1.550	262	61.6	1.00 U	7.1 J	398	1230
MW-21	Baseline 95/95 UTL		0.266	125 - 154	3.68 - 8.95 †	0.553	6.9 J - 7.7 J	110	424 - 626
	Baseline 99/95 UTL		0.295	125 - 154	3.68 - 8.95 †	0.553	6.9 J - 7.7 J	135	424 - 626
	3/13/2024	Assessment	0.164	152	6.82	1.00 U	7.6 J	17.4	498
	9/17/2024	Assessment	0.180	169	14.5	1.00 U	6.9 J	79.7	594

Intra-Well Comparisons for 2024 Assessment Monitoring Data
 MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Well	Observation	Appendix IV Analytes						
		Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L	Chromium mg/L	Cobalt mg/L
	MCL/GWPS	0.006^a	0.0413^c	2.0^a	0.004^a	0.005^a	0.1^a	0.00724^c
MW-2	Baseline 95/95 UTL	0.00100 U	0.145	0.125 - 0.222 †	0.00100 U	0.000500 U	0.00500 U	0.00330
	Baseline 99/95 UTL	0.00100 U	0.307	0.125 - 0.222 †	0.00100 U	0.000500 U	0.00500 U	0.00404
	3/12/2024	0.00200 U /0.00200 U	0.0182/0.0188	0.217 J+ /0.219 J+	0.00100 U /0.00100 U	0.000200 U /0.000200 U	0.00500 U /0.00500 U	0.00547/0.00562
	9/18/2024	0.00200 U /0.00200 U	0.0220/0.0173	0.259 J+ /0.258 J+	0.00100 U /0.00100 U	0.000200 U /0.000200 U	0.00500 U /0.00500 U	0.00404/0.00407
MW-4	Baseline 95/95 UTL	0.00100 U	0.00200 U	0.0480	0.00100 U	0.000500 U	0.00500 U	0.0129
	Baseline 99/95 UTL	0.00100 U	0.00200 U	0.0528	0.00100 U	0.000500 U	0.00500 U	0.0159
	3/12/2024	0.00200 U	0.00200 U	0.0578 J+	0.00100 U	0.000200 U	0.00500 U	0.00196
	9/18/2024	0.00200 U	0.00200 U	0.0604 J+	0.00100 U	0.000200 U	0.00500 U	0.00200
MW-8	Baseline 95/95 UTL	0.00100 U	0.00200 U	0.111	0.00100 U	0.000500 U	0.00500 U	0.00428
	Baseline 99/95 UTL	0.00100 U	0.00200 U	0.122	0.00100 U	0.000500 U	0.00500 U	0.00481
	3/13/2024	0.00200 U	0.00217	0.0934 J+	0.00100 U	0.000200 U	0.00500 U	0.00109
	6/3/2024	--	--	--	--	--	--	--
	9/17/2024	0.00200 U	0.00200 U	0.0965	0.00100 U	0.000200 U	0.00500 U	0.00154
MW-10	Baseline 95/95 UTL	0.00100 U	0.00200 U - 0.0622 †	0.111 - 0.618 †	0.00100 U	0.000500 U	0.00500 U	0.000611 - 0.00394 †
	Baseline 99/95 UTL	0.00100 U	0.00200 U - 0.0622 †	0.111 - 0.618 †	0.00100 U	0.000500 U	0.00500 U	0.000611 - 0.00394 †
	3/13/2024	0.00200 U	0.0467	0.463 J+	0.00100 U	0.000200 U	0.00500 U	0.00115
	9/17/2024	0.00200 U	0.0446	0.343	0.00100 U	0.000200 U	0.00500 U	0.00133
MW-11	Baseline 95/95 UTL	0.00100 U	0.00200 U	0.119	0.00100 U	0.000500 U	0.00500 U	0.00440
	Baseline 99/95 UTL	0.00100 U	0.00200 U	0.134	0.00100 U	0.000500 U	0.00500 U	0.00520
	3/13/2024	0.00200 U	0.00200 U	0.0466 J+	0.00100 U	0.000200 U	0.00500 U	0.00606
	9/17/2024	0.00200 U	0.00200 U	0.0442	0.00100 U	0.000200 U	0.00500 U	0.00446
MW-12	Baseline 95/95 UTL	0.00100 U	0.00200 U	0.113	0.00100 U	0.000500 U	0.0340	0.00182
	Baseline 99/95 UTL	0.00100 U	0.00200 U	0.131	0.00100 U	0.000500 U	0.0340	0.00182
	3/12/2024	0.00200 U	0.00200 U	0.0499 J+	0.00100 U	0.000200 U	0.00500 U	0.000500 U
	6/3/2024	--	--	--	--	--	--	--
	9/17/2024	0.00200 U	0.00200 U	0.0596	0.00100 U	0.000200 U	0.00500 U	0.000500 U
MW-13	Baseline 95/95 UTL	0.00100 U	0.00675 J	0.161	0.00100 U	0.000500 U	0.00500 U	0.00065
	Baseline 99/95 UTL	0.00100 U	0.00675 J	0.161	0.00100 U	0.000500 U	0.00500 U	0.00816
	3/12/2024	0.00200 U	0.00200 U	0.0354 J+	0.00100 U	0.000200 U	0.00500 U	0.00112
	9/17/2024	0.00200 U	0.00215	0.0420	0.00100 U	0.000200 U	0.00500 U	0.00179
MW-14	Baseline 95/95 UTL	0.00100 U	0.00200 U	0.0604 - 0.133 †	0.00100 U	0.000500 U	0.00500 U	0.00572
	Baseline 99/95 UTL	0.00100 U	0.00200 U	0.0604 - 0.133 †	0.00100 U	0.000500 U	0.00500 U	0.00680
	3/11/2024	0.00200 U	0.00200 U	0.0731 J+	0.00100 U	0.000200 U	0.00500 U	0.00277
	6/3/2024	--	--	--	--	--	--	--
	9/17/2024	0.00200 U	0.00200 U	0.0637	0.00100 U	0.000200 U	0.00500 U	0.00064

Intra-Well Comparisons for 2024 Assessment Monitoring Data
 MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Well	Observation	Appendix IV Analytes						
		Antimony mg/L	Arsenic mg/L	Barium mg/L	Beryllium mg/L	Cadmium mg/L	Chromium mg/L	Cobalt mg/L
	MCL/GWPS	0.006^a	0.0413^c	2.0^a	0.004^a	0.005^a	0.1^a	0.00724^c
MW-15	Baseline 95/95 UTL	0.00100 U	0.00286	0.0788	0.00100 U	0.000500 U	0.00500 U	0.00950
	Baseline 99/95 UTL	0.00100 U	0.00286	0.0883	0.00100 U	0.000500 U	0.00500 U	0.00950
	3/13/2024	0.00200 U	0.00200 U	0.0665 J+	0.00100 U	0.000200 U	0.00500 U	0.00113
	6/3/2024	--	--	--	--	--	--	--
	9/18/2024	0.00200 U	0.00200 U	0.110 J+	0.00100 U	0.000200 U	0.00500 U	0.00241
MW-16 (Background)	Baseline 95/95 UTL	0.001 U	0.002 U	0.266	0.001 U	0.0005 U	0.005 U	0.00203
	Baseline 99/95 UTL	0.001 U	0.002 U	0.293	0.001 U	0.0005 U	0.005 U	0.00203
	3/11/2024	0.00200 U	0.00200 U	0.266 J+	0.00100 U	0.000200 U	0.00500 U	0.00111
	9/18/2024	0.00200 U	0.00200 U	0.350 J+	0.00100 U	0.000200 U	0.00500 U	0.00158
MW-17 (Background)	Baseline 95/95 UTL	0.00100 U	0.0214	0.154 - 0.207 †	0.00100 U	0.000500 U	0.00500 U	0.00243 - 0.00396 †
	Baseline 99/95 UTL	0.00100 U	0.0252	0.154 - 0.207 †	0.00100 U	0.000500 U	0.00500 U	0.00243 - 0.00396 †
	3/12/2024	0.00200 U	0.0157	0.105 J+	0.00100 U	0.000200 U	0.00500 U	0.000878
	9/18/2024	0.00200 U	0.0190	0.143 J+	0.00100 U	0.000200 U	0.00500 U	0.00148
MW-18 (Background)	Baseline 95/95 UTL	0.00100 U	0.0312	0.210	0.00100 U	0.000500 U	0.00500 U	0.0080
	Baseline 99/95 UTL	0.00100 U	0.0378	0.232	0.00100 U	0.000500 U	0.00500 U	0.0095
	3/12/2024	0.00200 U	0.0260	0.120 J+	0.00100 U	0.000200 U	0.00500 U	0.00277
	9/18/2024	0.00200 U	0.0243	0.138 J+	0.00100 U	0.000200 U	0.00500 U	0.00277
MW-19	Baseline 95/95 UTL	0.00200 U	0.00444	0.224	0.00100 U	0.000500 U	0.00500 U	0.0133
	Baseline 99/95 UTL	0.00200 U	0.00444	0.253	0.00100 U	0.000500 U	0.00500 U	0.0155
	3/12/2024	0.00200 U	0.00200 U	0.139 J+	0.00100 U	0.000200 U	0.00500 U	0.00636
	9/18/2024	0.00200 U	0.00200 U	0.0942 J+	0.00100 U	0.000200 U	0.00500 U	0.00173
MW-20	Baseline 95/95 UTL	0.00200 U	0.0298	0.145	0.00100 U	0.000500 U	0.00500 U	0.00735
	Baseline 99/95 UTL	0.00200 U	0.0374	0.159	0.00100 U	0.000500 U	0.00500 U	0.00889
	3/12/2024	0.00200 U	0.0167	0.159 J+	0.00100 U	0.000200 U	0.00500 U	0.00142
	9/18/2024	0.00200 U	0.0124	0.0975 J+	0.00100 U	0.000200 U	0.00500 U	0.00147
MW-21	Baseline 95/95 UTL	0.00200 U	0.00200 U	0.363	0.00100 U	0.000500 U	0.00500 U	0.00219
	Baseline 99/95 UTL	0.00200 U	0.00200 U	0.415	0.00100 U	0.000500 U	0.00500 U	0.00268
	3/13/2024	0.00200 U	0.00680	0.483 J+	0.00100 U	0.000200 U	0.00500 U	0.00543
	9/17/2024	0.00200 U	0.00210	0.254	0.00100 U	0.000200 U	0.00500 U	0.000951

Table 4.6

Intra-Well Comparisons for 2024 Assessment Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Observation	Appendix IV Analytes						
		Lead mg/L	Lithium mg/L	Mercury mg/L	Molybdenum mg/L	Radium-226 & 228 pCi/L	Selenium mg/L	Thallium mg/L
	MCL/GWPS	0.015^b	0.146^c	0.002^a	0.100^b	5^a	0.05^a	0.002^a
MW-2	Baseline 95/95 UTL	0.000500 U	0.0589 - 0.131 †	0.000200 U	0.00292	0.164 U - 0.96 †	0.00500 U	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.0589 - 0.131 †	0.000200 U	0.00317	0.164 U - 0.96 †	0.00500 U	0.00100 U
	3/12/2024	0.000500 U / 0.000500 U	0.120/0.111	0.000200 U / 0.000200 U	0.00200 U / 0.00200 U	1.11/0.785	0.00500 U / 0.00500 U	0.00100 U / 0.00100 U
	9/18/2024	0.000500 U / 0.000500 U	0.132/0.133	0.000200 U / 0.000200 U	0.00200 U / 0.00200 U	0.682/0.626	0.00500 U / 0.00500 U	0.00100 U / 0.00100 U
MW-4	Baseline 95/95 UTL	0.000500 U	0.0725 - 0.254 †	0.000200 U	0.00200 U	0.946	0.0113	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.0725 - 0.254 †	0.000200 U	0.00200 U	1.13	0.0113	0.00100 U
	3/12/2024	0.000500 U	0.0639	0.000200 U	0.00200 U	0.588	0.00500 U	0.00100 U
	9/18/2024	0.000500 U	0.0572	0.000200 U	0.00200 U	0.130	0.00500 U	0.00100 U
MW-8	Baseline 95/95 UTL	0.000500 U	0.135	0.000200 U	0.135	1.32	0.0985	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.155	0.000200 U	0.171	1.64	0.0985	0.00100 U
	3/13/2024	0.000500 U	0.137	0.000200 U	0.00695	0.597	0.145	0.00100 U
	6/3/2024	--	--	--	--	--	0.0809	--
	9/17/2024	0.000500 U	0.117	0.000200 U	0.0153	0.297	0.0134	0.00100 U
MW-10	Baseline 95/95 UTL	0.000500 U	0.152	0.000200 U	0.00410	2.17	0.0160	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.180	0.000200 U	0.00450	2.17	0.0160	0.00100 U
	3/13/2024	0.000500 U	0.109	0.000200 U	0.00335	0.970	0.00500 U	0.00100 U
	9/17/2024	0.000500 U	0.0904	0.000200 U	0.00443	1.09	0.00500 U	0.00100 U
MW-11	Baseline 95/95 UTL	0.000500 U	0.151	0.000200 U	0.00200 U	0.827 U	0.0580 J	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.163	0.000200 U	0.00200 U	0.827 U	0.0580 J	0.00100 U
	3/13/2024	0.000500 U	0.114	0.000200 U	0.00200 U	0.195 U	0.00500 U	0.00100 U
	9/17/2024	0.000500 U	0.109	0.000200 U	0.00200 U	0.741	0.00976	0.00100 U
MW-12	Baseline 95/95 UTL	0.000500 U	0.140	0.000200 U	0.00477	0.810	0.00500 U - 0.0766 †	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.155	0.000200 U	0.00477	0.810	0.00500 U - 0.0766 †	0.00100 U
	3/12/2024	0.000500 U	0.152	0.000200 U	0.00200 U	0.00416 U	0.293	0.00100 U
	6/3/2024	--/--	0.144/0.141	--/--	--/--	--/--	0.00672/0.00617	--/--
	9/17/2024	0.000500 U	0.133	0.000200 U	0.00200 U	1.01	0.193	0.00100 U
MW-13	Baseline 95/95 UTL	0.000500 U	0.152	0.000200 U	0.00296	1.34	0.00500 U - 0.0831 †	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.168	0.000200 U	0.00296	1.70	0.00500 U - 0.0831 †	0.00100 U
	3/12/2024	0.000500 U	0.112	0.000200 U	0.00200 U	0.448 U	0.00751	0.00100 U
	9/17/2024	0.000500 U	0.138	0.000200 U	0.00200 U	1.60	0.0760	0.00100 U
MW-14	Baseline 95/95 UTL	0.000500 U	0.184	0.000200 U	0.00224	1.73	0.031	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.206	0.000200 U	0.00224	2.09	0.038	0.00100 U
	3/11/2024	0.000500 U	0.137	0.000200 U	0.00200 U	7.61	0.00500 U	0.00100 U
	6/3/2024	--	--	--	--	0.264 U	--	--
	9/17/2024	0.000500 U	0.137	0.000200 U	0.00200 U	0.684	0.0264	0.00100 U

Intra-Well Comparisons for 2024 Assessment Monitoring Data
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Well	Observation	Appendix IV Analytes						
		Lead mg/L	Lithium mg/L	Mercury mg/L	Molybdenum mg/L	Radium-226 & 228 pCi/L	Selenium mg/L	Thallium mg/L
	MCL/GWPS	0.015^b	0.146^c	0.002^a	0.100^b	5^a	0.05^a	0.002^a
MW-15	Baseline 95/95 UTL	0.000500 U	0.107	0.000200 U	0.00200 U	1.26	0.00799	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.120	0.000200 U	0.00200 U	1.49	0.00799	0.00100 U
	3/13/2024	0.000500 U	0.0754	0.000200 U	0.00200 U	0.483 U	0.0677	0.00100 U
	6/3/2024	--	--	--	--	--	0.0227	--
	9/18/2024	0.000500 U	0.0578	0.000200 U	0.00200 U	0.213	0.00854	0.00100 U
MW-16 (Background)	Baseline 95/95 UTL	0.0005 U	0.0824	0.0002 U	0.00200 U	0.301 U - 2.2 †	0.00500 U - 0.0369 †	0.001 U
	Baseline 99/95 UTL	0.0005 U	0.0897	0.0002 U	0.00200 U	0.301 U - 2.2 †	0.00500 U - 0.0369 †	0.001 U
	3/11/2024	0.000500 U	0.0573	0.000200 U	0.00200 U	0.705	0.0214	0.00100 U
	9/18/2024	0.000500 U	0.0616	0.000200 U	0.00200 U	0.691	0.118	0.00100 U
MW-17 (Background)	Baseline 95/95 UTL	0.000500 U	0.0721 - 0.114 †	0.000200 U	0.00200 U	0.65 - 2.27 †	0.00500 U	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.0721 - 0.114 †	0.000200 U	0.00200 U	0.65 - 2.27 †	0.00500 U	0.00100 U
	3/12/2024	0.000500 U	0.0780	0.000200 U	0.00283	1.71	0.00500 U	0.00100 U
	9/18/2024	0.000500 U	0.0752	0.000200 U	0.00349	1.16	0.00500 U	0.00100 U
MW-18 (Background)	Baseline 95/95 UTL	0.000500 U	0.152	0.000600 U	0.00284	1.64	0.00500 U	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.165	0.000600 U	0.00284	1.64	0.00500 U	0.00100 U
	3/12/2024	0.000500 U	0.132	0.000200 U	0.00206	1.39	0.00500 U	0.00100 U
	9/18/2024	0.000500 U	0.156	0.000200 U	0.00200 U	0.854	0.00500 U	0.00100 U
MW-19	Baseline 95/95 UTL	0.000500 U	0.184	0.000200 U	0.00200 U	2.22	0.00500 U	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.207	0.000200 U	0.00200 U	2.66	0.00500 U	0.00100 U
	3/12/2024	0.000500 U	0.144	0.000200 U	0.00200 U	1.74	0.00500 U	0.00100 U
	9/18/2024	0.000500 U	0.182	0.000200 U	0.00200 U	0.843	0.00500 U	0.00100 U
MW-20	Baseline 95/95 UTL	0.000500 U	0.125	0.000200 U	0.00200 U	2.47	0.0132	0.00100 U
	Baseline 99/95 UTL	0.000500 U	0.141	0.000200 U	0.00200 U	3.04	0.0132	0.00100 U
	3/12/2024	0.000500 U	0.0921	0.000200 U	0.00200 U	1.19	0.00500 U	0.00100 U
	9/18/2024	0.000500 U	0.120	0.000200 U	0.00200 U	0.297	0.00500 U	0.00100 U
MW-21	Baseline 95/95 UTL	0.000517	0.093	0.000200 U	0.00243	2.83	0.00500 U	0.00136
	Baseline 99/95 UTL	0.000517	0.101	0.000200 U	0.00243	3.40	0.00500 U	0.00136
	3/13/2024	0.000500 U	0.0711	0.000200 U	0.00200 U	4.56	0.00500 U	0.00100 U
	9/17/2024	0.000500 U	0.0677	0.000200 U	0.00200 U	1.67	0.00500 U	0.00100 U

Notes:

28.0 Value exceeds intra-well baseline 95/95 UTL or is outside of baseline range.

7.2 J Value exceeds intra-well baseline 99/95 UTL.

† - Trend present during baseline period, no UTL values calculated (baseline range listed for comparison).

368/370 - Field duplicate results.

U - Not detected at the associated reporting limit.

None - No MCL established.

J - Estimated concentration.

^a Maximum contaminant level (MCL).

NS - Not Sampled

^b Groundwater protection standard (GWPS) established under 40 CFR 257.95(h)(2).

^c Determined from baseline data set for MW-16, MW-17, and MW-18.

Table 4.7

**Groundwater Protection Standards for Neal South Monofill Groundwater
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa**

Analytes	Units	MCL ^a	CCR-Rule GWPS ^b	Background ^c	Site-Specific GWPS
		40 CFR 257.95(h)(1)	40 CFR 257.95(h)(2)	40 CFR 257.95(h)(3)	
Appendix IV					
Antimony	mg/L	0.006	NA	0.00200 U	0.006 ^a
Arsenic	mg/L	0.01	NA	0.0413	0.0413 ^c
Barium	mg/L	2.0	NA	0.121 - 0.322	2.0 ^a
Beryllium	mg/L	0.004	NA	0.00100 U	0.004 ^a
Cadmium	mg/L	0.005	NA	0.000500 U	0.005 ^a
Chromium	mg/L	0.1	NA	0.00500 U	0.1 ^a
Cobalt	mg/L	NA	0.006	0.00724	0.00724 ^c
Fluoride	mg/L	4.0	NA	0.729	4.0 ^a
Lead	mg/L	NA	0.015	0.000638	0.015 ^b
Lithium	mg/L	NA	0.040	0.0458 - 0.146	0.146 ^c
Mercury	mg/L	0.002	NA	0.000600 U	0.002 ^a
Molybdenum	mg/L	NA	0.100	0.0035	0.100 ^b
Radium-226 & 228	pCi/L	5	NA	2.013	5 ^a
Selenium	mg/L	0.05	NA	0.0403	0.05 ^a
Thallium	mg/L	0.002	NA	0.00100 U	0.002 ^a

Notes:

MCL - Maximum Contaminant Level.

NA - Not applicable.

U - Not detected at the associated reporting limit.

^a Maximum contaminant level (MCL).

^b Groundwater protection standard (GWPS) established under 40 CFR 257.95(h)(2).

^c Determined from baseline data set for MW-16, MW-17, and MW-18.

Appendices

Appendix A

Stratigraphic Logs



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-58

PROJECT NUMBER: 12655905

DATE COMPLETED: 4 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger

LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\663\12655905\TECH\INTLOG\DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N' Value
	NORTHING: 3584455.72 EASTING: 4150867.56	1074.93 1071.93					
	TOP OF CASING GROUND SURFACE						
2	SILT, roots, brown, moist -with clay, light tan, dry from 0.25 to 0.45ft BGS - dry-moist at 2.00ft BGS			1	X	0.45	
4	CLAY, with silt, soft, tan, moist - stiff at 4.00ft BGS	1068.13 1067.33		2	X	2.00	
6	SAND, well sorted, fine grained, tan, dry		Bentonite Chips	3	X	1.60	
8	CLAY, with silt, soft, dark tan, wet	1065.03		4	X	1.00	
10	SAND, well sorted, fine grained, tan, dry	1063.93		5	X	1.50	
12	CLAY and SILT, brown, wet	1062.93 1062.83 1062.43		6	X	1.70	
14	CLAY, with trace silt/sand, gray, orange staining			7	X	1.10	
16	SAND, fine grained, tan, moist - greater clay content at 11.00ft BGS - wet at 12.00ft BGS - less clay content from 12.50 to 13.10ft BGS - wet, with fines from 14.00 to 15.40ft BGS			8	X	1.40	5
18	- gray with black streaks at 17.50ft BGS - 0.01' lens of organic material at 17.60ft BGS			9	X	2.00	5
20	- medium grained sand at 19.20ft BGS		Sand Pack	10	X	2.00	3
22				11	X	1.50	6
24	- well to moderately sorted at 24.00ft BGS		Well Screen	12	X	1.90	20
26	- coarse sand and pebbles at 25.50ft BGS	1045.93		13	X	1.50	7
28	SAND, coarse to very coarse, moderately to poorly sorted, wet, pebbles throughout			14	X	1.10	8
30	- No recovery at 28.00ft BGS		Natural Sand	15	X	0.00	
32	END OF BOREHOLE @ 30.00ft BGS	1041.93					
34							

WELL DETAILS
 Screened interval:
 1059.93 to 1044.93BGS
 12.00 to 27.00ft BGS
 Length: 15ft
 Diameter: 2in
 Slot Size: 0.010
 Material: Schedule 40 PVC

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-58

PROJECT NUMBER: 12655905

DATE COMPLETED: 4 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger

LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\63\12655905\TECH\INTLOG\DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N' Value
36			Seal: 1070.43 to 1062.93BGS 1.50 to 9.00ft BGS Material: Bentonite				
38			Sand Pack: 1062.93 to 1041.93BGS 9.00 to 30.00ft BGS Material: 20/40 Sand				
40			-----				
42			Seal: 1071.93 to 1070.43BGS 0.00 to 1.50ft BGS Material: Concrete				
44							
46							
48							
50							
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-59

PROJECT NUMBER: 12655905

DATE COMPLETED: 4 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger

LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\563\12655905\TECH\INTLOG\DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N Value
	NORTHING: 3584483.17 EASTING: 4150984.5	1075.28 1072.36					
2	SILT, dark brown, moist - trace gravel throughout, tan, dry at 0.40ft BGS - with clay, moist at 2.00ft BGS			1	X	1.30	2
4	CLAY, minor silt, soft, brown, moist	1069.36		2	X	1.50	5
6	SAND, well sorted, fine grained, tan, dry-moist - orange streaking at 5.50ft BGS	1068.16		3	X	1.50	5
8	CLAY, with silt, soft, dark tan, wet	1065.46		4	X	1.40	8
10	SAND, with fines, fine grained, well sorted, trace black streaks, wet - tan, moist at 10.00ft BGS	1063.26		5	X	1.50	6
12	CLAY and SILT, gray, soft, moist	1061.76		6	X	1.60	4
14	SAND, fine grained, well sorted, gray-tan, moist - wet, with fines at 14.00ft BGS	1061.06		7	X	1.40	10
16				8	X	1.40	5
18	- more gray with black streaks from 16.80 to 17.60ft BGS - less fines at 17.10ft BGS			9	X	1.60	5
20	- fine to medium grained sand, tan from 18.00 to 19.40ft BGS			10	X	1.40	4
22				11	X	1.70	7
24	- trace pebbles from 24.00 to 24.90ft BGS			12	X	1.40	22
26	SAND and GRAVEL/PEBBLES, poorly sorted, wet	1046.36		13	X	0.90	9
28				14	X	1.00	8
30	SAND, fine to medium grained, moderately sorted - large black rock at 29.10ft BGS END OF BOREHOLE @ 30.00ft BGS	1043.76 1042.36		15	X	1.10	11

WELL DETAILS
 Screened interval:
 1060.36 to 1045.36BGS
 12.00 to 27.00ft BGS
 Length: 15ft
 Diameter: 2in
 Slot Size: 0.010
 Material: Schedule 40 PVC

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-59

PROJECT NUMBER: 12655905

DATE COMPLETED: 4 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger

LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\63\12655905\TECH\INTLOG\DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N' Value
36			Seal: 1070.86 to 1063.36BGS 1.50 to 9.00ft BGS Material: Bentonite				
38			Sand Pack: 1063.36 to 1042.36BGS 9.00 to 30.00ft BGS Material: 20/40 Sand				
40			-----				
42			Seal: 1072.36 to 1070.86BGS 0.00 to 1.50ft BGS Material: Concrete				
44							
46							
48							
50							
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-60

PROJECT NUMBER: 12655905

DATE COMPLETED: 5 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger


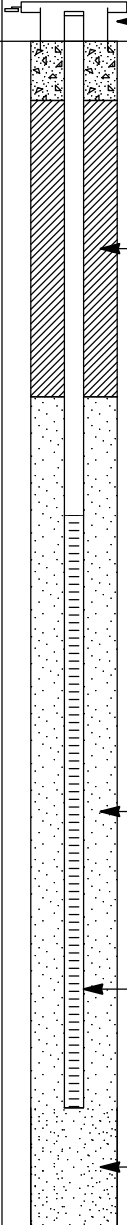
LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\663\12655905\TECH\IN\LOG DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N Value
	NORTHING: 3584489.03 EASTING: 4151230.51 TOP OF CASING GROUND SURFACE	1075.32 1072.58	 Concrete				
2	SILT, brown, moist ROCK SILT and CLAY, soft, tan, moist	1072.08 1071.98	 Bentonite Chips Sand Pack Well Screen Natural Sand	1		1.20	2
4	SAND, fine grained, well sorted, tan, dry-moist	1070.18		2		1.30	6
6	- orange streaks from 7.30 to 7.50ft BGS			3		1.70	7
8				4		1.60	11
10	- black streaks at 10.50ft BGS - black streaks from 11.40 to 11.50ft BGS			5		1.40	7
12	CLAY and SAND/SILT, orange/black staining, soft, brown, wet -gray from 12.20 to 12.50ft BGS	1060.58		6		1.50	5
14	SAND, with fines, fine grained, well sorted, brown, wet	1058.58		7		1.30	3
16	- gray-brown at 16.80ft BGS - black organics at 17.50ft BGS			8		1.30	4
18				9		1.70	5
20				10		2.00	3
22	- tan at 22.00ft BGS - small coarse black rocks (mm size) around 21.70ft BGS	1050.88		11		1.70	5
24	- medium grained, moderately sorted at 24.60ft BGS			12		1.20	13
26	- poorly sorted with pebbles at 25.10ft BGS - moderately sorted, medium grained at 26.00ft BGS			13		1.20	4
28	- fine to medium grained, well sorted at 26.30ft BGS			14		0.80	6
30	END OF BOREHOLE @ 30.00ft BGS	1042.58		15		0.80	7

WELL DETAILS
 Screened interval:
 1060.58 to 1045.58BGS
 12.00 to 27.00ft BGS
 Length: 15ft
 Diameter: 2in
 Slot Size: 0.010
 Material: Schedule 40 PVC

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-60

PROJECT NUMBER: 12655905

DATE COMPLETED: 5 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger

LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\63\12655905\TECH\INTLOG\DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N' Value
36			Seal: 1071.08 to 1063.58BGS 1.50 to 9.00ft BGS Material: Bentonite				
38			Sand Pack: 1063.58 to 1042.58BGS 9.00 to 30.00ft BGS Material: 20/40 Sand				
40			-----				
42			Seal: 1072.58 to 1071.08BGS 0.00 to 1.50ft BGS Material: Concrete				
44							
46							
48							
50							
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-61

PROJECT NUMBER: 12655905

DATE COMPLETED: 5 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger

LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\6312655905\TECH\INTLOG\DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N Value
	NORTHING: 3584384.34 EASTING: 4150995.45 TOP OF CASING GROUND SURFACE	1073.15 1070.13					
2	SILT, brown, moist - tan, dry-moist at 0.50ft BGS - with clay, dry at 2.00ft BGS			1	X	1.30	6
4	CLAY, stiff, brown, moist -sand lens at 4.20ft BGS	1066.13 1065.73		2	X	0.90	8
6	SAND, fine grained, well sorted, tan, dry - greater clay content with orange staining from 5.00 to 5.20ft BGS			3	X	1.60	5
8	- with fine, moist at 6.00ft BGS - orange rock/gravel at 6.10ft BGS - clay lens at 6.50ft BGS			4	X	1.80	7
10	- wet at 8.60ft BGS - moist to wet at 10.00ft BGS			5	X	1.70	6
12	- wet at 12.00ft BGS			6	X	1.50	11
14	- less fines at 13.00ft BGS - fine sand, well sorted, wet at 14.00ft BGS			7	X	1.60	4
16				8	X	1.10	3
18	- moderately sorted with coarser sand present at 18.00ft BGS			9	X	1.00	9
20	- infrequent pebbles from 20.00 to 20.50ft BGS			10	X	1.10	4
22	- fine grained, well sorted, tan, wet from 20.80 to 21.40ft BGS			11	X	1.40	11
24				12	X	1.40	18
26				13	X	1.20	5
28	SAND, with gravel/pebbles, poorly sorted, medium to coarse grained, gray-tan, wet - black rock fragment at 28.20ft BGS - black rock fragment at 29.10ft BGS	1043.63		14	X	1.40	7
30	END OF BOREHOLE @ 30.00ft BGS	1040.13		15	X	1.40	5

WELL DETAILS
 Screened interval:
 1059.13 to 1044.13BGS
 11.00 to 26.00ft BGS
 Length: 15ft
 Diameter: 2in
 Slot Size: 0.010
 Material: Schedule 40 PVC

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-61

PROJECT NUMBER: 12655905

DATE COMPLETED: 5 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger

LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\63\12655905\TECH\INTLOG\DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N' Value
36			Seal: 1068.63 to 1062.13BGS 1.50 to 8.00ft BGS Material: Bentonite				
38			Sand Pack: 1062.13 to 1040.13BGS 8.00 to 30.00ft BGS Material: 20/40 Sand				
40			-----				
42			Seal: 1070.13 to 1068.63BGS 0.00 to 1.50ft BGS Material: Concrete				
44							
46							
48							
50							
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-62

PROJECT NUMBER: 12655905

DATE COMPLETED: 5 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger


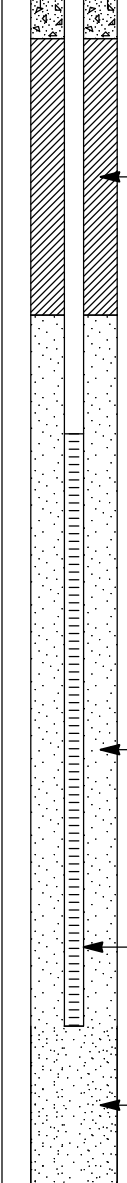
LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\663\12655905\TECH\INTLOG\DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N Value
	NORTHING: 3584422.65 EASTING: 4151125.25 TOP OF CASING GROUND SURFACE	1073.97 1070.96	 Concrete				
2	SILT, brown, moist CLAY, brown, stiff, moist	1070.66	 Bentonite Chips Sand Pack Well Screen 20/40 Sand	1		0.30	2
4	SAND, fine grained, well sorted, tan, dry	1068.96		2		2.00	10
6	CLAY, stiff, brown, moist SAND, fine grained, well sorted, tan, dry	1066.96 1066.56		3		1.80	6
8	- dry to moist at 8.00ft BGS			4		1.60	9
10	- trace fines at 9.60ft BGS - moist at 10.00ft BGS - black lens at 11.00ft BGS - black lens at 11.20ft BGS			5		1.80	6
12	CLAY, soft, gray, wet	1059.46 1058.96		6		1.80	4
14	SAND and fines, fine grained, tan, wet - gray from 12.90 to 13.80ft BGS - less fines, well sorted at 14.40ft BGS			7		1.80	3
16				8		1.50	4
18				9		2.00	10
20	- pebbles at 20.60ft BGS - fine-medium grained at 20.70ft BGS - small pebbles infrequently from 22.00 to 23.50ft BGS			10		1.10	10
22				11		1.00	3
24	- some clay from 24.20 to 24.60ft BGS			12		1.50	7
26				13		1.40	10
28	SAND, with gravel/pebbles, medium to coarse grained, poorly sorted, wet - moderately to poorly sorted at 28.00ft BGS	1043.66		14		1.60	11
30	END OF BOREHOLE @ 30.00ft BGS	1040.96		15		0.80	8

WELL DETAILS
 Screened interval:
 1059.96 to 1044.96BGS
 11.00 to 26.00ft BGS
 Length: 15ft
 Diameter: 2in
 Slot Size: 0.010
 Material: Schedule 40 PVC

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-62

PROJECT NUMBER: 12655905

DATE COMPLETED: 5 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger

LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\63\12655905\TECH\INTLOG\DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N' Value
36			Seal: 1069.46 to 1062.96BGS 1.50 to 8.00ft BGS Material: Bentonite				
38			Sand Pack: 1062.96 to 1040.96BGS 8.00 to 30.00ft BGS Material: 20/40 Sand				
40			-----				
42			Seal: 1070.96 to 1069.46BGS 0.00 to 1.50ft BGS Material: Concrete				
44							
46							
48							
50							
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-63

PROJECT NUMBER: 12655905

DATE COMPLETED: 5 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger

LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\63\12655905\TECH\IN\LOG DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N Value
	NORTHING: 3584310.51 EASTING: 4150522.77 TOP OF CASING GROUND SURFACE	1071.95 1068.81					
2	SILT, soft, brown, moist - tan, dry at 0.60ft BGS - moist at 2.00ft BGS			1	X	1.20	2
4	SAND, fine grained, well sorted, tan, dry	1066.21		2	X	1.90	5
6	- moist at 6.60ft BGS			3	X	1.60	6
8	- wet at 7.50ft BGS - orange staining at 7.90ft BGS			4	X	1.90	7
10				5	X	1.60	5
12				6	X	1.40	5
14				7	X	2.00	11
16				8	X	1.70	8
18	- gray at 17.00ft BGS			9	X	1.30	10
20				10	X	1.00	10
22	END OF BOREHOLE @ 22.00ft BGS	1046.81		11	X	1.00	8
24			WELL DETAILS Screened interval: 1061.81 to 1046.81BGS 7.00 to 22.00ft BGS Length: 15ft Diameter: 2in Slot Size: 0.010 Material: Schedule 40 PVC Seal: 1067.31 to 1063.81BGS 1.50 to 5.00ft BGS Material: Bentonite Chips Sand Pack: 1063.81 to 1046.81BGS 5.00 to 22.00ft BGS Material: 20/40 Sand ----- Seal: 1068.81 to 1067.31BGS 0.00 to 1.50ft BGS Material: Concrete				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-64

PROJECT NUMBER: 12655905

DATE COMPLETED: 5 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger

LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\663\12655905\TECH\INTLOG\DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N Value
	NORTHING: 3584435.31 EASTING: 4150645.32 TOP OF CASING GROUND SURFACE	1075.32 1072.55					
2	SILT, brown, moist - light tan, stiff, dry at 0.40ft BGS			1		1.30	4
4	- with clay, moist from 3.30 to 3.60ft BGS			2		1.60	4
4	CLAY, with silt, stiff, brown, moist	1068.55	Bentonite Chips	3		0.70	5
6	- medium stiff-soft from 6.00 to 6.90ft BGS - soft, wet at 6.90ft BGS			4		1.60	2
8	SAND, fine grained, well sorted, tan, moist	1065.05		5		1.10	4
10	CLAY, soft, brown, wet - sandy from 10.30 to 10.40ft BGS	1062.55		6		1.50	3
12	- gray from 10.50 to 11.00ft BGS - silty at 11.30ft BGS - with fine sand at 12.00ft BGS			7		1.60	3
14	SAND and fines, fine grained, soft, gray, wet	1059.35		8		1.50	3
16	- gray-tan from 16.00 to 17.80ft BGS			9		1.80	3
18	- black lamination at 17.70ft BGS			10		1.70	2
20	- gray at 19.00ft BGS - black lamination from 19.00ft to 19.70ft BGS - gray-tan from 20.00 to 21.60ft BGS	1053.55	Sand Pack	11		1.60	2
22				12		1.30	2
24	- less fines, tan at 24.00ft BGS		Well Screen	13		1.30	16
26	- fine to medium grained, gray, moderately sorted at 26.00ft BGS - coarser sand with few pebbles at 26.50ft BGS		Natural Sand	14		0.80	9
28	- no recovery, (large rock in sampler) from 28.00 to 30.00ft BGS			15		0.00	8
30	END OF BOREHOLE @ 30.00ft BGS	1042.55					

WELL DETAILS
 Screened interval:
 1062.55 to 1047.55BGS
 10.00 to 25.00ft BGS
 Length: 15ft
 Diameter: 2in
 Slot Size: 0.010
 Material: Schedule 40 PVC

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Neal South Monofill

HOLE DESIGNATION: MW-64

PROJECT NUMBER: 12655905

DATE COMPLETED: 5 November 2024

CLIENT: MidAmerican Energy Company

DRILLING METHOD: Hollow Stem Auger

LOCATION: Salix, Iowa

FIELD PERSONNEL: Paige Richards

DRILLING CONTRACTOR: Peterson Drilling, Inc.

DRILLER: Sam Wulf

File: \\GHDNET\GHD\USIDES\MOINES\PROJECTS\63\12655905\TECH\INTLOG\DATABASE\12655905-NEAL SOUTH MONOFILL.GPJ Library File: GHD_ENVIRO_V04.GLB Report: OVERBURDEN LOG Date: 16/12/24

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. BGS	MONITOR INSTALLATION	SAMPLE			
				NUMBER	INTERVAL	REC (ft)	'N' Value
36			Seal: 1071.05 to 1065.55BGS 1.50 to 7.00ft BGS Material: Bentonite Chips				
38			Sand Pack: 1065.55 to 1042.55BGS 7.00 to 30.00ft BGS Material: 20/40 Sand				
40			-----				
42			Seal: 1072.55 to 1071.05BGS 0.00 to 1.50ft BGS Material: Concrete				
44							
46							
48							
50							
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

Appendix B

Groundwater Sample Collection Records

Low-Flow Test Report:

Test Date / Time: 3/11/2024 11:00:14 AM

Project: Neal South MW-36

Operator Name: Thao Larson

Location Name: MW-36 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 15.1 ft Total Depth: 30.1 ft Initial Depth to Water: 22.89 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 28.1 ft Pump Intake From TOC: 28.1 ft Estimated Total Volume Pumped: 9045 ml Flow Cell Volume: 130 ml Final Flow Rate: 175 ml/min Final Draw Down: 0.03 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1155

Weather Conditions:

Sunny 54°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/11/2024 11:00 AM	00:00	6.84 pH	12.62 °C	1.26 mS/cm	2.49 mg/L	199.87 NTU	140.5 mV	22.89 ft	200.00 ml/min
3/11/2024 11:02 AM	01:48	6.85 pH	12.51 °C	1.26 mS/cm	1.36 mg/L	182.28 NTU	114.6 mV	22.89 ft	200.00 ml/min
3/11/2024 11:03 AM	03:36	6.87 pH	12.54 °C	1.26 mS/cm	1.00 mg/L	200.83 NTU	98.6 mV	22.90 ft	200.00 ml/min
3/11/2024 11:05 AM	05:24	6.89 pH	12.54 °C	1.26 mS/cm	0.90 mg/L	164.58 NTU	84.0 mV	22.90 ft	200.00 ml/min
3/11/2024 11:07 AM	07:12	6.90 pH	12.59 °C	1.26 mS/cm	0.87 mg/L	143.77 NTU	69.9 mV	22.90 ft	200.00 ml/min
3/11/2024 11:09 AM	09:00	6.91 pH	12.57 °C	1.26 mS/cm	0.75 mg/L	139.44 NTU	53.7 mV	22.90 ft	175.00 ml/min
3/11/2024 11:11 AM	10:48	6.92 pH	12.59 °C	1.26 mS/cm	0.68 mg/L	133.57 NTU	40.5 mV	22.90 ft	175.00 ml/min
3/11/2024 11:12 AM	12:36	6.93 pH	12.57 °C	1.26 mS/cm	0.57 mg/L	113.21 NTU	28.7 mV	22.90 ft	175.00 ml/min
3/11/2024 11:14 AM	14:24	6.93 pH	12.56 °C	1.26 mS/cm	0.52 mg/L	106.15 NTU	20.6 mV	22.90 ft	175.00 ml/min
3/11/2024 11:16 AM	16:12	6.94 pH	12.59 °C	1.26 mS/cm	0.43 mg/L	69.44 NTU	14.3 mV	22.90 ft	175.00 ml/min
3/11/2024 11:18 AM	18:00	6.94 pH	12.60 °C	1.26 mS/cm	0.38 mg/L	81.93 NTU	9.3 mV	22.90 ft	175.00 ml/min
3/11/2024 11:20 AM	19:48	6.95 pH	12.65 °C	1.27 mS/cm	0.39 mg/L	68.50 NTU	4.7 mV	22.90 ft	175.00 ml/min

3/11/2024 11:21 AM	21:36	6.95 pH	12.72 °C	1.27 mS/cm	0.30 mg/L	54.30 NTU	-2.8 mV	22.90 ft	175.00 ml/min
3/11/2024 11:23 AM	23:24	6.96 pH	12.80 °C	1.27 mS/cm	0.25 mg/L	52.13 NTU	-5.8 mV	22.90 ft	175.00 ml/min
3/11/2024 11:25 AM	25:12	6.96 pH	12.81 °C	1.27 mS/cm	0.22 mg/L	54.61 NTU	-8.8 mV	22.90 ft	175.00 ml/min
3/11/2024 11:27 AM	27:00	6.97 pH	12.80 °C	1.27 mS/cm	0.20 mg/L	48.50 NTU	-10.8 mV	22.90 ft	175.00 ml/min
3/11/2024 11:29 AM	28:48	6.97 pH	12.82 °C	1.27 mS/cm	0.20 mg/L	35.97 NTU	-13.0 mV	22.90 ft	175.00 ml/min
3/11/2024 11:30 AM	30:36	6.97 pH	12.88 °C	1.27 mS/cm	0.19 mg/L	30.08 NTU	-16.6 mV	22.90 ft	175.00 ml/min
3/11/2024 11:32 AM	32:24	6.98 pH	12.90 °C	1.27 mS/cm	0.19 mg/L	27.93 NTU	-20.0 mV	22.91 ft	175.00 ml/min
3/11/2024 11:34 AM	34:12	6.98 pH	12.92 °C	1.28 mS/cm	0.19 mg/L	27.65 NTU	-22.9 mV	22.91 ft	175.00 ml/min
3/11/2024 11:36 AM	36:00	6.98 pH	13.05 °C	1.28 mS/cm	0.23 mg/L	20.10 NTU	-25.9 mV	22.91 ft	175.00 ml/min
3/11/2024 11:38 AM	37:48	6.99 pH	13.01 °C	1.28 mS/cm	0.21 mg/L	16.17 NTU	-28.7 mV	22.91 ft	175.00 ml/min
3/11/2024 11:39 AM	39:36	6.99 pH	13.03 °C	1.28 mS/cm	0.20 mg/L	11.22 NTU	-32.9 mV	22.91 ft	175.00 ml/min
3/11/2024 11:41 AM	41:24	7.00 pH	13.01 °C	1.28 mS/cm	0.20 mg/L	10.50 NTU	-35.2 mV	22.92 ft	175.00 ml/min
3/11/2024 11:43 AM	43:12	6.99 pH	13.01 °C	1.28 mS/cm	0.20 mg/L	11.51 NTU	-37.4 mV	22.92 ft	175.00 ml/min
3/11/2024 11:45 AM	45:00	7.00 pH	13.04 °C	1.28 mS/cm	0.22 mg/L	8.00 NTU	-39.6 mV	22.92 ft	175.00 ml/min
3/11/2024 11:47 AM	46:48	7.00 pH	13.09 °C	1.28 mS/cm	0.21 mg/L	7.65 NTU	-40.5 mV	22.92 ft	175.00 ml/min
3/11/2024 11:48 AM	48:36	7.00 pH	13.03 °C	1.28 mS/cm	0.20 mg/L	5.14 NTU	-41.6 mV	22.92 ft	175.00 ml/min
3/11/2024 11:50 AM	50:24	7.00 pH	13.11 °C	1.28 mS/cm	0.19 mg/L	4.49 NTU	-42.6 mV	22.92 ft	175.00 ml/min

Samples

Sample ID:	Description:
MW36-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/11/2024 12:19:08 PM

Project: Neal South MW-34

Operator Name: Thao Larson

Location Name: MW-34 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 15.1 ft Total Depth: 30.1 ft Initial Depth to Water: 23.03 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 28.1 ft Pump Intake From TOC: 28.1 ft Estimated Total Volume Pumped: 11520 ml Flow Cell Volume: 130 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.05 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1320

Weather Conditions:

Sunny 54°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/11/2024 12:19 PM	00:00	6.89 pH	15.28 °C	1.40 mS/cm	3.88 mg/L	3,180.0 NTU	37.6 mV	23.03 ft	200.00 ml/min
3/11/2024 12:20 PM	01:48	6.93 pH	13.82 °C	1.44 mS/cm	1.89 mg/L	1,766.8 NTU	39.7 mV	23.03 ft	200.00 ml/min
3/11/2024 12:22 PM	03:36	6.92 pH	13.57 °C	1.45 mS/cm	1.66 mg/L	868.97 NTU	41.9 mV	23.03 ft	200.00 ml/min
3/11/2024 12:24 PM	05:24	6.92 pH	13.52 °C	1.45 mS/cm	1.48 mg/L	218.79 NTU	41.1 mV	23.03 ft	200.00 ml/min
3/11/2024 12:26 PM	07:12	6.92 pH	13.35 °C	1.45 mS/cm	1.35 mg/L	199.54 NTU	38.2 mV	23.03 ft	200.00 ml/min
3/11/2024 12:28 PM	09:00	6.91 pH	13.47 °C	1.45 mS/cm	1.23 mg/L	178.41 NTU	32.4 mV	23.08 ft	200.00 ml/min
3/11/2024 12:29 PM	10:48	6.92 pH	13.45 °C	1.46 mS/cm	1.12 mg/L	171.28 NTU	27.3 mV	23.08 ft	200.00 ml/min
3/11/2024 12:31 PM	12:36	6.92 pH	13.30 °C	1.46 mS/cm	1.11 mg/L	155.92 NTU	12.6 mV	23.08 ft	200.00 ml/min
3/11/2024 12:33 PM	14:24	6.94 pH	13.28 °C	1.46 mS/cm	1.55 mg/L	113.66 NTU	-3.9 mV	23.08 ft	200.00 ml/min
3/11/2024 12:35 PM	16:12	6.93 pH	13.13 °C	1.47 mS/cm	0.82 mg/L	98.78 NTU	-7.4 mV	23.08 ft	200.00 ml/min
3/11/2024 12:37 PM	18:00	6.94 pH	13.16 °C	1.47 mS/cm	0.69 mg/L	84.88 NTU	-12.5 mV	23.08 ft	200.00 ml/min
3/11/2024 12:38 PM	19:48	6.94 pH	13.17 °C	1.47 mS/cm	0.58 mg/L	69.53 NTU	-16.5 mV	23.08 ft	200.00 ml/min

3/11/2024 12:40 PM	21:36	6.94 pH	13.20 °C	1.47 mS/cm	0.48 mg/L	55.47 NTU	-20.5 mV	23.08 ft	200.00 ml/min
3/11/2024 12:42 PM	23:24	6.94 pH	13.22 °C	1.47 mS/cm	0.39 mg/L	48.02 NTU	-24.5 mV	23.08 ft	200.00 ml/min
3/11/2024 12:44 PM	25:12	6.95 pH	13.17 °C	1.47 mS/cm	0.33 mg/L	39.85 NTU	-26.7 mV	23.08 ft	200.00 ml/min
3/11/2024 12:46 PM	27:00	6.95 pH	13.22 °C	1.47 mS/cm	0.29 mg/L	28.46 NTU	-28.6 mV	23.08 ft	200.00 ml/min
3/11/2024 12:47 PM	28:48	6.95 pH	13.23 °C	1.48 mS/cm	0.25 mg/L	26.83 NTU	-30.2 mV	23.08 ft	200.00 ml/min
3/11/2024 12:49 PM	30:36	6.95 pH	13.26 °C	1.48 mS/cm	0.22 mg/L	21.94 NTU	-31.4 mV	23.08 ft	200.00 ml/min
3/11/2024 12:51 PM	32:24	6.95 pH	13.36 °C	1.48 mS/cm	0.19 mg/L	20.01 NTU	-33.1 mV	23.08 ft	200.00 ml/min
3/11/2024 12:53 PM	34:12	6.95 pH	13.31 °C	1.48 mS/cm	0.18 mg/L	15.53 NTU	-34.2 mV	23.08 ft	200.00 ml/min
3/11/2024 12:55 PM	36:00	6.95 pH	13.62 °C	1.48 mS/cm	0.17 mg/L	16.05 NTU	-34.9 mV	23.08 ft	200.00 ml/min
3/11/2024 12:56 PM	37:48	6.95 pH	14.20 °C	1.47 mS/cm	0.29 mg/L	121.73 NTU	-37.1 mV	23.08 ft	200.00 ml/min
3/11/2024 12:58 PM	39:36	7.02 pH	15.04 °C	1.43 mS/cm	7.82 mg/L	19.43 NTU	-54.0 mV	23.08 ft	200.00 ml/min
3/11/2024 1:00 PM	41:24	6.96 pH	13.27 °C	1.48 mS/cm	0.35 mg/L	189.59 NTU	-30.8 mV	23.08 ft	200.00 ml/min
3/11/2024 1:02 PM	43:12	6.96 pH	13.33 °C	1.48 mS/cm	0.18 mg/L	112.77 NTU	-33.9 mV	23.08 ft	200.00 ml/min
3/11/2024 1:04 PM	45:00	6.96 pH	13.30 °C	1.48 mS/cm	0.16 mg/L	36.96 NTU	-36.9 mV	23.08 ft	200.00 ml/min
3/11/2024 1:05 PM	46:48	6.96 pH	13.34 °C	1.48 mS/cm	0.15 mg/L	30.30 NTU	-39.0 mV	23.08 ft	200.00 ml/min
3/11/2024 1:07 PM	48:36	6.98 pH	13.54 °C	1.47 mS/cm	1.66 mg/L	38.71 NTU	-42.3 mV	23.08 ft	200.00 ml/min
3/11/2024 1:09 PM	50:24	6.97 pH	13.30 °C	1.48 mS/cm	0.23 mg/L	20.38 NTU	-40.3 mV	23.08 ft	200.00 ml/min
3/11/2024 1:11 PM	52:12	6.97 pH	13.34 °C	1.48 mS/cm	0.18 mg/L	14.36 NTU	-40.8 mV	23.08 ft	200.00 ml/min
3/11/2024 1:13 PM	54:00	6.97 pH	13.33 °C	1.48 mS/cm	0.16 mg/L	13.36 NTU	-42.6 mV	23.08 ft	200.00 ml/min
3/11/2024 1:14 PM	55:48	6.97 pH	13.37 °C	1.48 mS/cm	0.15 mg/L	13.65 NTU	-42.3 mV	23.08 ft	200.00 ml/min
3/11/2024 1:16 PM	57:36	6.97 pH	13.33 °C	1.48 mS/cm	0.14 mg/L	4.90 NTU	-42.7 mV	23.08 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW34-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/11/2024 1:45:06 PM

Project: Neal South MW-33

Operator Name: Thao Larson

Location Name: MW-33 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 15.1 ft Total Depth: 30.1 ft Initial Depth to Water: 22.89 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 28.1 ft Pump Intake From TOC: 28.1 ft Estimated Total Volume Pumped: 9000 ml Flow Cell Volume: 130 ml Final Flow Rate: 125 ml/min Final Draw Down: 0.17 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1500

Weather Conditions:

Sunny 54°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/11/2024 1:45 PM	00:00	6.89 pH	16.96 °C	1.54 mS/cm	1.57 mg/L	196.23 NTU	1.1 mV	22.89 ft	125.00 ml/min
3/11/2024 1:46 PM	01:48	6.95 pH	16.42 °C	1.57 mS/cm	0.49 mg/L	196.57 NTU	-16.4 mV	22.89 ft	125.00 ml/min
3/11/2024 1:48 PM	03:36	6.96 pH	15.81 °C	1.58 mS/cm	0.40 mg/L	171.30 NTU	-27.9 mV	22.89 ft	125.00 ml/min
3/11/2024 1:50 PM	05:24	6.96 pH	15.50 °C	1.58 mS/cm	0.30 mg/L	139.97 NTU	-36.0 mV	23.03 ft	125.00 ml/min
3/11/2024 1:52 PM	07:12	6.96 pH	15.29 °C	1.59 mS/cm	0.25 mg/L	122.52 NTU	-44.9 mV	23.03 ft	125.00 ml/min
3/11/2024 1:54 PM	09:00	6.96 pH	15.51 °C	1.59 mS/cm	0.22 mg/L	107.38 NTU	-49.8 mV	23.03 ft	125.00 ml/min
3/11/2024 1:55 PM	10:48	6.96 pH	15.43 °C	1.59 mS/cm	0.18 mg/L	90.49 NTU	-55.1 mV	23.03 ft	125.00 ml/min
3/11/2024 1:57 PM	12:36	6.96 pH	15.53 °C	1.59 mS/cm	0.17 mg/L	73.66 NTU	-60.7 mV	23.03 ft	125.00 ml/min
3/11/2024 1:59 PM	14:24	6.96 pH	15.41 °C	1.59 mS/cm	0.16 mg/L	66.12 NTU	-64.5 mV	23.03 ft	125.00 ml/min
3/11/2024 2:01 PM	16:12	6.95 pH	15.43 °C	1.59 mS/cm	0.15 mg/L	53.63 NTU	-69.4 mV	23.03 ft	125.00 ml/min
3/11/2024 2:03 PM	18:00	6.95 pH	15.45 °C	1.59 mS/cm	0.14 mg/L	50.48 NTU	-78.8 mV	23.03 ft	125.00 ml/min
3/11/2024 2:04 PM	19:48	6.95 pH	15.44 °C	1.59 mS/cm	0.15 mg/L	52.59 NTU	-79.8 mV	23.03 ft	125.00 ml/min

3/11/2024 2:06 PM	21:36	6.96 pH	15.61 °C	1.59 mS/cm	0.23 mg/L	54.30 NTU	-81.0 mV	23.03 ft	125.00 ml/min
3/11/2024 2:08 PM	23:24	6.98 pH	14.74 °C	1.59 mS/cm	1.43 mg/L	52.09 NTU	-77.4 mV	23.03 ft	125.00 ml/min
3/11/2024 2:10 PM	25:12	6.96 pH	14.88 °C	1.60 mS/cm	0.18 mg/L	37.40 NTU	-81.6 mV	23.03 ft	125.00 ml/min
3/11/2024 2:12 PM	27:00	6.96 pH	15.02 °C	1.59 mS/cm	0.14 mg/L	32.67 NTU	-86.6 mV	23.03 ft	125.00 ml/min
3/11/2024 2:13 PM	28:48	6.96 pH	14.94 °C	1.60 mS/cm	0.13 mg/L	28.88 NTU	-90.9 mV	23.03 ft	125.00 ml/min
3/11/2024 2:15 PM	30:36	6.96 pH	14.93 °C	1.60 mS/cm	0.12 mg/L	26.57 NTU	-95.6 mV	23.03 ft	125.00 ml/min
3/11/2024 2:17 PM	32:24	6.96 pH	14.93 °C	1.60 mS/cm	0.12 mg/L	21.25 NTU	-97.9 mV	23.03 ft	125.00 ml/min
3/11/2024 2:19 PM	34:12	6.95 pH	15.10 °C	1.60 mS/cm	0.12 mg/L	19.29 NTU	-100.7 mV	23.03 ft	125.00 ml/min
3/11/2024 2:21 PM	36:00	6.96 pH	15.22 °C	1.61 mS/cm	0.13 mg/L	20.25 NTU	-103.3 mV	23.03 ft	125.00 ml/min
3/11/2024 2:22 PM	37:48	6.96 pH	15.06 °C	1.60 mS/cm	0.13 mg/L	18.45 NTU	-105.2 mV	23.03 ft	125.00 ml/min
3/11/2024 2:24 PM	39:36	6.96 pH	15.22 °C	1.61 mS/cm	0.13 mg/L	16.89 NTU	-108.1 mV	23.04 ft	125.00 ml/min
3/11/2024 2:26 PM	41:24	6.96 pH	15.33 °C	1.60 mS/cm	0.12 mg/L	15.73 NTU	-110.1 mV	23.04 ft	125.00 ml/min
3/11/2024 2:28 PM	43:12	6.96 pH	15.35 °C	1.61 mS/cm	0.12 mg/L	15.88 NTU	-112.6 mV	23.04 ft	125.00 ml/min
3/11/2024 2:30 PM	45:00	6.96 pH	15.36 °C	1.60 mS/cm	0.12 mg/L	12.10 NTU	-114.7 mV	23.04 ft	125.00 ml/min
3/11/2024 2:31 PM	46:48	6.96 pH	15.34 °C	1.61 mS/cm	0.12 mg/L	11.57 NTU	-116.2 mV	23.04 ft	125.00 ml/min
3/11/2024 2:33 PM	48:36	6.96 pH	15.22 °C	1.61 mS/cm	0.12 mg/L	11.33 NTU	-118.6 mV	23.04 ft	125.00 ml/min
3/11/2024 2:35 PM	50:24	6.96 pH	15.23 °C	1.61 mS/cm	0.12 mg/L	12.03 NTU	-120.4 mV	23.04 ft	125.00 ml/min
3/11/2024 2:37 PM	52:12	6.96 pH	15.54 °C	1.60 mS/cm	0.13 mg/L	10.67 NTU	-120.9 mV	23.04 ft	125.00 ml/min
3/11/2024 2:39 PM	54:00	6.96 pH	15.42 °C	1.61 mS/cm	0.12 mg/L	9.79 NTU	-124.2 mV	23.04 ft	125.00 ml/min
3/11/2024 2:40 PM	55:48	6.96 pH	15.50 °C	1.61 mS/cm	0.12 mg/L	6.92 NTU	-126.3 mV	23.04 ft	125.00 ml/min
3/11/2024 2:42 PM	57:36	6.96 pH	15.44 °C	1.61 mS/cm	0.12 mg/L	9.34 NTU	-126.4 mV	23.04 ft	125.00 ml/min
3/11/2024 2:44 PM	59:24	6.96 pH	15.48 °C	1.61 mS/cm	0.11 mg/L	6.78 NTU	-127.6 mV	23.04 ft	125.00 ml/min
3/11/2024 2:46 PM	01:01:12	6.96 pH	15.68 °C	1.61 mS/cm	0.12 mg/L	6.22 NTU	-128.2 mV	23.04 ft	125.00 ml/min
3/11/2024 2:48 PM	01:03:00	6.96 pH	15.75 °C	1.61 mS/cm	0.13 mg/L	7.20 NTU	-128.9 mV	23.04 ft	125.00 ml/min
3/11/2024 2:49 PM	01:04:48	6.99 pH	15.01 °C	1.61 mS/cm	1.10 mg/L	11.51 NTU	-119.3 mV	23.06 ft	125.00 ml/min
3/11/2024 2:51 PM	01:06:36	6.98 pH	15.25 °C	1.60 mS/cm	0.42 mg/L	14.42 NTU	-120.6 mV	23.06 ft	125.00 ml/min
3/11/2024 2:53 PM	01:08:24	6.97 pH	15.23 °C	1.60 mS/cm	0.32 mg/L	6.28 NTU	-125.5 mV	23.06 ft	125.00 ml/min
3/11/2024 2:55 PM	01:10:12	6.98 pH	15.11 °C	1.60 mS/cm	0.23 mg/L	5.92 NTU	-127.5 mV	23.06 ft	125.00 ml/min
3/11/2024 2:57 PM	01:12:00	6.98 pH	15.04 °C	1.61 mS/cm	0.19 mg/L	3.30 NTU	-127.5 mV	23.06 ft	125.00 ml/min

Samples

Sample ID:	Description:
MW33-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/11/2024 3:11:53 PM

Project: Neal South MW-26

Operator Name: Thao Larson

Location Name: MW-26 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 14.8 ft Total Depth: 29.8 ft Initial Depth to Water: 22.88 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 27.8 ft Pump Intake From TOC: 27.8 ft Estimated Total Volume Pumped: 3432.917 ml Flow Cell Volume: 130 ml Final Flow Rate: 175 ml/min Final Draw Down: 0.07 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1535

Weather Conditions:

Sunny 54°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/11/2024 3:11 PM	00:00	7.06 pH	16.12 °C	1.19 mS/cm	5.76 mg/L	59.87 NTU	-16.8 mV	22.88 ft	175.00 ml/min
3/11/2024 3:13 PM	01:47	7.02 pH	14.33 °C	1.19 mS/cm	1.51 mg/L	41.32 NTU	4.3 mV	22.88 ft	175.00 ml/min
3/11/2024 3:15 PM	03:34	7.03 pH	13.98 °C	1.19 mS/cm	1.22 mg/L	34.53 NTU	13.0 mV	22.88 ft	175.00 ml/min
3/11/2024 3:17 PM	05:21	7.03 pH	13.87 °C	1.19 mS/cm	1.16 mg/L	21.53 NTU	17.0 mV	22.95 ft	175.00 ml/min
3/11/2024 3:19 PM	07:08	7.03 pH	13.93 °C	1.20 mS/cm	1.12 mg/L	18.60 NTU	19.9 mV	22.95 ft	175.00 ml/min
3/11/2024 3:20 PM	08:55	6.97 pH	14.04 °C	1.20 mS/cm	1.12 mg/L	12.07 NTU	25.9 mV	22.95 ft	175.00 ml/min
3/11/2024 3:22 PM	10:42	6.96 pH	13.90 °C	1.20 mS/cm	1.07 mg/L	10.29 NTU	28.7 mV	22.95 ft	175.00 ml/min
3/11/2024 3:24 PM	12:29	6.96 pH	13.89 °C	1.20 mS/cm	1.04 mg/L	7.15 NTU	30.4 mV	22.95 ft	175.00 ml/min
3/11/2024 3:26 PM	14:16	6.96 pH	13.80 °C	1.20 mS/cm	0.99 mg/L	7.54 NTU	31.8 mV	22.95 ft	175.00 ml/min
3/11/2024 3:27 PM	16:03	6.97 pH	13.78 °C	1.20 mS/cm	0.97 mg/L	6.21 NTU	32.5 mV	22.95 ft	175.00 ml/min
3/11/2024 3:29 PM	17:50	6.98 pH	13.76 °C	1.21 mS/cm	0.92 mg/L	6.52 NTU	33.5 mV	22.95 ft	175.00 ml/min
3/11/2024 3:31 PM	19:37	6.98 pH	13.73 °C	1.21 mS/cm	0.81 mg/L	4.29 NTU	34.1 mV	22.95 ft	175.00 ml/min

Samples

Sample ID:	Description:
MW26-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/11/2024 3:32:06 PM

Project: Neal South MW-16

Operator Name: Paige Richards

Location Name: MW-16 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 18.7 ft Total Depth: 33.7 ft Initial Depth to Water: 26.91 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 29.7 ft Pump Intake From TOC: 31.7 ft Estimated Total Volume Pumped: 1230 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 1050309
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Test Notes:

Sample time: 1710

Weather Conditions:

Sunny, windy, 74 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/11/2024 3:32 PM	00:00	6.93 pH	14.57 °C	1.09 mS/cm	1.14 mg/L	1.19 NTU	106.2 mV	26.91 ft	150.00 ml/min
3/11/2024 3:34 PM	02:03	6.88 pH	14.35 °C	1.09 mS/cm	0.55 mg/L	1.52 NTU	105.8 mV	26.91 ft	150.00 ml/min
3/11/2024 3:36 PM	04:06	6.87 pH	14.26 °C	1.09 mS/cm	0.41 mg/L	0.52 NTU	105.3 mV	26.91 ft	150.00 ml/min
3/11/2024 3:38 PM	06:09	6.87 pH	14.41 °C	1.09 mS/cm	0.35 mg/L	0.43 NTU	104.6 mV	26.91 ft	150.00 ml/min
3/11/2024 3:40 PM	08:12	6.87 pH	14.25 °C	1.09 mS/cm	0.32 mg/L	0.20 NTU	104.1 mV	26.91 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW16-GW-0324	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 3/11/2024 3:49:34 PM

Project: Neal South MW-32

Operator Name: Thao Larson

Location Name: MW-32 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 14.8 ft Total Depth: 29.8 ft Initial Depth to Water: 22.78 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 27.8 ft Pump Intake From TOC: 27.8 ft Estimated Total Volume Pumped: 13731.667 ml Flow Cell Volume: 130 ml Final Flow Rate: 175 ml/min Final Draw Down: 0.16 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1715

Weather Conditions:

Sunny 54°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/11/2024 3:49 PM	00:00	7.06 pH	16.05 °C	1.41 mS/cm	2.95 mg/L	249.80 NTU	-59.6 mV	22.78 ft	175.00 ml/min
3/11/2024 3:51 PM	01:47	7.07 pH	14.93 °C	1.43 mS/cm	0.65 mg/L	193.93 NTU	-71.9 mV	22.78 ft	175.00 ml/min
3/11/2024 3:53 PM	03:34	7.07 pH	14.38 °C	1.43 mS/cm	0.41 mg/L	141.63 NTU	-74.6 mV	22.78 ft	175.00 ml/min
3/11/2024 3:54 PM	05:21	7.07 pH	14.24 °C	1.43 mS/cm	0.30 mg/L	116.66 NTU	-74.7 mV	22.78 ft	175.00 ml/min
3/11/2024 3:56 PM	07:08	7.07 pH	14.15 °C	1.43 mS/cm	0.24 mg/L	103.16 NTU	-74.1 mV	22.78 ft	175.00 ml/min
3/11/2024 3:58 PM	08:55	7.06 pH	14.10 °C	1.43 mS/cm	0.21 mg/L	97.15 NTU	-73.5 mV	22.95 ft	175.00 ml/min
3/11/2024 4:00 PM	10:42	7.05 pH	14.15 °C	1.43 mS/cm	0.20 mg/L	79.62 NTU	-71.6 mV	22.95 ft	175.00 ml/min
3/11/2024 4:02 PM	12:29	7.05 pH	14.07 °C	1.43 mS/cm	0.19 mg/L	96.51 NTU	-72.0 mV	22.95 ft	175.00 ml/min
3/11/2024 4:03 PM	14:16	7.05 pH	14.04 °C	1.43 mS/cm	0.18 mg/L	70.54 NTU	-72.5 mV	22.95 ft	175.00 ml/min
3/11/2024 4:05 PM	16:03	7.06 pH	13.99 °C	1.43 mS/cm	0.18 mg/L	61.70 NTU	-72.6 mV	22.95 ft	175.00 ml/min
3/11/2024 4:07 PM	17:50	7.06 pH	13.91 °C	1.43 mS/cm	0.17 mg/L	64.26 NTU	-73.1 mV	22.95 ft	175.00 ml/min
3/11/2024 4:09 PM	19:37	7.06 pH	14.04 °C	1.43 mS/cm	0.16 mg/L	62.66 NTU	-73.9 mV	22.95 ft	175.00 ml/min

3/11/2024 4:10 PM	21:24	7.07 pH	14.05 °C	1.43 mS/cm	0.17 mg/L	61.20 NTU	-73.7 mV	22.93 ft	175.00 ml/min
3/11/2024 4:12 PM	23:11	7.07 pH	14.13 °C	1.43 mS/cm	0.17 mg/L	59.40 NTU	-73.7 mV	22.93 ft	175.00 ml/min
3/11/2024 4:14 PM	24:58	7.07 pH	14.08 °C	1.43 mS/cm	0.16 mg/L	47.12 NTU	-74.5 mV	22.93 ft	175.00 ml/min
3/11/2024 4:16 PM	26:45	7.07 pH	14.11 °C	1.43 mS/cm	0.16 mg/L	42.41 NTU	-74.8 mV	22.93 ft	175.00 ml/min
3/11/2024 4:18 PM	28:32	7.07 pH	14.12 °C	1.43 mS/cm	0.16 mg/L	39.40 NTU	-75.6 mV	22.93 ft	175.00 ml/min
3/11/2024 4:19 PM	30:19	7.08 pH	13.91 °C	1.43 mS/cm	0.15 mg/L	42.83 NTU	-74.8 mV	22.93 ft	175.00 ml/min
3/11/2024 4:21 PM	32:06	7.08 pH	13.81 °C	1.43 mS/cm	0.15 mg/L	33.24 NTU	-74.7 mV	22.93 ft	175.00 ml/min
3/11/2024 4:23 PM	33:53	7.08 pH	13.89 °C	1.43 mS/cm	0.14 mg/L	36.50 NTU	-75.2 mV	22.93 ft	175.00 ml/min
3/11/2024 4:25 PM	35:40	7.08 pH	13.91 °C	1.43 mS/cm	0.13 mg/L	29.61 NTU	-75.7 mV	22.93 ft	175.00 ml/min
3/11/2024 4:27 PM	37:27	7.08 pH	13.88 °C	1.43 mS/cm	0.13 mg/L	26.92 NTU	-75.8 mV	22.93 ft	175.00 ml/min
3/11/2024 4:28 PM	39:14	7.08 pH	13.92 °C	1.43 mS/cm	0.14 mg/L	27.18 NTU	-75.9 mV	22.93 ft	175.00 ml/min
3/11/2024 4:30 PM	41:01	7.08 pH	13.82 °C	1.43 mS/cm	0.13 mg/L	25.61 NTU	-75.9 mV	22.93 ft	175.00 ml/min
3/11/2024 4:32 PM	42:48	7.08 pH	13.85 °C	1.43 mS/cm	0.12 mg/L	19.27 NTU	-76.5 mV	22.93 ft	175.00 ml/min
3/11/2024 4:34 PM	44:35	7.08 pH	13.76 °C	1.43 mS/cm	0.12 mg/L	17.95 NTU	-76.4 mV	22.93 ft	175.00 ml/min
3/11/2024 4:35 PM	46:22	7.08 pH	13.73 °C	1.43 mS/cm	0.11 mg/L	19.03 NTU	-76.6 mV	22.93 ft	175.00 ml/min
3/11/2024 4:37 PM	48:09	7.08 pH	13.95 °C	1.43 mS/cm	0.12 mg/L	19.65 NTU	-76.1 mV	22.94 ft	175.00 ml/min
3/11/2024 4:39 PM	49:56	7.08 pH	13.98 °C	1.43 mS/cm	0.10 mg/L	18.31 NTU	-77.0 mV	22.94 ft	175.00 ml/min
3/11/2024 4:41 PM	51:43	7.08 pH	13.89 °C	1.43 mS/cm	0.10 mg/L	17.47 NTU	-78.0 mV	22.94 ft	175.00 ml/min
3/11/2024 4:43 PM	53:30	7.09 pH	13.80 °C	1.43 mS/cm	0.09 mg/L	12.89 NTU	-78.2 mV	22.94 ft	175.00 ml/min
3/11/2024 4:44 PM	55:17	7.08 pH	13.76 °C	1.43 mS/cm	0.09 mg/L	12.66 NTU	-78.2 mV	22.94 ft	175.00 ml/min
3/11/2024 4:46 PM	57:04	7.08 pH	13.87 °C	1.43 mS/cm	0.09 mg/L	13.44 NTU	-78.1 mV	22.94 ft	175.00 ml/min
3/11/2024 4:48 PM	58:51	7.08 pH	13.77 °C	1.43 mS/cm	0.09 mg/L	19.95 NTU	-77.9 mV	22.94 ft	175.00 ml/min
3/11/2024 4:50 PM	01:00:38	7.08 pH	14.07 °C	1.43 mS/cm	0.09 mg/L	13.11 NTU	-78.0 mV	22.94 ft	175.00 ml/min
3/11/2024 4:51 PM	01:02:25	7.08 pH	13.98 °C	1.43 mS/cm	0.09 mg/L	8.34 NTU	-77.4 mV	22.94 ft	175.00 ml/min
3/11/2024 4:53 PM	01:04:12	7.09 pH	14.02 °C	1.43 mS/cm	0.08 mg/L	7.28 NTU	-78.6 mV	22.94 ft	175.00 ml/min
3/11/2024 4:55 PM	01:05:59	7.09 pH	13.89 °C	1.43 mS/cm	0.09 mg/L	13.19 NTU	-78.8 mV	22.94 ft	175.00 ml/min
3/11/2024 4:57 PM	01:07:46	7.09 pH	13.96 °C	1.43 mS/cm	0.09 mg/L	15.88 NTU	-78.8 mV	22.94 ft	175.00 ml/min
3/11/2024 4:59 PM	01:09:33	7.09 pH	13.74 °C	1.43 mS/cm	0.63 mg/L	11.61 NTU	-70.3 mV	22.94 ft	175.00 ml/min
3/11/2024 5:00 PM	01:11:20	7.09 pH	13.70 °C	1.43 mS/cm	0.18 mg/L	9.70 NTU	-72.4 mV	22.94 ft	175.00 ml/min

3/11/2024 5:02 PM	01:13:07	7.08 pH	13.74 °C	1.43 mS/cm	0.14 mg/L	10.28 NTU	-73.8 mV	22.94 ft	175.00 ml/min
3/11/2024 5:04 PM	01:14:54	7.08 pH	13.69 °C	1.43 mS/cm	0.13 mg/L	9.28 NTU	-74.7 mV	22.94 ft	175.00 ml/min
3/11/2024 5:06 PM	01:16:41	7.08 pH	13.64 °C	1.43 mS/cm	0.12 mg/L	7.34 NTU	-75.0 mV	22.94 ft	175.00 ml/min
3/11/2024 5:08 PM	01:18:28	7.08 pH	13.67 °C	1.43 mS/cm	0.11 mg/L	6.73 NTU	-75.7 mV	22.94 ft	175.00 ml/min

Samples

Sample ID:	Description:
MW32-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/11/2024 5:18:34 PM

Project: Neal South MW-14

Operator Name: Paige Richards

Location Name: MW-14 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 14.8 ft Total Depth: 29.8 ft Initial Depth to Water: 25.51 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 25.5 ft Pump Intake From TOC: 27.5 ft Estimated Total Volume Pumped: 750 ml Flow Cell Volume: 130 ml Final Flow Rate: 100 ml/min Final Draw Down: 0.04 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 1050309
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Test Notes:

Sample time: 1830

Weather Conditions:

Sunny, windy, 75 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/11/2024 5:18 PM	00:00	6.74 pH	19.14 °C	1.41 mS/cm	4.18 mg/L	1.03 NTU	126.1 mV	25.51 ft	75.00 ml/min
3/11/2024 5:20 PM	02:00	6.77 pH	17.55 °C	1.53 mS/cm	1.13 mg/L	0.74 NTU	105.4 mV	25.51 ft	100.00 ml/min
3/11/2024 5:22 PM	04:00	6.72 pH	17.18 °C	1.54 mS/cm	0.51 mg/L	0.53 NTU	104.9 mV	25.51 ft	100.00 ml/min
3/11/2024 5:24 PM	06:00	6.71 pH	17.15 °C	1.54 mS/cm	0.36 mg/L	0.33 NTU	104.6 mV	25.51 ft	100.00 ml/min
3/11/2024 5:26 PM	08:00	6.70 pH	17.23 °C	1.55 mS/cm	0.32 mg/L	0.37 NTU	104.3 mV	25.55 ft	100.00 ml/min

Samples

Sample ID:	Description:
MW14-GW-0324	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 3/11/2024 5:33:16 PM

Project: Neal South MW-30

Operator Name: Thao Larson

Location Name: MW-30 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 15.1 ft Total Depth: 30.1 ft Initial Depth to Water: 22.63 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 28.1 ft Pump Intake From TOC: 28.1 ft Estimated Total Volume Pumped: 15280 ml Flow Cell Volume: 130 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.07 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1855

Weather Conditions:

Sunny 54°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/11/2024 5:33 PM	00:00	7.15 pH	14.81 °C	1.41 mS/cm	4.39 mg/L	1,515.0 NTU	-72.6 mV	22.63 ft	200.00 ml/min
3/11/2024 5:35 PM	01:48	7.13 pH	14.04 °C	1.44 mS/cm	0.57 mg/L	658.01 NTU	-78.1 mV	22.63 ft	200.00 ml/min
3/11/2024 5:36 PM	03:36	7.14 pH	13.78 °C	1.44 mS/cm	0.35 mg/L	359.46 NTU	-81.3 mV	22.63 ft	200.00 ml/min
3/11/2024 5:38 PM	05:24	7.14 pH	13.66 °C	1.44 mS/cm	0.27 mg/L	261.73 NTU	-82.8 mV	22.63 ft	200.00 ml/min
3/11/2024 5:40 PM	07:12	7.15 pH	13.61 °C	1.44 mS/cm	0.23 mg/L	194.01 NTU	-83.7 mV	22.70 ft	200.00 ml/min
3/11/2024 5:42 PM	09:00	7.13 pH	13.55 °C	1.44 mS/cm	0.20 mg/L	175.42 NTU	-83.3 mV	22.70 ft	200.00 ml/min
3/11/2024 5:44 PM	10:48	7.12 pH	13.52 °C	1.44 mS/cm	0.18 mg/L	134.18 NTU	-83.1 mV	22.70 ft	200.00 ml/min
3/11/2024 5:45 PM	12:36	7.13 pH	13.57 °C	1.44 mS/cm	0.17 mg/L	111.38 NTU	-83.6 mV	22.70 ft	200.00 ml/min
3/11/2024 5:47 PM	14:24	7.13 pH	13.70 °C	1.44 mS/cm	0.17 mg/L	121.06 NTU	-84.8 mV	22.70 ft	200.00 ml/min
3/11/2024 5:49 PM	16:12	7.14 pH	13.58 °C	1.44 mS/cm	0.15 mg/L	87.71 NTU	-86.1 mV	22.70 ft	200.00 ml/min
3/11/2024 5:51 PM	18:00	7.14 pH	13.55 °C	1.44 mS/cm	0.15 mg/L	86.04 NTU	-87.0 mV	22.70 ft	200.00 ml/min
3/11/2024 5:53 PM	19:48	7.15 pH	13.55 °C	1.44 mS/cm	0.15 mg/L	94.53 NTU	-87.8 mV	22.70 ft	200.00 ml/min

3/11/2024 5:54 PM	21:36	7.16 pH	13.34 °C	1.44 mS/cm	2.81 mg/L	112.02 NTU	-83.1 mV	22.70 ft	200.00 ml/min
3/11/2024 5:56 PM	23:24	7.15 pH	13.60 °C	1.44 mS/cm	0.24 mg/L	140.59 NTU	-85.1 mV	22.70 ft	200.00 ml/min
3/11/2024 5:58 PM	25:12	7.16 pH	13.61 °C	1.44 mS/cm	0.19 mg/L	81.65 NTU	-86.7 mV	22.70 ft	200.00 ml/min
3/11/2024 6:00 PM	27:00	7.16 pH	13.56 °C	1.44 mS/cm	0.18 mg/L	67.88 NTU	-87.6 mV	22.70 ft	200.00 ml/min
3/11/2024 6:02 PM	28:48	7.16 pH	13.53 °C	1.44 mS/cm	0.17 mg/L	339.23 NTU	-88.0 mV	22.70 ft	200.00 ml/min
3/11/2024 6:03 PM	30:36	7.16 pH	13.51 °C	1.44 mS/cm	0.17 mg/L	76.98 NTU	-87.8 mV	22.70 ft	200.00 ml/min
3/11/2024 6:05 PM	32:24	7.16 pH	13.45 °C	1.44 mS/cm	0.17 mg/L	53.71 NTU	-87.7 mV	22.70 ft	200.00 ml/min
3/11/2024 6:06 PM	33:12	7.16 pH	13.48 °C	1.44 mS/cm	0.17 mg/L	43.42 NTU	-87.8 mV	22.70 ft	200.00 ml/min
3/11/2024 6:08 PM	35:00	7.16 pH	13.35 °C	1.44 mS/cm	0.17 mg/L	41.83 NTU	-88.0 mV	22.70 ft	200.00 ml/min
3/11/2024 6:10 PM	36:48	7.17 pH	13.54 °C	1.44 mS/cm	0.17 mg/L	41.13 NTU	-89.1 mV	22.70 ft	200.00 ml/min
3/11/2024 6:11 PM	38:36	7.17 pH	13.49 °C	1.44 mS/cm	0.16 mg/L	39.61 NTU	-89.7 mV	22.70 ft	200.00 ml/min
3/11/2024 6:13 PM	40:24	7.17 pH	13.40 °C	1.44 mS/cm	0.16 mg/L	30.64 NTU	-89.6 mV	22.70 ft	200.00 ml/min
3/11/2024 6:15 PM	42:12	7.17 pH	13.43 °C	1.44 mS/cm	0.15 mg/L	30.61 NTU	-89.9 mV	22.70 ft	200.00 ml/min
3/11/2024 6:17 PM	44:00	7.17 pH	13.42 °C	1.44 mS/cm	0.15 mg/L	25.80 NTU	-90.1 mV	22.70 ft	200.00 ml/min
3/11/2024 6:19 PM	45:48	7.18 pH	13.32 °C	1.43 mS/cm	0.14 mg/L	26.96 NTU	-90.2 mV	22.70 ft	200.00 ml/min
3/11/2024 6:20 PM	47:36	7.17 pH	13.37 °C	1.43 mS/cm	0.14 mg/L	23.26 NTU	-90.6 mV	22.70 ft	200.00 ml/min
3/11/2024 6:22 PM	49:24	7.18 pH	13.27 °C	1.43 mS/cm	0.14 mg/L	21.10 NTU	-90.4 mV	22.70 ft	200.00 ml/min
3/11/2024 6:24 PM	51:12	7.18 pH	13.25 °C	1.43 mS/cm	0.13 mg/L	17.17 NTU	-90.4 mV	22.70 ft	200.00 ml/min
3/11/2024 6:26 PM	53:00	7.18 pH	13.34 °C	1.43 mS/cm	0.13 mg/L	17.89 NTU	-90.9 mV	22.70 ft	200.00 ml/min
3/11/2024 6:28 PM	54:48	7.18 pH	13.28 °C	1.43 mS/cm	0.13 mg/L	16.80 NTU	-91.3 mV	22.70 ft	200.00 ml/min
3/11/2024 6:29 PM	56:36	7.18 pH	13.28 °C	1.43 mS/cm	0.13 mg/L	17.18 NTU	-91.6 mV	22.70 ft	200.00 ml/min
3/11/2024 6:31 PM	58:24	7.18 pH	13.29 °C	1.43 mS/cm	0.13 mg/L	15.90 NTU	-91.8 mV	22.70 ft	200.00 ml/min
3/11/2024 6:33 PM	01:00:12	7.18 pH	13.34 °C	1.43 mS/cm	0.12 mg/L	13.43 NTU	-91.9 mV	22.70 ft	200.00 ml/min
3/11/2024 6:35 PM	01:02:00	7.18 pH	13.45 °C	1.43 mS/cm	0.13 mg/L	12.24 NTU	-91.8 mV	22.70 ft	200.00 ml/min
3/11/2024 6:37 PM	01:03:48	7.18 pH	13.43 °C	1.42 mS/cm	0.13 mg/L	12.53 NTU	-92.4 mV	22.70 ft	200.00 ml/min
3/11/2024 6:38 PM	01:05:36	7.19 pH	13.30 °C	1.42 mS/cm	0.12 mg/L	12.57 NTU	-92.9 mV	22.70 ft	200.00 ml/min
3/11/2024 6:40 PM	01:07:24	7.19 pH	13.33 °C	1.42 mS/cm	0.13 mg/L	9.46 NTU	-92.6 mV	22.70 ft	200.00 ml/min
3/11/2024 6:42 PM	01:09:12	7.18 pH	13.36 °C	1.43 mS/cm	0.13 mg/L	6.18 NTU	-92.2 mV	22.70 ft	200.00 ml/min
3/11/2024 6:44 PM	01:11:00	7.18 pH	13.43 °C	1.43 mS/cm	0.13 mg/L	7.09 NTU	-92.3 mV	22.70 ft	200.00 ml/min

3/11/2024 6:46 PM	01:12:48	7.18 pH	13.42 °C	1.42 mS/cm	0.13 mg/L	6.13 NTU	-92.2 mV	22.70 ft	200.00 ml/min
3/11/2024 6:47 PM	01:14:36	7.19 pH	13.30 °C	1.42 mS/cm	0.13 mg/L	6.69 NTU	-92.3 mV	22.70 ft	200.00 ml/min
3/11/2024 6:49 PM	01:16:24	7.19 pH	13.38 °C	1.42 mS/cm	0.12 mg/L	5.42 NTU	-92.5 mV	22.70 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW30-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/12/2024 8:00:06 AM

Project: Neal South MW-19

Operator Name: Paige Richards

Location Name: MW-19 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 18.6 ft Total Depth: 33.6 ft Initial Depth to Water: 25.86 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 29.6 ft Pump Intake From TOC: 31.6 ft Estimated Total Volume Pumped: 2767.5 ml Flow Cell Volume: 130 ml Final Flow Rate: 225 ml/min Final Draw Down: 0.01 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 1050309
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Test Notes:

Sample time: 0840

Weather Conditions:

Partly cloudy, 40 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 8:00 AM	00:00	6.81 pH	11.37 °C	1.82 mS/cm	2.08 mg/L	2.97 NTU	118.1 mV	25.86 ft	225.00 ml/min
3/12/2024 8:02 AM	02:03	6.76 pH	11.70 °C	1.78 mS/cm	0.47 mg/L	0.11 NTU	75.6 mV	25.86 ft	225.00 ml/min
3/12/2024 8:04 AM	04:06	6.76 pH	11.78 °C	1.78 mS/cm	0.30 mg/L	0.00 NTU	51.3 mV	25.86 ft	225.00 ml/min
3/12/2024 8:06 AM	06:09	6.77 pH	11.74 °C	1.78 mS/cm	0.24 mg/L	0.00 NTU	35.2 mV	25.86 ft	225.00 ml/min
3/12/2024 8:08 AM	08:12	6.77 pH	11.76 °C	1.78 mS/cm	0.21 mg/L	0.00 NTU	22.9 mV	25.86 ft	225.00 ml/min
3/12/2024 8:10 AM	10:15	6.77 pH	11.78 °C	1.78 mS/cm	0.21 mg/L	0.00 NTU	14.1 mV	25.86 ft	225.00 ml/min
3/12/2024 8:12 AM	12:18	6.77 pH	11.87 °C	1.79 mS/cm	0.20 mg/L	0.00 NTU	5.1 mV	25.87 ft	225.00 ml/min

Samples

Sample ID:	Description:
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MW19-GW-0324

1L plastic w/ nitric x2
1L plastic unpreserved x1
250mL plastic w/ nitric x1
250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 3/12/2024 8:07:05 AM

Project: Neal South MW-51

Operator Name: Thao Larson

Location Name: MW-51 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 10.3 ft Total Depth: 25.3 ft Initial Depth to Water: 19.53 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 23.3 ft Pump Intake From TOC: 23.3 ft Estimated Total Volume Pumped: 9400 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.66 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 0920

Weather Conditions:

Sunny 38°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 8:07 AM	00:00	6.82 pH	9.91 °C	1.60 mS/cm	8.18 mg/L	890.68 NTU	21.5 mV	19.53 ft	200.00 ml/min
3/12/2024 8:08 AM	01:34	6.86 pH	10.48 °C	1.58 mS/cm	0.96 mg/L	804.05 NTU	-61.3 mV	19.53 ft	200.00 ml/min
3/12/2024 8:10 AM	03:08	6.88 pH	10.63 °C	1.58 mS/cm	0.42 mg/L	572.56 NTU	-70.3 mV	19.53 ft	200.00 ml/min
3/12/2024 8:11 AM	04:42	6.88 pH	10.65 °C	1.58 mS/cm	0.34 mg/L	479.90 NTU	-69.5 mV	20.06 ft	150.00 ml/min
3/12/2024 8:13 AM	06:16	6.89 pH	10.70 °C	1.58 mS/cm	0.29 mg/L	482.57 NTU	-65.0 mV	20.06 ft	150.00 ml/min
3/12/2024 8:14 AM	07:50	6.89 pH	10.75 °C	1.58 mS/cm	0.26 mg/L	430.70 NTU	-68.0 mV	20.06 ft	150.00 ml/min
3/12/2024 8:16 AM	09:24	6.91 pH	11.08 °C	1.58 mS/cm	1.21 mg/L	393.68 NTU	-67.0 mV	20.06 ft	150.00 ml/min
3/12/2024 8:18 AM	10:58	6.93 pH	10.71 °C	1.57 mS/cm	0.40 mg/L	333.14 NTU	-64.8 mV	20.09 ft	150.00 ml/min
3/12/2024 8:19 AM	12:32	6.93 pH	10.44 °C	1.57 mS/cm	0.41 mg/L	280.20 NTU	-66.9 mV	20.09 ft	150.00 ml/min
3/12/2024 8:21 AM	14:06	6.94 pH	10.32 °C	1.58 mS/cm	0.40 mg/L	241.07 NTU	-66.9 mV	20.09 ft	150.00 ml/min
3/12/2024 8:22 AM	15:40	6.95 pH	10.30 °C	1.58 mS/cm	0.35 mg/L	208.18 NTU	-67.5 mV	20.11 ft	150.00 ml/min
3/12/2024 8:24 AM	17:14	6.94 pH	10.53 °C	1.58 mS/cm	0.30 mg/L	176.72 NTU	-68.2 mV	20.11 ft	150.00 ml/min

3/12/2024 8:25 AM	18:48	6.95 pH	10.48 °C	1.58 mS/cm	0.25 mg/L	140.51 NTU	-72.1 mV	20.11 ft	150.00 ml/min
3/12/2024 8:27 AM	20:22	6.96 pH	10.52 °C	1.58 mS/cm	0.24 mg/L	126.86 NTU	-74.3 mV	20.15 ft	150.00 ml/min
3/12/2024 8:29 AM	21:56	6.96 pH	10.58 °C	1.58 mS/cm	0.22 mg/L	111.09 NTU	-74.4 mV	20.15 ft	150.00 ml/min
3/12/2024 8:30 AM	23:30	6.96 pH	10.54 °C	1.58 mS/cm	0.20 mg/L	86.89 NTU	-76.2 mV	20.15 ft	150.00 ml/min
3/12/2024 8:32 AM	25:04	6.97 pH	10.59 °C	1.58 mS/cm	0.19 mg/L	68.55 NTU	-76.9 mV	20.15 ft	150.00 ml/min
3/12/2024 8:33 AM	26:38	6.97 pH	10.62 °C	1.58 mS/cm	0.18 mg/L	57.72 NTU	-77.5 mV	20.15 ft	150.00 ml/min
3/12/2024 8:35 AM	28:12	6.98 pH	10.65 °C	1.58 mS/cm	0.18 mg/L	49.24 NTU	-78.3 mV	20.15 ft	150.00 ml/min
3/12/2024 8:36 AM	29:46	6.98 pH	10.68 °C	1.58 mS/cm	0.18 mg/L	44.90 NTU	-78.9 mV	20.15 ft	150.00 ml/min
3/12/2024 8:38 AM	31:20	6.98 pH	10.85 °C	1.59 mS/cm	0.18 mg/L	46.91 NTU	-78.8 mV	20.15 ft	150.00 ml/min
3/12/2024 8:39 AM	32:54	6.98 pH	10.94 °C	1.59 mS/cm	0.17 mg/L	39.01 NTU	-79.6 mV	20.17 ft	150.00 ml/min
3/12/2024 8:41 AM	34:28	6.98 pH	11.04 °C	1.59 mS/cm	0.17 mg/L	33.26 NTU	-81.3 mV	20.17 ft	150.00 ml/min
3/12/2024 8:43 AM	36:02	6.99 pH	10.95 °C	1.59 mS/cm	0.16 mg/L	33.14 NTU	-81.6 mV	20.17 ft	150.00 ml/min
3/12/2024 8:44 AM	37:36	6.99 pH	10.87 °C	1.59 mS/cm	0.16 mg/L	27.54 NTU	-83.0 mV	20.17 ft	150.00 ml/min
3/12/2024 8:46 AM	39:10	6.99 pH	10.87 °C	1.59 mS/cm	0.16 mg/L	25.81 NTU	-83.6 mV	20.17 ft	150.00 ml/min
3/12/2024 8:47 AM	40:44	6.99 pH	10.96 °C	1.59 mS/cm	0.15 mg/L	22.79 NTU	-84.1 mV	20.17 ft	150.00 ml/min
3/12/2024 8:49 AM	42:18	7.00 pH	10.99 °C	1.59 mS/cm	0.15 mg/L	22.76 NTU	-84.1 mV	20.17 ft	150.00 ml/min
3/12/2024 8:50 AM	43:52	6.99 pH	10.99 °C	1.59 mS/cm	0.15 mg/L	21.62 NTU	-84.7 mV	20.17 ft	150.00 ml/min
3/12/2024 8:52 AM	45:26	7.00 pH	10.99 °C	1.59 mS/cm	0.15 mg/L	20.40 NTU	-85.9 mV	20.17 ft	150.00 ml/min
3/12/2024 8:54 AM	47:00	7.00 pH	11.04 °C	1.59 mS/cm	0.15 mg/L	20.64 NTU	-86.2 mV	20.19 ft	150.00 ml/min
3/12/2024 8:55 AM	48:34	7.00 pH	11.09 °C	1.60 mS/cm	0.14 mg/L	20.96 NTU	-86.7 mV	20.19 ft	150.00 ml/min
3/12/2024 8:57 AM	50:08	7.01 pH	11.09 °C	1.60 mS/cm	0.14 mg/L	17.45 NTU	-88.0 mV	20.19 ft	150.00 ml/min
3/12/2024 8:58 AM	51:42	7.01 pH	11.11 °C	1.60 mS/cm	0.15 mg/L	12.28 NTU	-89.2 mV	20.19 ft	150.00 ml/min
3/12/2024 9:00 AM	53:16	7.02 pH	11.12 °C	1.60 mS/cm	0.14 mg/L	10.44 NTU	-89.4 mV	20.19 ft	150.00 ml/min
3/12/2024 9:01 AM	54:50	7.02 pH	11.11 °C	1.60 mS/cm	0.14 mg/L	8.51 NTU	-89.8 mV	20.19 ft	150.00 ml/min
3/12/2024 9:03 AM	56:24	7.02 pH	11.13 °C	1.60 mS/cm	0.14 mg/L	6.48 NTU	-90.6 mV	20.19 ft	150.00 ml/min
3/12/2024 9:05 AM	57:58	7.02 pH	11.15 °C	1.60 mS/cm	0.14 mg/L	6.45 NTU	-91.5 mV	20.19 ft	150.00 ml/min
3/12/2024 9:06 AM	59:32	7.03 pH	11.15 °C	1.60 mS/cm	0.13 mg/L	5.31 NTU	-92.2 mV	20.19 ft	150.00 ml/min
3/12/2024 9:08 AM	01:01:06	7.02 pH	11.08 °C	1.60 mS/cm	0.13 mg/L	4.95 NTU	-91.8 mV	20.19 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW51-GW-0324	
MW51-GW-0324 MS	
MW51-GW-0324 MSD	

Low-Flow Test Report:

Test Date / Time: 3/12/2024 8:46:37 AM

Project: Neal South MW-20

Operator Name: Paige Richards

Location Name: MW-20 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 18.2 ft Total Depth: 33.2 ft Initial Depth to Water: 26.78 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 29.2 ft Pump Intake From TOC: 31.2 ft Estimated Total Volume Pumped: 7072.5 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 1050309
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Test Notes:

Sample time: 1020

Weather Conditions:

Partly cloudy, 40 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 8:46 AM	00:00	7.15 pH	8.50 °C	1.58 mS/cm	8.57 mg/L	92.06 NTU	-11.8 mV	26.78 ft	150.00 ml/min
3/12/2024 8:48 AM	02:03	6.99 pH	10.38 °C	1.66 mS/cm	1.80 mg/L	54.96 NTU	-24.5 mV	26.78 ft	150.00 ml/min
3/12/2024 8:50 AM	04:06	6.98 pH	10.74 °C	1.61 mS/cm	0.74 mg/L	38.94 NTU	-24.4 mV	26.78 ft	150.00 ml/min
3/12/2024 8:52 AM	06:09	6.98 pH	10.81 °C	1.57 mS/cm	0.53 mg/L	24.71 NTU	-23.3 mV	26.78 ft	150.00 ml/min
3/12/2024 8:54 AM	08:12	6.98 pH	10.88 °C	1.56 mS/cm	0.45 mg/L	21.95 NTU	-22.3 mV	26.78 ft	150.00 ml/min
3/12/2024 8:56 AM	10:15	6.97 pH	10.92 °C	1.56 mS/cm	0.39 mg/L	17.12 NTU	-22.0 mV	26.78 ft	150.00 ml/min
3/12/2024 8:58 AM	12:18	6.97 pH	10.91 °C	1.56 mS/cm	0.38 mg/L	20.24 NTU	-21.6 mV	26.78 ft	150.00 ml/min
3/12/2024 9:00 AM	14:21	6.97 pH	10.91 °C	1.56 mS/cm	0.37 mg/L	16.58 NTU	-21.7 mV	26.80 ft	150.00 ml/min
3/12/2024 9:03 AM	16:24	6.97 pH	10.88 °C	1.56 mS/cm	0.38 mg/L	13.20 NTU	-21.8 mV	26.80 ft	150.00 ml/min
3/12/2024 9:05 AM	18:27	6.97 pH	10.86 °C	1.53 mS/cm	0.38 mg/L	21.55 NTU	-21.3 mV	26.80 ft	150.00 ml/min
3/12/2024 9:07 AM	20:30	6.97 pH	10.88 °C	1.57 mS/cm	0.37 mg/L	24.54 NTU	-22.5 mV	26.80 ft	150.00 ml/min

3/12/2024 9:09 AM	22:33	6.97 pH	10.90 °C	1.57 mS/cm	0.37 mg/L	24.28 NTU	-23.1 mV	26.80 ft	150.00 ml/min
3/12/2024 9:11 AM	24:36	6.97 pH	10.88 °C	1.57 mS/cm	0.37 mg/L	17.50 NTU	-23.6 mV	26.80 ft	150.00 ml/min
3/12/2024 9:13 AM	26:39	6.97 pH	10.86 °C	1.57 mS/cm	0.37 mg/L	15.52 NTU	-24.3 mV	26.80 ft	150.00 ml/min
3/12/2024 9:15 AM	28:42	6.97 pH	10.89 °C	1.58 mS/cm	0.36 mg/L	13.01 NTU	-25.3 mV	26.78 ft	150.00 ml/min
3/12/2024 9:17 AM	30:45	6.97 pH	10.87 °C	1.59 mS/cm	0.36 mg/L	6.23 NTU	-26.3 mV	26.78 ft	150.00 ml/min
3/12/2024 9:19 AM	32:48	6.98 pH	10.92 °C	1.59 mS/cm	0.35 mg/L	11.06 NTU	-26.7 mV	26.78 ft	150.00 ml/min
3/12/2024 9:21 AM	34:51	6.97 pH	10.92 °C	1.60 mS/cm	0.35 mg/L	12.92 NTU	-28.1 mV	26.78 ft	150.00 ml/min
3/12/2024 9:23 AM	36:54	6.97 pH	10.98 °C	1.60 mS/cm	0.34 mg/L	8.75 NTU	-29.2 mV	26.78 ft	150.00 ml/min
3/12/2024 9:25 AM	38:57	6.97 pH	11.08 °C	1.60 mS/cm	0.34 mg/L	6.30 NTU	-30.2 mV	26.78 ft	150.00 ml/min
3/12/2024 9:27 AM	41:00	6.97 pH	11.12 °C	1.60 mS/cm	0.34 mg/L	7.64 NTU	-31.0 mV	26.78 ft	150.00 ml/min
3/12/2024 9:29 AM	43:03	6.97 pH	11.14 °C	1.61 mS/cm	0.34 mg/L	9.26 NTU	-31.9 mV	26.78 ft	150.00 ml/min
3/12/2024 9:31 AM	45:06	6.97 pH	11.22 °C	1.61 mS/cm	0.33 mg/L	5.07 NTU	-33.0 mV	26.78 ft	150.00 ml/min
3/12/2024 9:33 AM	47:09	6.97 pH	11.12 °C	1.61 mS/cm	0.33 mg/L	4.25 NTU	-33.8 mV	26.78 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW20-GW-0324	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 3/12/2024 9:50:55 AM

Project: Neal South MW-50

Operator Name: Thao Larson

Location Name: MW-50 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 11.2 ft Total Depth: 26.2 ft Initial Depth to Water: 17.38 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 24.2 ft Pump Intake From TOC: 24.2 ft Estimated Total Volume Pumped: 10306.25 ml Flow Cell Volume: 130 ml Final Flow Rate: 125 ml/min Final Draw Down: -0.84 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1125

Weather Conditions:

Sunny 38°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 9:50 AM	00:00	6.94 pH	10.48 °C	1.62 mS/cm	3.54 mg/L	1,287.4 NTU	-59.9 mV	16.38 ft	125.00 ml/min
3/12/2024 9:52 AM	01:37	6.92 pH	10.67 °C	1.62 mS/cm	1.08 mg/L	160.17 NTU	-56.9 mV	16.38 ft	125.00 ml/min
3/12/2024 9:54 AM	03:14	6.91 pH	10.71 °C	1.62 mS/cm	0.61 mg/L	90.56 NTU	-54.8 mV	16.38 ft	125.00 ml/min
3/12/2024 9:55 AM	04:51	6.89 pH	10.77 °C	1.62 mS/cm	0.40 mg/L	191.74 NTU	-50.9 mV	16.54 ft	125.00 ml/min
3/12/2024 9:57 AM	06:28	6.88 pH	10.72 °C	1.62 mS/cm	0.90 mg/L	186.15 NTU	-44.6 mV	16.54 ft	125.00 ml/min
3/12/2024 9:59 AM	08:05	6.87 pH	10.74 °C	1.63 mS/cm	1.19 mg/L	210.26 NTU	-41.6 mV	16.54 ft	125.00 ml/min
3/12/2024 10:00 AM	09:42	6.87 pH	10.76 °C	1.63 mS/cm	0.67 mg/L	208.59 NTU	-39.6 mV	16.54 ft	125.00 ml/min
3/12/2024 10:02 AM	11:19	6.87 pH	10.76 °C	1.64 mS/cm	0.56 mg/L	167.99 NTU	-38.5 mV	16.54 ft	125.00 ml/min
3/12/2024 10:03 AM	12:56	6.90 pH	10.71 °C	1.66 mS/cm	2.96 mg/L	245.35 NTU	-42.2 mV	16.54 ft	125.00 ml/min
3/12/2024 10:05 AM	14:33	6.89 pH	10.62 °C	1.66 mS/cm	0.45 mg/L	137.56 NTU	-39.9 mV	16.56 ft	125.00 ml/min
3/12/2024 10:07 AM	16:10	6.88 pH	10.61 °C	1.67 mS/cm	0.29 mg/L	118.47 NTU	-39.0 mV	16.56 ft	125.00 ml/min
3/12/2024 10:08 AM	17:47	6.88 pH	10.60 °C	1.68 mS/cm	0.25 mg/L	100.48 NTU	-38.9 mV	16.56 ft	125.00 ml/min

3/12/2024 10:10 AM	19:24	6.88 pH	10.59 °C	1.67 mS/cm	0.22 mg/L	98.48 NTU	-38.3 mV	16.56 ft	125.00 ml/min
3/12/2024 10:11 AM	21:01	6.88 pH	10.64 °C	1.67 mS/cm	0.20 mg/L	91.04 NTU	-38.2 mV	16.56 ft	125.00 ml/min
3/12/2024 10:13 AM	22:38	6.88 pH	10.67 °C	1.67 mS/cm	0.17 mg/L	91.73 NTU	-37.9 mV	16.56 ft	125.00 ml/min
3/12/2024 10:15 AM	24:15	6.88 pH	10.66 °C	1.67 mS/cm	0.16 mg/L	75.28 NTU	-37.3 mV	16.56 ft	125.00 ml/min
3/12/2024 10:16 AM	25:52	6.88 pH	10.68 °C	1.67 mS/cm	0.16 mg/L	75.42 NTU	-37.4 mV	16.56 ft	125.00 ml/min
3/12/2024 10:18 AM	27:29	6.88 pH	10.71 °C	1.67 mS/cm	0.14 mg/L	59.75 NTU	-37.5 mV	16.56 ft	125.00 ml/min
3/12/2024 10:20 AM	29:06	6.88 pH	10.69 °C	1.67 mS/cm	0.13 mg/L	60.89 NTU	-37.5 mV	16.56 ft	125.00 ml/min
3/12/2024 10:21 AM	30:43	6.88 pH	10.64 °C	1.67 mS/cm	0.13 mg/L	49.78 NTU	-37.3 mV	16.56 ft	125.00 ml/min
3/12/2024 10:23 AM	32:20	6.88 pH	10.72 °C	1.67 mS/cm	0.13 mg/L	51.18 NTU	-37.3 mV	16.56 ft	125.00 ml/min
3/12/2024 10:24 AM	33:57	6.90 pH	10.77 °C	1.67 mS/cm	2.04 mg/L	325.02 NTU	-39.0 mV	16.56 ft	125.00 ml/min
3/12/2024 10:26 AM	35:34	6.88 pH	10.75 °C	1.67 mS/cm	0.69 mg/L	184.16 NTU	-36.8 mV	16.56 ft	125.00 ml/min
3/12/2024 10:28 AM	37:11	6.91 pH	10.77 °C	1.68 mS/cm	3.02 mg/L	68.61 NTU	-39.8 mV	16.56 ft	125.00 ml/min
3/12/2024 10:29 AM	38:48	6.89 pH	10.84 °C	1.66 mS/cm	0.77 mg/L	128.92 NTU	-36.7 mV	16.56 ft	125.00 ml/min
3/12/2024 10:31 AM	40:25	6.88 pH	10.83 °C	1.67 mS/cm	0.57 mg/L	47.55 NTU	-35.8 mV	16.56 ft	125.00 ml/min
3/12/2024 10:32 AM	42:02	6.88 pH	10.91 °C	1.67 mS/cm	0.39 mg/L	42.44 NTU	-35.8 mV	16.56 ft	125.00 ml/min
3/12/2024 10:34 AM	43:39	6.88 pH	10.96 °C	1.67 mS/cm	0.31 mg/L	35.65 NTU	-35.8 mV	16.56 ft	125.00 ml/min
3/12/2024 10:36 AM	45:16	6.88 pH	11.04 °C	1.67 mS/cm	0.25 mg/L	34.66 NTU	-36.2 mV	16.56 ft	125.00 ml/min
3/12/2024 10:37 AM	46:53	6.88 pH	11.11 °C	1.67 mS/cm	0.22 mg/L	34.56 NTU	-36.6 mV	16.56 ft	125.00 ml/min
3/12/2024 10:39 AM	48:30	6.89 pH	11.14 °C	1.67 mS/cm	0.20 mg/L	33.43 NTU	-36.1 mV	16.56 ft	125.00 ml/min
3/12/2024 10:41 AM	50:07	6.88 pH	11.30 °C	1.67 mS/cm	0.17 mg/L	28.55 NTU	-36.2 mV	16.56 ft	125.00 ml/min
3/12/2024 10:42 AM	51:44	6.88 pH	11.40 °C	1.67 mS/cm	0.17 mg/L	26.57 NTU	-36.2 mV	16.54 ft	125.00 ml/min
3/12/2024 10:44 AM	53:21	6.88 pH	11.46 °C	1.67 mS/cm	0.17 mg/L	24.65 NTU	-36.3 mV	16.54 ft	125.00 ml/min
3/12/2024 10:45 AM	54:58	6.88 pH	11.40 °C	1.67 mS/cm	0.16 mg/L	22.99 NTU	-35.9 mV	16.54 ft	125.00 ml/min
3/12/2024 10:47 AM	56:35	6.88 pH	11.36 °C	1.67 mS/cm	0.15 mg/L	22.08 NTU	-36.0 mV	16.54 ft	125.00 ml/min
3/12/2024 10:49 AM	58:12	6.88 pH	11.45 °C	1.66 mS/cm	0.14 mg/L	20.77 NTU	-35.9 mV	16.54 ft	125.00 ml/min
3/12/2024 10:50 AM	59:49	6.88 pH	11.41 °C	1.67 mS/cm	0.14 mg/L	19.10 NTU	-36.0 mV	16.54 ft	125.00 ml/min
3/12/2024 10:52 AM	01:01:26	6.88 pH	11.54 °C	1.67 mS/cm	0.13 mg/L	17.36 NTU	-36.2 mV	16.54 ft	125.00 ml/min
3/12/2024 10:53 AM	01:03:03	6.88 pH	11.60 °C	1.67 mS/cm	0.13 mg/L	14.05 NTU	-36.0 mV	16.54 ft	125.00 ml/min
3/12/2024 10:55 AM	01:04:40	6.88 pH	11.60 °C	1.67 mS/cm	0.12 mg/L	12.54 NTU	-35.8 mV	16.54 ft	125.00 ml/min

3/12/2024 10:57 AM	01:06:17	6.88 pH	11.65 °C	1.67 mS/cm	0.11 mg/L	11.55 NTU	-35.9 mV	16.54 ft	125.00 ml/min
3/12/2024 10:58 AM	01:07:54	6.87 pH	11.68 °C	1.67 mS/cm	0.11 mg/L	11.63 NTU	-35.5 mV	16.54 ft	125.00 ml/min
3/12/2024 11:00 AM	01:09:31	6.87 pH	11.77 °C	1.67 mS/cm	0.10 mg/L	10.78 NTU	-35.6 mV	16.54 ft	125.00 ml/min
3/12/2024 11:02 AM	01:11:08	6.88 pH	11.79 °C	1.67 mS/cm	0.10 mg/L	9.61 NTU	-35.5 mV	16.54 ft	125.00 ml/min
3/12/2024 11:03 AM	01:12:45	6.87 pH	11.77 °C	1.67 mS/cm	0.10 mg/L	9.64 NTU	-35.5 mV	16.54 ft	125.00 ml/min
3/12/2024 11:05 AM	01:14:22	6.87 pH	11.87 °C	1.67 mS/cm	0.10 mg/L	8.19 NTU	-35.4 mV	16.54 ft	125.00 ml/min
3/12/2024 11:06 AM	01:15:59	6.87 pH	11.85 °C	1.67 mS/cm	0.10 mg/L	6.25 NTU	-35.3 mV	16.54 ft	125.00 ml/min
3/12/2024 11:08 AM	01:17:36	6.87 pH	11.90 °C	1.67 mS/cm	0.10 mg/L	7.40 NTU	-35.3 mV	16.54 ft	125.00 ml/min
3/12/2024 11:10 AM	01:19:13	6.87 pH	11.88 °C	1.67 mS/cm	0.10 mg/L	6.46 NTU	-35.2 mV	16.54 ft	125.00 ml/min
3/12/2024 11:11 AM	01:20:50	6.87 pH	11.91 °C	1.67 mS/cm	0.10 mg/L	5.90 NTU	-35.3 mV	16.54 ft	125.00 ml/min
3/12/2024 11:13 AM	01:22:27	6.87 pH	11.99 °C	1.67 mS/cm	0.10 mg/L	5.44 NTU	-34.9 mV	16.54 ft	125.00 ml/min

Samples

Sample ID:	Description:
MW50-GW-0324	
DP02-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/12/2024 10:32:37 AM

Project: Neal South MW-4

Operator Name: Paige Richards

Location Name: MW-4 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 11.7 ft Total Depth: 26.7 ft Initial Depth to Water: 20.57 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 22.4 ft Pump Intake From TOC: 24.4 ft Estimated Total Volume Pumped: 1720.833 ml Flow Cell Volume: 130 ml Final Flow Rate: 175 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 1050309
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Test Notes:

Sample time: 1115

Weather Conditions:

Overcast, 47 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 10:32 AM	00:00	7.07 pH	10.60 °C	1.13 mS/cm	8.84 mg/L	17.25 NTU	40.1 mV	20.57 ft	175.00 ml/min
3/12/2024 10:34 AM	01:58	6.95 pH	11.03 °C	1.10 mS/cm	1.30 mg/L	11.55 NTU	37.4 mV	20.57 ft	175.00 ml/min
3/12/2024 10:36 AM	03:56	6.94 pH	11.11 °C	1.10 mS/cm	0.51 mg/L	7.89 NTU	36.6 mV	20.57 ft	175.00 ml/min
3/12/2024 10:38 AM	05:54	6.94 pH	11.16 °C	1.10 mS/cm	0.38 mg/L	5.87 NTU	35.5 mV	20.57 ft	175.00 ml/min
3/12/2024 10:40 AM	07:52	6.95 pH	11.17 °C	1.10 mS/cm	0.31 mg/L	2.35 NTU	33.7 mV	20.57 ft	175.00 ml/min
3/12/2024 10:42 AM	09:50	6.96 pH	11.19 °C	1.09 mS/cm	0.28 mg/L	2.10 NTU	31.1 mV	20.57 ft	175.00 ml/min

Samples

Sample ID:	Description:
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MW04-GW-0324

1L plastic w/ nitric x2
1L plastic unpreserved x1
250mL plastic w/ nitric x1
250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 3/12/2024 11:26:05 AM

Project: Neal South MW-18

Operator Name: Paige Richards

Location Name: MW-18 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 13.5 ft Total Depth: 28.5 ft Initial Depth to Water: 20.55 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 24.5 ft Pump Intake From TOC: 26.5 ft Estimated Total Volume Pumped: 17205.416 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.07 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 1050309
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Test Notes:

Sample time: 1310

Weather Conditions:

Partly cloudy, 52 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 11:26 AM	00:00	6.98 pH	12.23 °C	1.45 mS/cm	3.26 mg/L	72.30 NTU	7.4 mV	20.55 ft	325.00 ml/min
3/12/2024 11:28 AM	01:59	6.92 pH	12.13 °C	1.44 mS/cm	0.29 mg/L	31.40 NTU	-20.5 mV	20.55 ft	325.00 ml/min
3/12/2024 11:30 AM	03:58	6.93 pH	12.11 °C	1.43 mS/cm	0.16 mg/L	23.96 NTU	-31.1 mV	20.55 ft	325.00 ml/min
3/12/2024 11:32 AM	05:57	6.94 pH	12.14 °C	1.43 mS/cm	0.12 mg/L	11.38 NTU	-37.8 mV	20.55 ft	325.00 ml/min
3/12/2024 11:34 AM	07:56	6.95 pH	12.12 °C	1.43 mS/cm	0.11 mg/L	15.15 NTU	-42.7 mV	20.55 ft	325.00 ml/min
3/12/2024 11:36 AM	09:55	6.95 pH	12.19 °C	1.43 mS/cm	0.10 mg/L	15.27 NTU	-45.2 mV	20.68 ft	325.00 ml/min
3/12/2024 11:37 AM	11:54	6.97 pH	12.17 °C	1.43 mS/cm	0.10 mg/L	15.32 NTU	-49.1 mV	20.68 ft	325.00 ml/min
3/12/2024 11:39 AM	13:53	6.97 pH	12.27 °C	1.43 mS/cm	0.09 mg/L	11.11 NTU	-51.9 mV	20.68 ft	325.00 ml/min
3/12/2024 11:41 AM	15:52	6.97 pH	12.24 °C	1.43 mS/cm	0.08 mg/L	9.10 NTU	-54.2 mV	20.68 ft	325.00 ml/min
3/12/2024 11:43 AM	17:51	6.97 pH	12.29 °C	1.42 mS/cm	0.08 mg/L	7.22 NTU	-56.8 mV	20.68 ft	325.00 ml/min
3/12/2024 11:45 AM	19:50	6.97 pH	12.25 °C	1.43 mS/cm	0.08 mg/L	9.90 NTU	-58.6 mV	20.68 ft	325.00 ml/min

3/12/2024 11:47 AM	21:49	6.97 pH	12.32 °C	1.43 mS/cm	0.07 mg/L	8.16 NTU	-59.7 mV	20.68 ft	325.00 ml/min
3/12/2024 11:49 AM	23:48	6.97 pH	12.35 °C	1.43 mS/cm	0.07 mg/L	9.32 NTU	-60.5 mV	20.68 ft	325.00 ml/min
3/12/2024 11:51 AM	25:47	6.97 pH	12.36 °C	1.43 mS/cm	0.07 mg/L	7.86 NTU	-61.7 mV	20.68 ft	325.00 ml/min
3/12/2024 11:53 AM	27:46	6.96 pH	12.35 °C	1.43 mS/cm	0.07 mg/L	14.65 NTU	-61.8 mV	20.68 ft	325.00 ml/min
3/12/2024 11:55 AM	29:45	6.98 pH	12.34 °C	1.43 mS/cm	0.07 mg/L	12.90 NTU	-63.0 mV	20.68 ft	325.00 ml/min
3/12/2024 11:57 AM	31:44	6.97 pH	12.38 °C	1.43 mS/cm	0.07 mg/L	13.73 NTU	-63.6 mV	20.68 ft	325.00 ml/min
3/12/2024 11:59 AM	33:43	6.97 pH	12.65 °C	1.43 mS/cm	0.06 mg/L	14.01 NTU	-64.5 mV	20.68 ft	150.00 ml/min
3/12/2024 12:01 PM	35:42	6.97 pH	12.95 °C	1.43 mS/cm	0.10 mg/L	9.90 NTU	-63.8 mV	20.68 ft	150.00 ml/min
3/12/2024 12:03 PM	37:41	6.97 pH	13.11 °C	1.43 mS/cm	0.13 mg/L	12.00 NTU	-63.2 mV	20.68 ft	150.00 ml/min
3/12/2024 12:05 PM	39:40	6.96 pH	13.25 °C	1.43 mS/cm	0.15 mg/L	10.57 NTU	-63.2 mV	20.62 ft	150.00 ml/min
3/12/2024 12:07 PM	41:39	6.96 pH	13.21 °C	1.43 mS/cm	0.15 mg/L	10.79 NTU	-63.4 mV	20.62 ft	150.00 ml/min
3/12/2024 12:09 PM	43:38	6.96 pH	13.17 °C	1.43 mS/cm	0.14 mg/L	13.95 NTU	-63.4 mV	20.62 ft	150.00 ml/min
3/12/2024 12:11 PM	45:37	6.96 pH	13.17 °C	1.43 mS/cm	0.15 mg/L	17.49 NTU	-63.9 mV	20.62 ft	150.00 ml/min
3/12/2024 12:13 PM	47:36	6.97 pH	13.18 °C	1.43 mS/cm	0.13 mg/L	14.49 NTU	-64.2 mV	20.62 ft	150.00 ml/min
3/12/2024 12:15 PM	49:35	6.97 pH	13.09 °C	1.43 mS/cm	0.13 mg/L	11.83 NTU	-64.3 mV	20.62 ft	150.00 ml/min
3/12/2024 12:17 PM	51:34	6.96 pH	13.04 °C	1.43 mS/cm	0.14 mg/L	11.37 NTU	-64.3 mV	20.62 ft	150.00 ml/min
3/12/2024 12:19 PM	53:33	6.97 pH	13.19 °C	1.43 mS/cm	0.12 mg/L	11.15 NTU	-64.5 mV	20.62 ft	150.00 ml/min
3/12/2024 12:21 PM	55:32	6.96 pH	13.14 °C	1.43 mS/cm	0.12 mg/L	12.36 NTU	-64.2 mV	20.62 ft	150.00 ml/min
3/12/2024 12:23 PM	57:31	6.97 pH	13.10 °C	1.43 mS/cm	0.11 mg/L	10.87 NTU	-63.9 mV	20.62 ft	150.00 ml/min
3/12/2024 12:25 PM	59:30	6.97 pH	13.12 °C	1.43 mS/cm	0.11 mg/L	9.60 NTU	-64.0 mV	20.62 ft	150.00 ml/min
3/12/2024 12:27 PM	01:01:29	6.96 pH	13.08 °C	1.43 mS/cm	0.11 mg/L	8.06 NTU	-64.0 mV	20.62 ft	150.00 ml/min
3/12/2024 12:29 PM	01:03:28	6.96 pH	13.14 °C	1.43 mS/cm	0.10 mg/L	7.08 NTU	-64.0 mV	20.62 ft	150.00 ml/min
3/12/2024 12:31 PM	01:05:27	6.97 pH	13.15 °C	1.43 mS/cm	0.11 mg/L	9.15 NTU	-64.2 mV	20.62 ft	150.00 ml/min
3/12/2024 12:33 PM	01:07:26	6.97 pH	13.14 °C	1.43 mS/cm	0.09 mg/L	7.42 NTU	-65.1 mV	20.62 ft	150.00 ml/min
3/12/2024 12:35 PM	01:09:25	6.97 pH	13.18 °C	1.43 mS/cm	0.09 mg/L	6.87 NTU	-65.9 mV	20.62 ft	150.00 ml/min
3/12/2024 12:37 PM	01:11:24	6.98 pH	13.25 °C	1.43 mS/cm	0.09 mg/L	6.82 NTU	-66.7 mV	20.62 ft	150.00 ml/min
3/12/2024 12:39 PM	01:13:23	6.98 pH	13.15 °C	1.43 mS/cm	0.09 mg/L	5.36 NTU	-67.1 mV	20.62 ft	150.00 ml/min
3/12/2024 12:41 PM	01:15:22	6.98 pH	13.33 °C	1.43 mS/cm	0.08 mg/L	2.26 NTU	-67.7 mV	20.62 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW18-GW-0324	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 3/12/2024 11:35:59 AM

Project: Neal South MW-53

Operator Name: Thao Larson

Location Name: MW-53 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 8.2 ft Total Depth: 26.1 ft Initial Depth to Water: 17.93 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 24.1 ft Pump Intake From TOC: 24.1 ft Estimated Total Volume Pumped: 1530 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.04 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1150

Weather Conditions:

Sunny 50°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 11:35 AM	00:00	7.40 pH	12.74 °C	0.59 mS/cm	6.54 mg/L	8.19 NTU	-6.7 mV	17.93 ft	150.00 ml/min
3/12/2024 11:38 AM	02:12	7.29 pH	11.98 °C	0.61 mS/cm	4.68 mg/L	11.35 NTU	7.4 mV	17.97 ft	150.00 ml/min
3/12/2024 11:39 AM	03:48	7.26 pH	11.78 °C	0.61 mS/cm	4.62 mg/L	1.01 NTU	15.5 mV	17.97 ft	150.00 ml/min
3/12/2024 11:41 AM	05:24	7.25 pH	11.73 °C	0.61 mS/cm	4.61 mg/L	1.65 NTU	20.7 mV	17.96 ft	150.00 ml/min
3/12/2024 11:42 AM	07:00	7.25 pH	11.70 °C	0.61 mS/cm	4.50 mg/L	1.92 NTU	23.8 mV	17.96 ft	150.00 ml/min
3/12/2024 11:44 AM	08:36	7.25 pH	11.57 °C	0.61 mS/cm	4.42 mg/L	4.04 NTU	26.3 mV	17.96 ft	150.00 ml/min
3/12/2024 11:46 AM	10:12	7.25 pH	11.57 °C	0.61 mS/cm	4.44 mg/L	1.65 NTU	28.4 mV	17.97 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW53-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/12/2024 12:09:09 PM

Project: Neal South MW-49

Operator Name: Thao Larson

Location Name: MW-49 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 11.1 ft Total Depth: 26.1 ft Initial Depth to Water: 19.71 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 24.1 ft Pump Intake From TOC: 24.1 ft Estimated Total Volume Pumped: 9120 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.04 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1315

Weather Conditions:

Sunny 50°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 12:09 PM	00:00	6.93 pH	16.54 °C	1.09 mS/cm	3.69 mg/L	191.84 NTU	-23.7 mV	19.71 ft	150.00 ml/min
3/12/2024 12:10 PM	01:36	7.03 pH	14.32 °C	1.15 mS/cm	0.59 mg/L	147.69 NTU	-44.3 mV	19.71 ft	150.00 ml/min
3/12/2024 12:12 PM	03:12	7.04 pH	13.82 °C	1.16 mS/cm	0.32 mg/L	140.49 NTU	-44.6 mV	19.71 ft	150.00 ml/min
3/12/2024 12:13 PM	04:48	7.04 pH	13.73 °C	1.16 mS/cm	0.23 mg/L	137.34 NTU	-43.0 mV	19.71 ft	150.00 ml/min
3/12/2024 12:15 PM	06:24	7.05 pH	13.75 °C	1.16 mS/cm	0.19 mg/L	123.64 NTU	-42.4 mV	19.75 ft	150.00 ml/min
3/12/2024 12:17 PM	08:00	7.05 pH	13.75 °C	1.16 mS/cm	0.15 mg/L	116.04 NTU	-42.7 mV	19.75 ft	150.00 ml/min
3/12/2024 12:18 PM	09:36	7.05 pH	13.75 °C	1.16 mS/cm	0.14 mg/L	92.96 NTU	-43.7 mV	19.75 ft	150.00 ml/min
3/12/2024 12:20 PM	11:12	7.05 pH	13.72 °C	1.16 mS/cm	0.13 mg/L	78.42 NTU	-44.8 mV	19.77 ft	150.00 ml/min
3/12/2024 12:21 PM	12:48	7.06 pH	13.76 °C	1.15 mS/cm	0.13 mg/L	71.27 NTU	-47.3 mV	19.77 ft	150.00 ml/min
3/12/2024 12:23 PM	14:24	7.06 pH	13.67 °C	1.15 mS/cm	0.12 mg/L	61.06 NTU	-48.3 mV	19.77 ft	150.00 ml/min
3/12/2024 12:25 PM	16:00	7.06 pH	13.65 °C	1.15 mS/cm	0.12 mg/L	59.64 NTU	-49.0 mV	19.77 ft	150.00 ml/min
3/12/2024 12:26 PM	17:36	7.06 pH	13.55 °C	1.15 mS/cm	0.12 mg/L	53.61 NTU	-49.2 mV	19.77 ft	150.00 ml/min

3/12/2024 12:28 PM	19:12	7.06 pH	13.59 °C	1.15 mS/cm	0.11 mg/L	48.03 NTU	-48.9 mV	19.77 ft	150.00 ml/min
3/12/2024 12:29 PM	20:48	7.07 pH	13.67 °C	1.15 mS/cm	0.11 mg/L	74.96 NTU	-49.6 mV	19.77 ft	150.00 ml/min
3/12/2024 12:31 PM	22:24	7.07 pH	13.57 °C	1.14 mS/cm	0.11 mg/L	61.93 NTU	-50.9 mV	19.77 ft	150.00 ml/min
3/12/2024 12:33 PM	24:00	7.07 pH	13.62 °C	1.14 mS/cm	0.11 mg/L	42.74 NTU	-52.0 mV	19.77 ft	150.00 ml/min
3/12/2024 12:34 PM	25:36	7.07 pH	13.65 °C	1.14 mS/cm	0.10 mg/L	32.35 NTU	-52.7 mV	19.77 ft	150.00 ml/min
3/12/2024 12:36 PM	27:12	7.08 pH	13.72 °C	1.13 mS/cm	0.10 mg/L	30.76 NTU	-53.7 mV	19.77 ft	150.00 ml/min
3/12/2024 12:37 PM	28:48	7.08 pH	13.82 °C	1.13 mS/cm	0.10 mg/L	33.37 NTU	-55.5 mV	19.77 ft	150.00 ml/min
3/12/2024 12:39 PM	30:24	7.09 pH	13.70 °C	1.12 mS/cm	0.10 mg/L	27.64 NTU	-57.7 mV	19.77 ft	150.00 ml/min
3/12/2024 12:41 PM	32:00	7.09 pH	13.68 °C	1.12 mS/cm	0.10 mg/L	23.94 NTU	-59.7 mV	19.77 ft	150.00 ml/min
3/12/2024 12:42 PM	33:36	7.10 pH	13.70 °C	1.12 mS/cm	0.10 mg/L	24.02 NTU	-61.9 mV	19.75 ft	150.00 ml/min
3/12/2024 12:44 PM	35:12	7.10 pH	13.76 °C	1.11 mS/cm	0.10 mg/L	18.49 NTU	-64.6 mV	19.75 ft	150.00 ml/min
3/12/2024 12:45 PM	36:48	7.10 pH	13.79 °C	1.11 mS/cm	0.10 mg/L	22.95 NTU	-66.2 mV	19.75 ft	150.00 ml/min
3/12/2024 12:47 PM	38:24	7.11 pH	13.89 °C	1.11 mS/cm	0.10 mg/L	18.80 NTU	-67.6 mV	19.75 ft	150.00 ml/min
3/12/2024 12:49 PM	40:00	7.11 pH	13.93 °C	1.11 mS/cm	0.10 mg/L	17.22 NTU	-69.3 mV	19.75 ft	150.00 ml/min
3/12/2024 12:50 PM	41:36	7.11 pH	13.89 °C	1.10 mS/cm	0.10 mg/L	15.18 NTU	-70.2 mV	19.75 ft	150.00 ml/min
3/12/2024 12:52 PM	43:12	7.12 pH	14.02 °C	1.10 mS/cm	0.10 mg/L	10.99 NTU	-71.2 mV	19.75 ft	150.00 ml/min
3/12/2024 12:53 PM	44:48	7.12 pH	14.00 °C	1.10 mS/cm	0.09 mg/L	10.86 NTU	-72.9 mV	19.75 ft	150.00 ml/min
3/12/2024 12:55 PM	46:24	7.12 pH	14.09 °C	1.10 mS/cm	0.10 mg/L	11.63 NTU	-74.6 mV	19.75 ft	150.00 ml/min
3/12/2024 12:57 PM	48:00	7.12 pH	14.06 °C	1.10 mS/cm	0.09 mg/L	11.15 NTU	-75.8 mV	19.75 ft	150.00 ml/min
3/12/2024 12:58 PM	49:36	7.13 pH	14.12 °C	1.09 mS/cm	0.09 mg/L	9.16 NTU	-76.0 mV	19.75 ft	150.00 ml/min
3/12/2024 1:00 PM	51:12	7.13 pH	14.22 °C	1.09 mS/cm	0.10 mg/L	8.56 NTU	-77.3 mV	19.75 ft	150.00 ml/min
3/12/2024 1:01 PM	52:48	7.13 pH	14.38 °C	1.08 mS/cm	0.09 mg/L	9.41 NTU	-78.5 mV	19.75 ft	150.00 ml/min
3/12/2024 1:03 PM	54:24	7.13 pH	14.35 °C	1.08 mS/cm	0.09 mg/L	6.66 NTU	-79.3 mV	19.75 ft	150.00 ml/min
3/12/2024 1:05 PM	56:00	7.13 pH	14.39 °C	1.08 mS/cm	0.09 mg/L	6.63 NTU	-80.2 mV	19.75 ft	150.00 ml/min
3/12/2024 1:06 PM	57:36	7.14 pH	14.30 °C	1.08 mS/cm	0.09 mg/L	9.83 NTU	-81.4 mV	19.75 ft	150.00 ml/min
3/12/2024 1:08 PM	59:12	7.14 pH	14.16 °C	1.07 mS/cm	0.09 mg/L	5.42 NTU	-82.1 mV	19.75 ft	150.00 ml/min
3/12/2024 1:09 PM	01:00:48	7.14 pH	14.29 °C	1.08 mS/cm	0.09 mg/L	3.99 NTU	-82.4 mV	19.75 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW49-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/12/2024 1:18:15 PM

Project: Neal South MW-17

Operator Name: Paige Richards

Location Name: MW-17 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 13.6 ft Total Depth: 28.6 ft Initial Depth to Water: 23.29 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 24.6 ft Pump Intake From TOC: 26.6 ft Estimated Total Volume Pumped: 2380 ml Flow Cell Volume: 130 ml Final Flow Rate: 100 ml/min Final Draw Down: 0.67 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 1050309
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Test Notes:

Sample time: 1443

Weather Conditions:

Sunny, 60 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 1:18 PM	00:00	7.34 pH	15.90 °C	1.29 mS/cm	8.91 mg/L	15.79 NTU	-3.9 mV	23.29 ft	100.00 ml/min
3/12/2024 1:20 PM	01:59	7.10 pH	14.38 °C	1.27 mS/cm	2.22 mg/L	40.23 NTU	-68.9 mV	23.29 ft	100.00 ml/min
3/12/2024 1:22 PM	03:58	7.04 pH	14.59 °C	1.26 mS/cm	0.75 mg/L	35.73 NTU	-74.8 mV	23.29 ft	100.00 ml/min
3/12/2024 1:24 PM	05:57	7.03 pH	14.53 °C	1.26 mS/cm	0.43 mg/L	28.54 NTU	-78.2 mV	23.29 ft	100.00 ml/min
3/12/2024 1:26 PM	07:56	7.03 pH	14.53 °C	1.26 mS/cm	0.34 mg/L	19.97 NTU	-80.4 mV	23.29 ft	100.00 ml/min
3/12/2024 1:28 PM	09:55	7.03 pH	14.41 °C	1.26 mS/cm	0.30 mg/L	20.87 NTU	-81.3 mV	23.29 ft	100.00 ml/min
3/12/2024 1:30 PM	11:54	7.03 pH	14.59 °C	1.26 mS/cm	0.28 mg/L	19.83 NTU	-80.4 mV	23.29 ft	100.00 ml/min
3/12/2024 1:32 PM	13:53	7.03 pH	14.59 °C	1.25 mS/cm	0.28 mg/L	20.88 NTU	-77.1 mV	23.29 ft	100.00 ml/min
3/12/2024 1:34 PM	15:52	7.04 pH	14.40 °C	1.24 mS/cm	0.29 mg/L	18.90 NTU	-70.7 mV	23.29 ft	100.00 ml/min
3/12/2024 1:36 PM	17:51	7.03 pH	14.59 °C	1.23 mS/cm	0.32 mg/L	16.65 NTU	-63.9 mV	23.29 ft	100.00 ml/min
3/12/2024 1:38 PM	19:50	7.04 pH	14.65 °C	1.22 mS/cm	0.38 mg/L	11.29 NTU	-57.8 mV	23.29 ft	100.00 ml/min

3/12/2024 1:40 PM	21:49	7.04 pH	14.52 °C	1.22 mS/cm	0.42 mg/L	4.67 NTU	-52.9 mV	23.29 ft	100.00 ml/min
3/12/2024 1:42 PM	23:48	7.04 pH	14.55 °C	1.22 mS/cm	0.43 mg/L	2.63 NTU	-50.5 mV	23.96 ft	100.00 ml/min

Samples

Sample ID:	Description:
MW17-GW-0324	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 3/12/2024 1:51:15 PM

Project: Neal South MW-52

Operator Name: Thao Larson

Location Name: MW-52 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 7.6 ft Total Depth: 25.6 ft Initial Depth to Water: 17.87 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 23.6 ft Pump Intake From TOC: 23.6 ft Estimated Total Volume Pumped: 11241.667 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.81 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1510

Weather Conditions:

Sunny 60°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 1:51 PM	00:00	6.92 pH	16.14 °C	1.45 mS/cm	3.28 mg/L	423.40 NTU	12.8 mV	17.87 ft	200.00 ml/min
3/12/2024 1:52 PM	01:35	6.92 pH	14.28 °C	1.51 mS/cm	2.20 mg/L	397.28 NTU	11.8 mV	17.87 ft	200.00 ml/min
3/12/2024 1:54 PM	03:10	6.94 pH	14.11 °C	1.51 mS/cm	2.09 mg/L	417.59 NTU	7.2 mV	17.87 ft	200.00 ml/min
3/12/2024 1:56 PM	04:45	6.94 pH	13.80 °C	1.53 mS/cm	2.01 mg/L	385.74 NTU	3.9 mV	17.87 ft	200.00 ml/min
3/12/2024 1:57 PM	06:20	6.91 pH	13.91 °C	1.53 mS/cm	1.86 mg/L	374.36 NTU	2.2 mV	17.87 ft	200.00 ml/min
3/12/2024 1:59 PM	07:55	6.88 pH	13.91 °C	1.53 mS/cm	1.73 mg/L	304.98 NTU	-7.1 mV	17.87 ft	200.00 ml/min
3/12/2024 2:00 PM	09:30	6.86 pH	13.84 °C	1.53 mS/cm	1.61 mg/L	273.50 NTU	-13.5 mV	17.87 ft	200.00 ml/min
3/12/2024 2:02 PM	11:05	6.85 pH	13.70 °C	1.54 mS/cm	1.49 mg/L	202.43 NTU	-18.5 mV	18.60 ft	150.00 ml/min
3/12/2024 2:03 PM	12:40	6.86 pH	13.81 °C	1.54 mS/cm	1.39 mg/L	188.62 NTU	-21.8 mV	18.60 ft	150.00 ml/min
3/12/2024 2:05 PM	14:15	6.86 pH	13.92 °C	1.54 mS/cm	1.25 mg/L	146.97 NTU	-25.3 mV	18.60 ft	150.00 ml/min
3/12/2024 2:07 PM	15:50	6.87 pH	13.81 °C	1.54 mS/cm	1.18 mg/L	166.07 NTU	-27.4 mV	18.60 ft	150.00 ml/min
3/12/2024 2:08 PM	17:25	6.89 pH	13.77 °C	1.54 mS/cm	3.64 mg/L	122.45 NTU	-30.6 mV	18.65 ft	150.00 ml/min

3/12/2024 2:10 PM	19:00	6.87 pH	13.99 °C	1.54 mS/cm	1.20 mg/L	97.35 NTU	-30.9 mV	18.65 ft	150.00 ml/min
3/12/2024 2:11 PM	20:35	6.88 pH	14.26 °C	1.54 mS/cm	1.02 mg/L	90.61 NTU	-30.3 mV	18.65 ft	150.00 ml/min
3/12/2024 2:13 PM	22:10	6.89 pH	14.26 °C	1.54 mS/cm	0.97 mg/L	79.50 NTU	-32.6 mV	18.66 ft	150.00 ml/min
3/12/2024 2:15 PM	23:45	6.89 pH	14.33 °C	1.54 mS/cm	0.91 mg/L	59.05 NTU	-33.7 mV	18.66 ft	150.00 ml/min
3/12/2024 2:16 PM	25:20	6.90 pH	14.34 °C	1.53 mS/cm	0.86 mg/L	53.85 NTU	-34.1 mV	18.66 ft	150.00 ml/min
3/12/2024 2:18 PM	26:55	6.91 pH	14.28 °C	1.54 mS/cm	0.85 mg/L	50.19 NTU	-34.7 mV	18.66 ft	150.00 ml/min
3/12/2024 2:19 PM	28:30	6.92 pH	14.21 °C	1.54 mS/cm	0.82 mg/L	48.93 NTU	-37.4 mV	18.65 ft	150.00 ml/min
3/12/2024 2:21 PM	30:05	6.92 pH	14.07 °C	1.53 mS/cm	0.79 mg/L	36.30 NTU	-37.6 mV	18.65 ft	150.00 ml/min
3/12/2024 2:22 PM	31:40	6.93 pH	14.30 °C	1.53 mS/cm	0.74 mg/L	36.88 NTU	-39.0 mV	18.65 ft	150.00 ml/min
3/12/2024 2:24 PM	33:15	6.94 pH	14.31 °C	1.54 mS/cm	0.69 mg/L	31.79 NTU	-40.5 mV	18.65 ft	150.00 ml/min
3/12/2024 2:26 PM	34:50	6.94 pH	14.63 °C	1.53 mS/cm	0.65 mg/L	27.27 NTU	-41.1 mV	18.65 ft	150.00 ml/min
3/12/2024 2:27 PM	36:25	6.95 pH	14.52 °C	1.54 mS/cm	0.63 mg/L	29.97 NTU	-42.7 mV	18.65 ft	150.00 ml/min
3/12/2024 2:29 PM	38:00	6.95 pH	14.53 °C	1.53 mS/cm	0.59 mg/L	28.55 NTU	-42.8 mV	18.65 ft	150.00 ml/min
3/12/2024 2:30 PM	39:35	6.96 pH	14.44 °C	1.53 mS/cm	0.60 mg/L	28.24 NTU	-44.6 mV	18.65 ft	150.00 ml/min
3/12/2024 2:32 PM	41:10	6.96 pH	14.50 °C	1.54 mS/cm	0.58 mg/L	22.74 NTU	-46.5 mV	18.65 ft	150.00 ml/min
3/12/2024 2:34 PM	42:45	6.96 pH	14.48 °C	1.53 mS/cm	0.56 mg/L	19.82 NTU	-46.3 mV	18.65 ft	150.00 ml/min
3/12/2024 2:35 PM	44:20	6.97 pH	14.56 °C	1.53 mS/cm	0.53 mg/L	19.73 NTU	-46.4 mV	18.65 ft	150.00 ml/min
3/12/2024 2:37 PM	45:55	6.97 pH	14.49 °C	1.53 mS/cm	0.50 mg/L	16.11 NTU	-47.0 mV	18.65 ft	150.00 ml/min
3/12/2024 2:38 PM	47:30	6.97 pH	14.33 °C	1.53 mS/cm	0.47 mg/L	14.54 NTU	-46.3 mV	18.65 ft	150.00 ml/min
3/12/2024 2:40 PM	49:05	6.98 pH	14.60 °C	1.53 mS/cm	0.46 mg/L	18.09 NTU	-48.2 mV	18.65 ft	150.00 ml/min
3/12/2024 2:41 PM	50:40	6.98 pH	14.52 °C	1.53 mS/cm	0.46 mg/L	16.73 NTU	-49.2 mV	18.65 ft	150.00 ml/min
3/12/2024 2:43 PM	52:15	6.98 pH	14.78 °C	1.53 mS/cm	0.47 mg/L	17.51 NTU	-49.4 mV	18.65 ft	150.00 ml/min
3/12/2024 2:45 PM	53:50	7.00 pH	13.47 °C	1.53 mS/cm	2.21 mg/L	21.24 NTU	-49.6 mV	18.65 ft	150.00 ml/min
3/12/2024 2:46 PM	55:25	6.99 pH	13.93 °C	1.54 mS/cm	0.50 mg/L	16.11 NTU	-49.0 mV	18.65 ft	150.00 ml/min
3/12/2024 2:48 PM	57:00	6.98 pH	14.16 °C	1.53 mS/cm	0.43 mg/L	14.61 NTU	-49.4 mV	18.65 ft	150.00 ml/min
3/12/2024 2:49 PM	58:35	6.98 pH	14.01 °C	1.53 mS/cm	0.41 mg/L	13.45 NTU	-48.0 mV	18.68 ft	150.00 ml/min
3/12/2024 2:51 PM	01:00:10	6.98 pH	14.14 °C	1.54 mS/cm	0.42 mg/L	12.59 NTU	-46.8 mV	18.68 ft	150.00 ml/min
3/12/2024 2:53 PM	01:01:45	6.98 pH	14.26 °C	1.54 mS/cm	0.41 mg/L	10.77 NTU	-47.9 mV	18.68 ft	150.00 ml/min
3/12/2024 2:54 PM	01:03:20	6.98 pH	14.27 °C	1.53 mS/cm	0.39 mg/L	10.80 NTU	-49.3 mV	18.68 ft	150.00 ml/min

3/12/2024 2:56 PM	01:04:55	6.98 pH	14.20 °C	1.54 mS/cm	0.37 mg/L	8.05 NTU	-46.4 mV	18.68 ft	150.00 ml/min
3/12/2024 2:57 PM	01:06:30	6.98 pH	14.49 °C	1.53 mS/cm	0.37 mg/L	8.30 NTU	-47.6 mV	18.68 ft	150.00 ml/min
3/12/2024 2:59 PM	01:08:05	6.98 pH	14.40 °C	1.53 mS/cm	0.36 mg/L	9.01 NTU	-48.1 mV	18.68 ft	150.00 ml/min
3/12/2024 3:00 PM	01:09:40	6.99 pH	14.18 °C	1.53 mS/cm	0.34 mg/L	5.23 NTU	-48.7 mV	18.68 ft	150.00 ml/min
3/12/2024 3:02 PM	01:11:15	6.99 pH	14.14 °C	1.53 mS/cm	0.33 mg/L	5.26 NTU	-46.6 mV	18.68 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW52-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/12/2024 2:50:10 PM

Project: Neal South MW-2

Operator Name: Paige Richards

Location Name: MW-2 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 15.3 ft Total Depth: 30.3 ft Initial Depth to Water: 23.18 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 26 ft Pump Intake From TOC: 28 ft Estimated Total Volume Pumped: 10500 ml Flow Cell Volume: 130 ml Final Flow Rate: 350 ml/min Final Draw Down: 0.05 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 1050309
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Test Notes:

Sample time: 1545

Weather Conditions:

Sunny, 65 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 2:50 PM	00:00	6.76 pH	16.18 °C	1.35 mS/cm	6.02 mg/L	68.57 NTU	73.1 mV	23.18 ft	350.00 ml/min
3/12/2024 2:52 PM	02:00	6.50 pH	13.25 °C	1.44 mS/cm	0.82 mg/L	56.33 NTU	64.3 mV	23.18 ft	350.00 ml/min
3/12/2024 2:54 PM	04:00	6.49 pH	12.93 °C	1.44 mS/cm	0.38 mg/L	54.44 NTU	46.9 mV	23.18 ft	350.00 ml/min
3/12/2024 2:56 PM	06:00	6.54 pH	12.87 °C	1.44 mS/cm	0.26 mg/L	30.77 NTU	23.0 mV	23.18 ft	350.00 ml/min
3/12/2024 2:58 PM	08:00	6.56 pH	12.78 °C	1.44 mS/cm	0.31 mg/L	17.73 NTU	10.4 mV	23.18 ft	350.00 ml/min
3/12/2024 3:00 PM	10:00	6.61 pH	12.72 °C	1.43 mS/cm	0.22 mg/L	12.89 NTU	1.2 mV	23.18 ft	350.00 ml/min
3/12/2024 3:02 PM	12:00	6.64 pH	12.73 °C	1.43 mS/cm	0.24 mg/L	7.60 NTU	-7.3 mV	23.18 ft	350.00 ml/min
3/12/2024 3:04 PM	14:00	6.66 pH	12.73 °C	1.43 mS/cm	0.22 mg/L	5.65 NTU	-11.7 mV	23.18 ft	350.00 ml/min
3/12/2024 3:06 PM	16:00	6.67 pH	12.81 °C	1.43 mS/cm	0.23 mg/L	9.91 NTU	-15.1 mV	23.18 ft	350.00 ml/min
3/12/2024 3:08 PM	18:00	6.69 pH	12.72 °C	1.43 mS/cm	0.18 mg/L	7.39 NTU	-18.7 mV	23.18 ft	350.00 ml/min
3/12/2024 3:10 PM	20:00	6.71 pH	12.76 °C	1.44 mS/cm	0.14 mg/L	6.31 NTU	-22.1 mV	23.18 ft	350.00 ml/min

3/12/2024 3:12 PM	22:00	6.72 pH	12.68 °C	1.43 mS/cm	0.18 mg/L	18.22 NTU	-24.5 mV	23.20 ft	350.00 ml/min
3/12/2024 3:14 PM	24:00	6.73 pH	12.76 °C	1.43 mS/cm	0.13 mg/L	6.53 NTU	-27.2 mV	23.20 ft	350.00 ml/min
3/12/2024 3:16 PM	26:00	6.73 pH	12.69 °C	1.43 mS/cm	0.15 mg/L	8.55 NTU	-29.6 mV	23.20 ft	350.00 ml/min
3/12/2024 3:18 PM	28:00	6.75 pH	12.78 °C	1.43 mS/cm	0.16 mg/L	5.21 NTU	-32.0 mV	23.20 ft	350.00 ml/min
3/12/2024 3:20 PM	30:00	6.75 pH	12.72 °C	1.43 mS/cm	0.19 mg/L	2.70 NTU	-32.7 mV	23.23 ft	350.00 ml/min

Samples

Sample ID:	Description:
MW02-GW-0324	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1
DP01-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/12/2024 3:49:23 PM

Project: Neal South MW-43

Operator Name: Thao Larson

Location Name: MW-43 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 16.4 ft Total Depth: 31.4 ft Initial Depth to Water: 24.65 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 29.4 ft Pump Intake From TOC: 29.4 ft Estimated Total Volume Pumped: 7000 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.05 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1640

Weather Conditions:

Sunny 65°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 3:49 PM	00:00	7.11 pH	15.71 °C	1.78 mS/cm	3.46 mg/L	258.95 NTU	-98.6 mV	24.65 ft	150.00 ml/min
3/12/2024 3:51 PM	01:52	7.23 pH	14.52 °C	1.80 mS/cm	0.23 mg/L	225.59 NTU	-131.1 mV	24.70 ft	150.00 ml/min
3/12/2024 3:53 PM	03:44	7.24 pH	14.15 °C	1.80 mS/cm	0.16 mg/L	167.31 NTU	-134.5 mV	24.70 ft	150.00 ml/min
3/12/2024 3:54 PM	05:36	7.22 pH	14.20 °C	1.80 mS/cm	0.13 mg/L	38.30 NTU	-135.8 mV	24.70 ft	150.00 ml/min
3/12/2024 3:56 PM	07:28	7.20 pH	13.96 °C	1.80 mS/cm	0.10 mg/L	60.18 NTU	-134.9 mV	24.70 ft	150.00 ml/min
3/12/2024 3:58 PM	09:20	7.19 pH	14.08 °C	1.80 mS/cm	1.03 mg/L	167.32 NTU	-126.8 mV	24.70 ft	150.00 ml/min
3/12/2024 4:00 PM	11:12	7.18 pH	14.14 °C	1.79 mS/cm	0.20 mg/L	25.67 NTU	-131.3 mV	24.70 ft	150.00 ml/min
3/12/2024 4:02 PM	13:04	7.19 pH	14.01 °C	1.78 mS/cm	0.15 mg/L	26.92 NTU	-132.9 mV	24.70 ft	150.00 ml/min
3/12/2024 4:04 PM	14:56	7.19 pH	13.79 °C	1.78 mS/cm	0.14 mg/L	22.95 NTU	-134.1 mV	24.70 ft	150.00 ml/min
3/12/2024 4:06 PM	16:48	7.19 pH	13.96 °C	1.78 mS/cm	0.12 mg/L	17.04 NTU	-134.6 mV	24.70 ft	150.00 ml/min
3/12/2024 4:08 PM	18:40	7.20 pH	13.78 °C	1.77 mS/cm	0.10 mg/L	19.03 NTU	-135.2 mV	24.70 ft	150.00 ml/min
3/12/2024 4:09 PM	20:32	7.20 pH	13.92 °C	1.77 mS/cm	0.09 mg/L	18.92 NTU	-135.9 mV	24.70 ft	150.00 ml/min

3/12/2024 4:11 PM	22:24	7.21 pH	13.88 °C	1.77 mS/cm	0.09 mg/L	18.85 NTU	-136.5 mV	24.70 ft	150.00 ml/min
3/12/2024 4:13 PM	24:16	7.21 pH	13.83 °C	1.77 mS/cm	0.08 mg/L	18.22 NTU	-136.9 mV	24.70 ft	150.00 ml/min
3/12/2024 4:15 PM	26:08	7.22 pH	13.75 °C	1.50 mS/cm	1.04 mg/L	49.41 NTU	-127.5 mV	24.70 ft	150.00 ml/min
3/12/2024 4:17 PM	28:00	7.21 pH	13.76 °C	1.40 mS/cm	0.24 mg/L	21.48 NTU	-130.4 mV	24.70 ft	150.00 ml/min
3/12/2024 4:19 PM	29:52	7.22 pH	13.88 °C	1.61 mS/cm	0.16 mg/L	25.32 NTU	-132.0 mV	24.70 ft	150.00 ml/min
3/12/2024 4:21 PM	31:44	7.22 pH	14.04 °C	1.52 mS/cm	0.15 mg/L	14.72 NTU	-132.8 mV	24.70 ft	150.00 ml/min
3/12/2024 4:22 PM	33:36	7.22 pH	13.81 °C	1.41 mS/cm	0.13 mg/L	13.75 NTU	-133.5 mV	24.70 ft	150.00 ml/min
3/12/2024 4:24 PM	35:28	7.23 pH	13.75 °C	1.41 mS/cm	0.10 mg/L	8.63 NTU	-134.2 mV	24.70 ft	150.00 ml/min
3/12/2024 4:26 PM	37:20	7.23 pH	13.85 °C	1.40 mS/cm	0.09 mg/L	8.91 NTU	-135.1 mV	24.70 ft	150.00 ml/min
3/12/2024 4:28 PM	39:12	7.23 pH	13.85 °C	1.40 mS/cm	0.08 mg/L	7.56 NTU	-135.7 mV	24.70 ft	150.00 ml/min
3/12/2024 4:30 PM	41:04	7.24 pH	13.80 °C	1.40 mS/cm	0.08 mg/L	8.94 NTU	-136.2 mV	24.70 ft	150.00 ml/min
3/12/2024 4:32 PM	42:56	7.24 pH	14.08 °C	1.58 mS/cm	0.08 mg/L	5.56 NTU	-136.8 mV	24.70 ft	150.00 ml/min
3/12/2024 4:34 PM	44:48	7.24 pH	14.11 °C	1.57 mS/cm	0.07 mg/L	5.02 NTU	-137.2 mV	24.70 ft	150.00 ml/min
3/12/2024 4:36 PM	46:40	7.25 pH	13.97 °C	1.57 mS/cm	0.07 mg/L	4.70 NTU	-137.5 mV	24.70 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW43-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/12/2024 3:57:47 PM

Project: Neal South MW-13

Operator Name: Paige Richards

Location Name: MW-13 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 25.1 ft Total Depth: 35.1 ft Initial Depth to Water: 30.21 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 30.8 ft Pump Intake From TOC: 32.8 ft Estimated Total Volume Pumped: 1653.333 ml Flow Cell Volume: 130 ml Final Flow Rate: 100 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 1050309
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Test Notes:

Sample time: 1705

Weather Conditions:

Sunny, 67 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 3:57 PM	00:00	6.82 pH	18.18 °C	1.75 mS/cm	5.33 mg/L	12.63 NTU	47.6 mV	30.21 ft	100.00 ml/min
3/12/2024 3:59 PM	02:04	6.82 pH	16.59 °C	1.97 mS/cm	1.48 mg/L	26.53 NTU	46.6 mV	30.21 ft	100.00 ml/min
3/12/2024 4:01 PM	04:08	6.81 pH	16.29 °C	1.99 mS/cm	0.70 mg/L	11.31 NTU	46.0 mV	30.21 ft	100.00 ml/min
3/12/2024 4:03 PM	06:12	6.80 pH	15.95 °C	1.99 mS/cm	0.50 mg/L	6.41 NTU	44.6 mV	30.21 ft	100.00 ml/min
3/12/2024 4:06 PM	08:16	6.80 pH	15.93 °C	1.99 mS/cm	0.44 mg/L	8.32 NTU	42.8 mV	30.21 ft	100.00 ml/min
3/12/2024 4:08 PM	10:20	6.80 pH	16.23 °C	1.98 mS/cm	0.41 mg/L	3.21 NTU	40.2 mV	30.21 ft	100.00 ml/min
3/12/2024 4:10 PM	12:24	6.81 pH	16.01 °C	1.97 mS/cm	0.40 mg/L	3.47 NTU	38.1 mV	30.21 ft	100.00 ml/min
3/12/2024 4:12 PM	14:28	6.82 pH	16.02 °C	1.96 mS/cm	0.39 mg/L	2.69 NTU	35.8 mV	30.21 ft	100.00 ml/min
3/12/2024 4:14 PM	16:32	6.82 pH	15.79 °C	1.97 mS/cm	0.39 mg/L	2.07 NTU	32.4 mV	30.21 ft	100.00 ml/min

Samples

Sample ID:	Description:
MW13-GW-0324	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 3/12/2024 5:06:51 PM

Project: Neal South MW-28

Operator Name: Thao Larson

Location Name: MW-28 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 15.1 ft Total Depth: 30.1 ft Initial Depth to Water: 22.79 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 28.1 ft Pump Intake From TOC: 28.1 ft Estimated Total Volume Pumped: 9540 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.22 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1815

Weather Conditions:

Sunny 65°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 5:06 PM	00:00	6.92 pH	16.33 °C	1.00 mS/cm	3.47 mg/L	433.11 NTU	-45.2 mV	22.79 ft	150.00 ml/min
3/12/2024 5:08 PM	01:48	6.90 pH	14.22 °C	0.96 mS/cm	0.51 mg/L	341.21 NTU	-44.3 mV	22.79 ft	150.00 ml/min
3/12/2024 5:10 PM	03:36	6.90 pH	13.83 °C	0.93 mS/cm	0.33 mg/L	261.42 NTU	-45.0 mV	22.79 ft	150.00 ml/min
3/12/2024 5:12 PM	05:24	6.90 pH	13.56 °C	0.93 mS/cm	0.24 mg/L	219.60 NTU	-45.8 mV	22.99 ft	150.00 ml/min
3/12/2024 5:14 PM	07:12	6.89 pH	13.45 °C	0.93 mS/cm	0.20 mg/L	185.14 NTU	-45.8 mV	22.99 ft	150.00 ml/min
3/12/2024 5:15 PM	09:00	6.88 pH	13.39 °C	0.93 mS/cm	0.18 mg/L	146.70 NTU	-45.8 mV	22.99 ft	150.00 ml/min
3/12/2024 5:17 PM	10:48	6.88 pH	13.26 °C	0.92 mS/cm	0.15 mg/L	134.19 NTU	-45.5 mV	23.01 ft	150.00 ml/min
3/12/2024 5:19 PM	12:36	6.88 pH	13.27 °C	0.91 mS/cm	0.14 mg/L	116.77 NTU	-45.3 mV	23.01 ft	150.00 ml/min
3/12/2024 5:21 PM	14:24	6.87 pH	13.25 °C	0.92 mS/cm	0.14 mg/L	95.59 NTU	-45.3 mV	23.01 ft	150.00 ml/min
3/12/2024 5:23 PM	16:12	6.88 pH	13.20 °C	0.91 mS/cm	0.13 mg/L	81.15 NTU	-46.4 mV	23.01 ft	150.00 ml/min
3/12/2024 5:24 PM	18:00	6.89 pH	13.18 °C	0.89 mS/cm	0.12 mg/L	67.24 NTU	-47.8 mV	23.01 ft	150.00 ml/min
3/12/2024 5:26 PM	19:48	6.89 pH	13.24 °C	0.90 mS/cm	0.11 mg/L	58.40 NTU	-49.0 mV	23.01 ft	150.00 ml/min

3/12/2024 5:28 PM	21:36	6.89 pH	13.28 °C	0.89 mS/cm	0.11 mg/L	47.59 NTU	-48.8 mV	23.01 ft	150.00 ml/min
3/12/2024 5:30 PM	23:24	6.90 pH	13.22 °C	0.90 mS/cm	0.11 mg/L	47.46 NTU	-49.4 mV	23.01 ft	150.00 ml/min
3/12/2024 5:32 PM	25:12	6.90 pH	13.19 °C	0.90 mS/cm	0.10 mg/L	36.01 NTU	-50.6 mV	23.01 ft	150.00 ml/min
3/12/2024 5:33 PM	27:00	6.90 pH	13.28 °C	0.89 mS/cm	0.10 mg/L	31.92 NTU	-50.5 mV	23.01 ft	150.00 ml/min
3/12/2024 5:35 PM	28:48	6.90 pH	13.14 °C	1.04 mS/cm	0.10 mg/L	22.65 NTU	-51.2 mV	23.01 ft	150.00 ml/min
3/12/2024 5:37 PM	30:36	6.90 pH	13.21 °C	1.04 mS/cm	0.09 mg/L	24.07 NTU	-51.0 mV	23.01 ft	150.00 ml/min
3/12/2024 5:39 PM	32:24	6.90 pH	13.17 °C	1.04 mS/cm	0.09 mg/L	24.92 NTU	-51.4 mV	23.01 ft	150.00 ml/min
3/12/2024 5:41 PM	34:12	6.91 pH	13.15 °C	1.04 mS/cm	0.09 mg/L	26.40 NTU	-51.4 mV	23.01 ft	150.00 ml/min
3/12/2024 5:42 PM	36:00	6.91 pH	13.19 °C	1.04 mS/cm	0.08 mg/L	17.90 NTU	-51.6 mV	23.01 ft	150.00 ml/min
3/12/2024 5:44 PM	37:48	6.92 pH	13.17 °C	1.04 mS/cm	0.08 mg/L	17.39 NTU	-52.7 mV	23.01 ft	150.00 ml/min
3/12/2024 5:46 PM	39:36	6.92 pH	13.04 °C	1.04 mS/cm	0.08 mg/L	18.83 NTU	-54.2 mV	23.01 ft	150.00 ml/min
3/12/2024 5:48 PM	41:24	6.92 pH	13.05 °C	1.04 mS/cm	0.08 mg/L	13.81 NTU	-53.9 mV	23.01 ft	150.00 ml/min
3/12/2024 5:50 PM	43:12	6.92 pH	13.01 °C	1.04 mS/cm	0.08 mg/L	14.36 NTU	-53.5 mV	23.01 ft	150.00 ml/min
3/12/2024 5:51 PM	45:00	6.92 pH	13.05 °C	1.04 mS/cm	0.08 mg/L	14.03 NTU	-54.7 mV	23.01 ft	150.00 ml/min
3/12/2024 5:53 PM	46:48	6.93 pH	13.05 °C	1.04 mS/cm	0.08 mg/L	10.78 NTU	-55.4 mV	23.01 ft	150.00 ml/min
3/12/2024 5:55 PM	48:36	6.92 pH	13.01 °C	1.04 mS/cm	0.08 mg/L	7.99 NTU	-54.1 mV	23.01 ft	150.00 ml/min
3/12/2024 5:57 PM	50:24	6.92 pH	12.99 °C	1.04 mS/cm	0.07 mg/L	7.92 NTU	-53.1 mV	23.01 ft	150.00 ml/min
3/12/2024 5:59 PM	52:12	6.92 pH	13.08 °C	1.04 mS/cm	0.07 mg/L	14.57 NTU	-53.1 mV	23.01 ft	150.00 ml/min
3/12/2024 6:00 PM	54:00	6.93 pH	12.91 °C	1.20 mS/cm	0.12 mg/L	13.43 NTU	-53.2 mV	23.01 ft	150.00 ml/min
3/12/2024 6:03 PM	56:24	6.92 pH	12.76 °C	1.20 mS/cm	0.38 mg/L	10.16 NTU	-50.8 mV	23.01 ft	150.00 ml/min
3/12/2024 6:05 PM	58:12	6.92 pH	12.73 °C	1.20 mS/cm	0.15 mg/L	9.45 NTU	-50.4 mV	23.01 ft	150.00 ml/min
3/12/2024 6:06 PM	01:00:00	6.92 pH	12.70 °C	1.20 mS/cm	0.11 mg/L	8.72 NTU	-50.5 mV	23.01 ft	150.00 ml/min
3/12/2024 6:08 PM	01:01:48	6.93 pH	12.68 °C	1.20 mS/cm	0.09 mg/L	6.63 NTU	-50.7 mV	23.01 ft	150.00 ml/min
3/12/2024 6:10 PM	01:03:36	6.92 pH	12.78 °C	1.20 mS/cm	0.09 mg/L	6.96 NTU	-50.6 mV	23.01 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW28-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/12/2024 5:09:35 PM

Project: Neal South MW-12

Operator Name: Paige Richards

Location Name: MW-12 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 25.8 ft Total Depth: 35.8 ft Initial Depth to Water: 32 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 31 ft Pump Intake From TOC: 33 ft Estimated Total Volume Pumped: 1550 ml Flow Cell Volume: 130 ml Final Flow Rate: 125 ml/min Final Draw Down: 0.02 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 1050309
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Test Notes:

Sample time: 1800

Weather Conditions:

Sunny, 68 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/12/2024 5:09 PM	00:00	6.97 pH	18.54 °C	1.82 mS/cm	5.91 mg/L	1.54 NTU	85.3 mV	32.00 ft	125.00 ml/min
3/12/2024 5:11 PM	02:04	6.69 pH	15.87 °C	1.90 mS/cm	1.28 mg/L	1.32 NTU	70.2 mV	32.00 ft	125.00 ml/min
3/12/2024 5:13 PM	04:08	6.62 pH	15.47 °C	1.90 mS/cm	0.61 mg/L	1.01 NTU	68.7 mV	32.00 ft	125.00 ml/min
3/12/2024 5:15 PM	06:12	6.60 pH	15.48 °C	1.90 mS/cm	0.49 mg/L	0.86 NTU	66.8 mV	32.00 ft	125.00 ml/min
3/12/2024 5:17 PM	08:16	6.60 pH	15.06 °C	1.91 mS/cm	0.45 mg/L	0.26 NTU	65.2 mV	32.00 ft	125.00 ml/min
3/12/2024 5:19 PM	10:20	6.60 pH	14.91 °C	1.91 mS/cm	0.43 mg/L	0.00 NTU	63.8 mV	32.00 ft	125.00 ml/min
3/12/2024 5:21 PM	12:24	6.60 pH	15.04 °C	1.90 mS/cm	0.41 mg/L	0.00 NTU	62.6 mV	32.02 ft	125.00 ml/min

Samples

Sample ID:	Description:
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MW12-GW-0324

1L plastic w/ nitric x2
1L plastic unpreserved x1
250mL plastic w/ nitric x1
250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 3/13/2024 8:11:55 AM

Project: Neal South MW-8

Operator Name: Thao Larson

Location Name: MW-8 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 9.7 ft Total Depth: 24.7 ft Initial Depth to Water: 19.82 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 23.3 ft Pump Intake From TOC: 25.3 ft Estimated Total Volume Pumped: 1032.5 ml Flow Cell Volume: 130 ml Final Flow Rate: 75 ml/min Final Draw Down: 0.03 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 0900

Weather Conditions:

Sunny 35°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/13/2024 8:11 AM	00:00	7.09 pH	9.36 °C	1.81 mS/cm	3.14 mg/L	28.30 NTU	155.1 mV	19.82 ft	75.00 ml/min
3/13/2024 8:13 AM	01:58	7.05 pH	9.65 °C	1.85 mS/cm	1.45 mg/L	6.67 NTU	147.6 mV	19.82 ft	75.00 ml/min
3/13/2024 8:15 AM	03:56	7.05 pH	9.77 °C	1.86 mS/cm	0.97 mg/L	2.00 NTU	137.3 mV	19.85 ft	75.00 ml/min
3/13/2024 8:17 AM	05:54	7.05 pH	9.78 °C	1.86 mS/cm	0.74 mg/L	32.09 NTU	132.1 mV	19.85 ft	75.00 ml/min
3/13/2024 8:19 AM	07:52	7.04 pH	9.81 °C	1.86 mS/cm	0.61 mg/L	11.34 NTU	121.2 mV	19.85 ft	75.00 ml/min
3/13/2024 8:21 AM	09:50	7.06 pH	9.73 °C	1.86 mS/cm	0.51 mg/L	2.10 NTU	116.3 mV	19.85 ft	75.00 ml/min
3/13/2024 8:23 AM	11:48	7.06 pH	9.69 °C	1.86 mS/cm	0.43 mg/L	0.74 NTU	110.6 mV	19.85 ft	75.00 ml/min
3/13/2024 8:25 AM	13:46	7.05 pH	9.72 °C	1.86 mS/cm	0.39 mg/L	0.00 NTU	107.0 mV	19.85 ft	75.00 ml/min

Samples

Sample ID:	Description:
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MW08-GW-0324

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 3/13/2024 8:52:18 AM

Project: Neal South MW-21

Operator Name: Paige Richards

Location Name: MW-21 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 8.2 ft Total Depth: 23.2 ft Initial Depth to Water: 18.57 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 19.2 ft Pump Intake From TOC: 21.2 ft Estimated Total Volume Pumped: 5366.667 ml Flow Cell Volume: 130 ml Final Flow Rate: 100 ml/min Final Draw Down: 0.6 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 1050309
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Test Notes:

Sample time: 1100

Weather Conditions:

Sunny, 40 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/13/2024 8:52 AM	00:00	6.87 pH	10.16 °C	1.01 mS/cm	7.47 mg/L	28.96 NTU	236.4 mV	18.57 ft	100.00 ml/min
3/13/2024 8:54 AM	01:55	6.91 pH	10.71 °C	1.05 mS/cm	2.96 mg/L	61.47 NTU	-4.7 mV	18.57 ft	100.00 ml/min
3/13/2024 8:56 AM	03:50	6.91 pH	10.60 °C	1.06 mS/cm	1.17 mg/L	26.47 NTU	-36.6 mV	18.57 ft	100.00 ml/min
3/13/2024 8:58 AM	05:45	6.91 pH	10.50 °C	1.06 mS/cm	0.69 mg/L	20.73 NTU	-36.6 mV	18.57 ft	100.00 ml/min
3/13/2024 8:59 AM	07:40	6.91 pH	10.59 °C	1.06 mS/cm	0.53 mg/L	23.36 NTU	-35.9 mV	18.57 ft	100.00 ml/min
3/13/2024 9:01 AM	09:35	6.91 pH	10.65 °C	1.06 mS/cm	0.45 mg/L	25.11 NTU	-38.3 mV	18.57 ft	100.00 ml/min
3/13/2024 9:03 AM	11:30	6.91 pH	10.62 °C	1.06 mS/cm	0.42 mg/L	24.88 NTU	-41.3 mV	18.57 ft	100.00 ml/min
3/13/2024 9:05 AM	13:25	6.91 pH	10.70 °C	1.06 mS/cm	0.41 mg/L	22.49 NTU	-38.8 mV	18.94 ft	100.00 ml/min
3/13/2024 9:07 AM	15:20	6.91 pH	10.84 °C	1.06 mS/cm	0.40 mg/L	20.82 NTU	-39.7 mV	18.94 ft	100.00 ml/min
3/13/2024 9:09 AM	17:15	6.91 pH	10.84 °C	1.06 mS/cm	0.40 mg/L	16.60 NTU	-38.6 mV	18.94 ft	100.00 ml/min
3/13/2024 9:11 AM	19:10	6.91 pH	10.95 °C	1.06 mS/cm	0.39 mg/L	19.01 NTU	-38.7 mV	18.94 ft	100.00 ml/min

3/13/2024 9:13 AM	21:05	6.92 pH	10.97 °C	1.06 mS/cm	0.39 mg/L	18.88 NTU	-38.0 mV	18.94 ft	100.00 ml/min
3/13/2024 9:15 AM	23:00	6.92 pH	11.00 °C	1.06 mS/cm	0.38 mg/L	14.19 NTU	-39.9 mV	18.94 ft	100.00 ml/min
3/13/2024 9:17 AM	24:55	6.93 pH	11.07 °C	1.06 mS/cm	0.39 mg/L	15.03 NTU	-40.0 mV	19.06 ft	100.00 ml/min
3/13/2024 9:19 AM	26:50	6.93 pH	11.10 °C	1.06 mS/cm	0.38 mg/L	10.81 NTU	-41.6 mV	19.06 ft	100.00 ml/min
3/13/2024 9:21 AM	28:45	6.93 pH	11.15 °C	1.06 mS/cm	0.38 mg/L	15.72 NTU	-41.3 mV	19.06 ft	100.00 ml/min
3/13/2024 9:22 AM	30:40	6.94 pH	11.12 °C	1.06 mS/cm	0.38 mg/L	16.90 NTU	-41.6 mV	19.06 ft	100.00 ml/min
3/13/2024 9:24 AM	32:35	6.94 pH	11.11 °C	1.06 mS/cm	0.38 mg/L	13.83 NTU	-41.6 mV	19.06 ft	100.00 ml/min
3/13/2024 9:26 AM	34:30	6.94 pH	11.12 °C	1.06 mS/cm	0.38 mg/L	11.60 NTU	-39.8 mV	19.06 ft	100.00 ml/min
3/13/2024 9:28 AM	36:25	6.94 pH	11.20 °C	1.06 mS/cm	0.37 mg/L	9.83 NTU	-38.7 mV	19.06 ft	100.00 ml/min
3/13/2024 9:30 AM	38:20	6.95 pH	11.25 °C	1.06 mS/cm	0.37 mg/L	6.15 NTU	-45.0 mV	19.13 ft	100.00 ml/min
3/13/2024 9:32 AM	40:15	6.96 pH	11.29 °C	1.06 mS/cm	0.37 mg/L	7.03 NTU	-47.6 mV	19.13 ft	100.00 ml/min
3/13/2024 9:34 AM	42:10	6.96 pH	11.27 °C	1.06 mS/cm	0.37 mg/L	6.92 NTU	-47.4 mV	19.13 ft	100.00 ml/min
3/13/2024 9:36 AM	44:05	6.97 pH	11.28 °C	1.06 mS/cm	0.37 mg/L	12.68 NTU	-46.9 mV	19.13 ft	100.00 ml/min
3/13/2024 9:38 AM	46:00	6.97 pH	11.34 °C	1.06 mS/cm	0.36 mg/L	11.24 NTU	-47.3 mV	19.13 ft	100.00 ml/min
3/13/2024 9:40 AM	47:55	6.97 pH	11.35 °C	1.05 mS/cm	0.36 mg/L	11.52 NTU	-48.3 mV	19.13 ft	100.00 ml/min
3/13/2024 9:42 AM	49:50	6.98 pH	11.35 °C	1.05 mS/cm	0.36 mg/L	8.35 NTU	-50.0 mV	19.13 ft	100.00 ml/min
3/13/2024 9:44 AM	51:45	6.98 pH	11.36 °C	1.06 mS/cm	0.36 mg/L	7.15 NTU	-50.5 mV	19.13 ft	100.00 ml/min
3/13/2024 9:45 AM	53:40	6.98 pH	11.29 °C	1.05 mS/cm	0.36 mg/L	4.62 NTU	-50.7 mV	19.17 ft	100.00 ml/min

Samples

Sample ID:	Description:
MW21-GW-0324	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 3/13/2024 9:23:13 AM

Project: Neal South MW-15

Operator Name: Thao Larson

Location Name: MW-15 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 10.2 ft Total Depth: 25.2 ft Initial Depth to Water: 20.21 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 20.9 ft Pump Intake From TOC: 22.9 ft Estimated Total Volume Pumped: 1365 ml Flow Cell Volume: 130 ml Final Flow Rate: 100 ml/min Final Draw Down: 0.06 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1010

Weather Conditions:

Sunny 35°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/13/2024 9:23 AM	00:00	6.89 pH	10.41 °C	1.54 mS/cm	4.36 mg/L	7.44 NTU	62.3 mV	20.21 ft	100.00 ml/min
3/13/2024 9:25 AM	01:57	6.89 pH	10.99 °C	1.72 mS/cm	0.96 mg/L	2.77 NTU	63.8 mV	20.21 ft	100.00 ml/min
3/13/2024 9:27 AM	03:54	6.88 pH	11.07 °C	1.74 mS/cm	0.44 mg/L	7.23 NTU	65.0 mV	20.23 ft	100.00 ml/min
3/13/2024 9:29 AM	05:51	6.90 pH	11.06 °C	1.75 mS/cm	0.38 mg/L	8.70 NTU	64.2 mV	20.23 ft	100.00 ml/min
3/13/2024 9:31 AM	07:48	6.89 pH	11.00 °C	1.75 mS/cm	0.33 mg/L	8.56 NTU	64.6 mV	20.23 ft	100.00 ml/min
3/13/2024 9:32 AM	09:45	6.89 pH	11.03 °C	1.75 mS/cm	0.31 mg/L	8.36 NTU	64.7 mV	20.27 ft	100.00 ml/min
3/13/2024 9:34 AM	11:42	6.89 pH	11.06 °C	1.76 mS/cm	0.29 mg/L	6.20 NTU	65.1 mV	20.27 ft	100.00 ml/min
3/13/2024 9:36 AM	13:39	6.88 pH	11.11 °C	1.76 mS/cm	0.28 mg/L	4.07 NTU	65.8 mV	20.27 ft	100.00 ml/min

Samples

Sample ID:	Description:
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MW15-GW-0324

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 3/13/2024 10:34:39 AM

Project: Neal South MW-10

Operator Name: Thao Larson

Location Name: MW-10 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 10.6 ft Total Depth: 29.8 ft Initial Depth to Water: 24.83 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 27.3 ft Pump Intake From TOC: 29.3 ft Estimated Total Volume Pumped: 4537.5 ml Flow Cell Volume: 130 ml Final Flow Rate: 250 ml/min Final Draw Down: 0.05 ft	Instrument Used: Aqua TROLL 600 Serial Number: 998748
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Test Notes:

Sample time 1105

Weather Conditions:

Sunny 40°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/13/2024 10:34 AM	00:00	7.08 pH	12.18 °C	1.78 mS/cm	3.16 mg/L	21.48 NTU	-82.5 mV	24.83 ft	250.00 ml/min
3/13/2024 10:36 AM	02:01	7.09 pH	12.42 °C	1.81 mS/cm	0.92 mg/L	9.21 NTU	-91.3 mV	24.83 ft	250.00 ml/min
3/13/2024 10:38 AM	04:02	7.09 pH	12.49 °C	1.79 mS/cm	0.71 mg/L	12.99 NTU	-93.2 mV	24.88 ft	250.00 ml/min
3/13/2024 10:40 AM	06:03	7.11 pH	12.51 °C	1.73 mS/cm	0.59 mg/L	3.63 NTU	-94.6 mV	24.88 ft	250.00 ml/min
3/13/2024 10:42 AM	08:04	7.12 pH	12.53 °C	1.68 mS/cm	0.56 mg/L	2.45 NTU	-96.2 mV	24.88 ft	250.00 ml/min
3/13/2024 10:44 AM	10:05	7.13 pH	12.54 °C	1.64 mS/cm	0.48 mg/L	1.80 NTU	-97.4 mV	24.88 ft	250.00 ml/min
3/13/2024 10:46 AM	12:06	7.13 pH	12.56 °C	1.62 mS/cm	0.41 mg/L	2.48 NTU	-98.4 mV	24.88 ft	250.00 ml/min
3/13/2024 10:48 AM	14:07	7.10 pH	12.56 °C	1.57 mS/cm	0.44 mg/L	1.58 NTU	-97.4 mV	24.88 ft	250.00 ml/min
3/13/2024 10:50 AM	16:08	7.10 pH	12.60 °C	1.56 mS/cm	0.39 mg/L	1.23 NTU	-97.9 mV	24.88 ft	250.00 ml/min
3/13/2024 10:52 AM	18:09	7.12 pH	12.63 °C	1.54 mS/cm	0.42 mg/L	0.19 NTU	-98.6 mV	24.88 ft	250.00 ml/min

Samples

Sample ID:	Description:
MW10-GW-0324	

Low-Flow Test Report:

Test Date / Time: 3/13/2024 11:06:03 AM

Project: Neal South MW-11

Operator Name: Paige Richards

Location Name: MW-11 Well Diameter: 2 in Casing Type: PVC Screen Length: 25 ft Top of Screen: 12.1 ft Total Depth: 37.1 ft Initial Depth to Water: 25.81 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 32.8 ft Pump Intake From TOC: 34.8 ft Estimated Total Volume Pumped: 1770.833 ml Flow Cell Volume: 130 ml Final Flow Rate: 225 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Vented Serial Number: 1050309
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Test Notes:

Sample time: 1130

Weather Conditions:

Sunny, 54 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
3/13/2024 11:06 AM	00:00	6.99 pH	13.03 °C	1.51 mS/cm	5.51 mg/L	1.86 NTU	63.1 mV	25.81 ft	400.00 ml/min
3/13/2024 11:08 AM	02:05	6.92 pH	12.99 °C	1.49 mS/cm	0.41 mg/L	1.09 NTU	49.6 mV	25.81 ft	225.00 ml/min
3/13/2024 11:10 AM	04:10	6.92 pH	13.05 °C	1.49 mS/cm	0.27 mg/L	0.83 NTU	47.2 mV	25.81 ft	225.00 ml/min
3/13/2024 11:12 AM	06:15	6.92 pH	13.13 °C	1.49 mS/cm	0.21 mg/L	0.00 NTU	46.4 mV	25.81 ft	225.00 ml/min

Samples

Sample ID:	Description:
MW11-GW-0324	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 6/3/2024 2:20:01 PM

Project: Neal South MW-15

Operator Name: Paige Richards

Location Name: MW-15 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 10.2 ft Total Depth: 25.2 ft Initial Depth to Water: 18.21 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 20.9 ft Pump Intake From TOC: 22.9 ft Estimated Total Volume Pumped: 4777.5 ml Flow Cell Volume: 130 ml Final Flow Rate: 350 ml/min Final Draw Down: 0.09 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1435

Water visually clear

Weather Conditions:

Sunny, 81 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
6/3/2024 2:20 PM	00:00	7.00 pH	17.43 °C	1.23 mS/cm	3.96 mg/L	1.64 NTU	79.3 mV	18.21 ft	350.00 ml/min
6/3/2024 2:21 PM	01:57	6.92 pH	14.08 °C	1.09 mS/cm	0.97 mg/L	0.00 NTU	42.3 mV	18.21 ft	350.00 ml/min
6/3/2024 2:23 PM	03:54	6.96 pH	14.28 °C	1.10 mS/cm	0.80 mg/L	0.00 NTU	43.2 mV	18.30 ft	350.00 ml/min
6/3/2024 2:25 PM	05:51	6.99 pH	13.70 °C	1.10 mS/cm	0.62 mg/L	0.00 NTU	25.5 mV	18.30 ft	350.00 ml/min
6/3/2024 2:27 PM	07:48	6.95 pH	13.59 °C	1.10 mS/cm	0.52 mg/L	0.00 NTU	20.9 mV	18.30 ft	350.00 ml/min
6/3/2024 2:29 PM	09:45	6.92 pH	13.32 °C	1.11 mS/cm	0.51 mg/L	0.00 NTU	19.0 mV	18.30 ft	350.00 ml/min
6/3/2024 2:31 PM	11:42	6.90 pH	13.57 °C	1.10 mS/cm	0.51 mg/L	0.00 NTU	19.8 mV	18.30 ft	350.00 ml/min
6/3/2024 2:33 PM	13:39	6.88 pH	13.52 °C	1.11 mS/cm	0.62 mg/L	0.00 NTU	24.1 mV	18.30 ft	350.00 ml/min

Samples

Sample ID:	Description:
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MW15-GW-0624

250mL plastic w/ nitric x1

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 6/3/2024 2:59:55 PM

Project: Neal South MW-8

Operator Name: Paige Richards

Location Name: MW-8 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 9.7 ft Total Depth: 24.7 ft Initial Depth to Water: 17.56 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 23.3 ft Pump Intake From TOC: 25.3 ft Estimated Total Volume Pumped: 6240 ml Flow Cell Volume: 130 ml Final Flow Rate: 225 ml/min Final Draw Down: 0.04 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1540

Water visually clear; flushed flow cell at 1518 and restarted test at 1520; live reading = 2.16 NTU at 1518

Weather Conditions:

Sunny, 81 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
6/3/2024 2:59 PM	00:00	6.93 pH	18.31 °C	1.50 mS/cm	4.68 mg/L	3.15 NTU	58.2 mV	17.56 ft	200.00 ml/min
6/3/2024 3:01 PM	01:58	7.06 pH	15.73 °C	1.56 mS/cm	3.00 mg/L	1.57 NTU	43.1 mV	17.56 ft	200.00 ml/min
6/3/2024 3:03 PM	03:56	7.10 pH	15.12 °C	1.56 mS/cm	2.66 mg/L	0.00 NTU	33.0 mV	17.60 ft	200.00 ml/min
6/3/2024 3:05 PM	05:54	7.07 pH	15.11 °C	1.57 mS/cm	2.35 mg/L	0.00 NTU	32.6 mV	17.60 ft	200.00 ml/min
6/3/2024 3:07 PM	07:52	7.03 pH	15.05 °C	1.57 mS/cm	1.96 mg/L	0.00 NTU	31.3 mV	17.60 ft	200.00 ml/min
6/3/2024 3:09 PM	09:50	6.99 pH	15.01 °C	1.57 mS/cm	1.74 mg/L	0.00 NTU	30.4 mV	17.60 ft	200.00 ml/min
6/3/2024 3:11 PM	11:48	6.96 pH	14.95 °C	1.57 mS/cm	1.59 mg/L	2.88 NTU	31.2 mV	17.60 ft	200.00 ml/min
6/3/2024 3:13 PM	13:46	6.95 pH	15.13 °C	1.57 mS/cm	1.51 mg/L	6.51 NTU	31.0 mV	17.60 ft	200.00 ml/min
6/3/2024 3:15 PM	15:44	6.95 pH	15.06 °C	1.58 mS/cm	1.53 mg/L	27.25 NTU	31.3 mV	17.60 ft	200.00 ml/min
6/3/2024 3:17 PM	17:42	6.94 pH	14.92 °C	1.57 mS/cm	1.57 mg/L	38.36 NTU	32.8 mV	17.60 ft	200.00 ml/min
6/3/2024 3:20 PM	20:23	6.96 pH	17.81 °C	1.57 mS/cm	2.59 mg/L	2.63 NTU	31.8 mV	17.60 ft	200.00 ml/min

6/3/2024 3:22 PM	22:21	6.94 pH	14.56 °C	1.58 mS/cm	1.35 mg/L	0.67 NTU	31.7 mV	17.60 ft	225.00 ml/min
6/3/2024 3:24 PM	24:19	6.95 pH	14.68 °C	1.58 mS/cm	1.27 mg/L	0.38 NTU	31.5 mV	17.60 ft	225.00 ml/min
6/3/2024 3:26 PM	26:17	6.93 pH	14.96 °C	1.58 mS/cm	0.98 mg/L	0.00 NTU	32.1 mV	17.60 ft	225.00 ml/min
6/3/2024 3:28 PM	28:15	6.93 pH	14.79 °C	1.58 mS/cm	1.13 mg/L	0.00 NTU	32.4 mV	17.60 ft	225.00 ml/min
6/3/2024 3:30 PM	30:13	6.93 pH	14.78 °C	1.58 mS/cm	1.09 mg/L	1.29 NTU	33.0 mV	17.60 ft	225.00 ml/min

Samples

Sample ID:	Description:
MW08-GW-0624	250mL plastic w/ nitric x1
MS/MSD	250mL plastic w/ nitric x2

Low-Flow Test Report:

Test Date / Time: 6/3/2024 3:51:49 PM

Project: Neal South MW-12

Operator Name: Paige Richards

Location Name: MW-12 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 25.8 ft Total Depth: 35.8 ft Initial Depth to Water: 29.61 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 31 ft Pump Intake From TOC: 33 ft Estimated Total Volume Pumped: 3410 ml Flow Cell Volume: 130 ml Final Flow Rate: 275 ml/min Final Draw Down: 0.03 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1610

Water visually clear

Weather Conditions:

Sunny, 83 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
6/3/2024 3:51 PM	00:00	6.88 pH	18.26 °C	1.72 mS/cm	2.93 mg/L	0.00 NTU	-71.8 mV	29.61 ft	425.00 ml/min
6/3/2024 3:53 PM	02:04	7.05 pH	15.03 °C	1.74 mS/cm	0.16 mg/L	0.00 NTU	-82.8 mV	29.64 ft	400.00 ml/min
6/3/2024 3:55 PM	04:08	7.05 pH	15.64 °C	1.74 mS/cm	0.11 mg/L	0.00 NTU	-85.5 mV	29.64 ft	275.00 ml/min
6/3/2024 3:58 PM	06:12	7.04 pH	15.78 °C	1.73 mS/cm	0.08 mg/L	0.00 NTU	-71.9 mV	29.64 ft	275.00 ml/min
6/3/2024 4:00 PM	08:16	7.03 pH	15.73 °C	1.73 mS/cm	0.05 mg/L	0.00 NTU	-74.3 mV	29.64 ft	275.00 ml/min
6/3/2024 4:02 PM	10:20	7.02 pH	15.34 °C	1.72 mS/cm	0.05 mg/L	0.00 NTU	-72.6 mV	29.64 ft	275.00 ml/min

Samples

Sample ID:	Description:
MW12-GW-0624	250mL plastic w/ nitric x1
DP02-GW-0624	250mL plastic w/ nitric x1

Low-Flow Test Report:

Test Date / Time: 6/3/2024 4:15:17 PM

Project: Neal South MW-14

Operator Name: Paige Richards

Location Name: MW-14 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 14.8 ft Total Depth: 29.8 ft Initial Depth to Water: 23.22 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 25.5 ft Pump Intake From TOC: 27.5 ft Estimated Total Volume Pumped: 4854 ml Flow Cell Volume: 130 ml Final Flow Rate: 300 ml/min Final Draw Down: 0.07 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1645

Water visually clear with trace black flecks

Weather Conditions:

Sunny, 83 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
6/3/2024 4:15 PM	00:00	6.68 pH	19.81 °C	1.40 mS/cm	2.37 mg/L	0.00 NTU	-24.5 mV	23.22 ft	315.00 ml/min
6/3/2024 4:17 PM	02:00	6.98 pH	15.65 °C	1.36 mS/cm	0.13 mg/L	0.00 NTU	-22.1 mV	23.22 ft	315.00 ml/min
6/3/2024 4:19 PM	04:00	6.99 pH	15.40 °C	1.36 mS/cm	0.06 mg/L	0.00 NTU	-17.3 mV	23.29 ft	315.00 ml/min
6/3/2024 4:24 PM	09:36	6.82 pH	21.71 °C	1.40 mS/cm	0.24 mg/L	0.00 NTU	-6.1 mV	23.29 ft	315.00 ml/min
6/3/2024 4:26 PM	11:36	6.93 pH	15.45 °C	1.36 mS/cm	0.06 mg/L	0.00 NTU	-2.5 mV	23.29 ft	300.00 ml/min
6/3/2024 4:28 PM	13:36	6.93 pH	15.14 °C	1.36 mS/cm	0.03 mg/L	1.53 NTU	1.2 mV	23.29 ft	300.00 ml/min
6/3/2024 4:30 PM	15:36	6.90 pH	15.13 °C	1.36 mS/cm	0.03 mg/L	3.56 NTU	5.0 mV	23.29 ft	300.00 ml/min

Samples

Sample ID:	Description:
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MW14-GW-0624

1L plastic w/ nitric x2

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 9/17/2024 8:02:31 AM

Project: Neal South MW-26

Operator Name: Thao Larson

Location Name: MW-26 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 14.8 ft Total Depth: 29.8 ft Initial Depth to Water: 17.85 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 27.8 ft Pump Intake From TOC: 27.8 ft Estimated Total Volume Pumped: 3210 ml Flow Cell Volume: 130 ml Final Flow Rate: 300 ml/min Final Draw Down: -0.18 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 0815

Weather Conditions:

Sunny 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 8:02 AM	00:00	6.31 pH	16.04 °C	0.97 mS/cm	4.19 mg/L	40.02 NTU	101.8 mV	17.65 ft	300.00 ml/min
9/17/2024 8:04 AM	01:47	6.51 pH	13.84 °C	0.97 mS/cm	1.07 mg/L	8.85 NTU	69.3 mV	17.65 ft	300.00 ml/min
9/17/2024 8:06 AM	03:34	6.52 pH	13.55 °C	0.98 mS/cm	0.84 mg/L	4.71 NTU	73.0 mV	17.67 ft	300.00 ml/min
9/17/2024 8:07 AM	05:21	6.52 pH	13.43 °C	0.98 mS/cm	0.64 mg/L	4.47 NTU	77.0 mV	17.67 ft	300.00 ml/min
9/17/2024 8:09 AM	07:08	6.53 pH	13.47 °C	0.98 mS/cm	0.57 mg/L	3.19 NTU	79.0 mV	17.67 ft	300.00 ml/min
9/17/2024 8:11 AM	08:55	6.53 pH	13.43 °C	0.98 mS/cm	0.50 mg/L	3.47 NTU	80.7 mV	17.67 ft	300.00 ml/min
9/17/2024 8:13 AM	10:42	6.53 pH	13.38 °C	0.98 mS/cm	0.51 mg/L	4.33 NTU	81.9 mV	17.67 ft	300.00 ml/min

Samples

Sample ID:	Description:
MW26-GW-0924	PME

Low-Flow Test Report:

Test Date / Time: 9/17/2024 8:29:53 AM

Project: Neal South MW-36

Operator Name: Thao Larson

Location Name: MW-36 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 15.1 ft Total Depth: 30.1 ft Initial Depth to Water: 17.73 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 28.1 ft Pump Intake From TOC: 28.1 ft Estimated Total Volume Pumped: 5940 ml Flow Cell Volume: 130 ml Final Flow Rate: 300 ml/min Final Draw Down: 0.03 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 0850

Weather Conditions:

Sunny 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 8:29 AM	00:00	6.84 pH	15.18 °C	1.13 mS/cm	4.44 mg/L	616.78 NTU	-47.5 mV	17.73 ft	300.00 ml/min
9/17/2024 8:31 AM	01:48	6.73 pH	13.20 °C	1.14 mS/cm	0.94 mg/L	175.29 NTU	-38.3 mV	17.76 ft	300.00 ml/min
9/17/2024 8:33 AM	03:36	6.68 pH	13.00 °C	1.15 mS/cm	0.61 mg/L	66.99 NTU	-12.9 mV	17.76 ft	300.00 ml/min
9/17/2024 8:35 AM	05:24	6.64 pH	13.07 °C	1.15 mS/cm	0.48 mg/L	36.02 NTU	-5.6 mV	17.76 ft	300.00 ml/min
9/17/2024 8:37 AM	07:12	6.63 pH	13.01 °C	1.15 mS/cm	0.40 mg/L	29.26 NTU	-13.7 mV	17.77 ft	300.00 ml/min
9/17/2024 8:38 AM	09:00	6.63 pH	12.94 °C	1.15 mS/cm	0.33 mg/L	17.88 NTU	-33.9 mV	17.77 ft	300.00 ml/min
9/17/2024 8:40 AM	10:48	6.63 pH	12.99 °C	1.15 mS/cm	0.30 mg/L	12.47 NTU	-48.8 mV	17.76 ft	300.00 ml/min
9/17/2024 8:42 AM	12:36	6.63 pH	12.92 °C	1.15 mS/cm	0.28 mg/L	11.06 NTU	-64.0 mV	17.76 ft	300.00 ml/min
9/17/2024 8:44 AM	14:24	6.63 pH	12.96 °C	1.15 mS/cm	0.25 mg/L	7.60 NTU	-72.9 mV	17.76 ft	300.00 ml/min
9/17/2024 8:46 AM	16:12	6.64 pH	12.89 °C	1.14 mS/cm	0.24 mg/L	10.01 NTU	-77.2 mV	17.76 ft	300.00 ml/min
9/17/2024 8:47 AM	18:00	6.64 pH	12.91 °C	1.14 mS/cm	0.23 mg/L	8.16 NTU	-81.4 mV	17.76 ft	300.00 ml/min
9/17/2024 8:49 AM	19:48	6.65 pH	12.95 °C	1.14 mS/cm	0.21 mg/L	4.67 NTU	-86.1 mV	17.76 ft	300.00 ml/min

Samples

Sample ID:	Description:
MW36-GW-0924	PME

Low-Flow Test Report:

Test Date / Time: 9/17/2024 9:04:10 AM

Project: Neal South MW-34

Operator Name: Thao Larson

Location Name: MW-34 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 15.1 ft Total Depth: 30.1 ft Initial Depth to Water: 17.87 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 28.1 ft Pump Intake From TOC: 28.1 ft Estimated Total Volume Pumped: 15615 ml Flow Cell Volume: 130 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.03 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 0950

Weather Conditions:

Overcast 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 9:04 AM	00:00	6.75 pH	14.61 °C	1.28 mS/cm	4.57 mg/L	458.44 NTU	-122.5 mV	17.87 ft	375.00 ml/min
9/17/2024 9:05 AM	01:48	6.68 pH	13.53 °C	1.29 mS/cm	0.36 mg/L	110.24 NTU	-95.1 mV	17.89 ft	375.00 ml/min
9/17/2024 9:07 AM	03:36	6.67 pH	13.27 °C	1.29 mS/cm	0.23 mg/L	91.84 NTU	-91.6 mV	17.90 ft	375.00 ml/min
9/17/2024 9:09 AM	05:24	6.67 pH	13.28 °C	1.29 mS/cm	0.18 mg/L	68.43 NTU	-92.8 mV	17.90 ft	375.00 ml/min
9/17/2024 9:11 AM	07:12	6.68 pH	13.21 °C	1.29 mS/cm	0.15 mg/L	55.49 NTU	-97.3 mV	17.90 ft	375.00 ml/min
9/17/2024 9:13 AM	09:00	6.69 pH	13.19 °C	1.29 mS/cm	0.13 mg/L	44.87 NTU	-99.9 mV	17.90 ft	375.00 ml/min
9/17/2024 9:14 AM	10:48	6.69 pH	13.21 °C	1.29 mS/cm	0.13 mg/L	31.81 NTU	-102.6 mV	17.90 ft	375.00 ml/min
9/17/2024 9:16 AM	12:36	6.70 pH	13.30 °C	1.30 mS/cm	0.11 mg/L	45.09 NTU	-103.9 mV	17.90 ft	375.00 ml/min
9/17/2024 9:18 AM	14:24	6.70 pH	13.30 °C	1.30 mS/cm	0.14 mg/L	36.06 NTU	-105.8 mV	17.90 ft	375.00 ml/min
9/17/2024 9:20 AM	16:12	6.70 pH	13.28 °C	1.30 mS/cm	0.10 mg/L	25.79 NTU	-107.3 mV	17.90 ft	375.00 ml/min
9/17/2024 9:22 AM	18:00	6.71 pH	13.31 °C	1.30 mS/cm	0.11 mg/L	31.59 NTU	-107.9 mV	17.90 ft	375.00 ml/min
9/17/2024 9:23 AM	19:48	6.72 pH	13.34 °C	1.30 mS/cm	0.10 mg/L	70.57 NTU	-110.1 mV	17.90 ft	375.00 ml/min

9/17/2024 9:25 AM	21:36	6.76 pH	13.44 °C	1.30 mS/cm	1.94 mg/L	373.65 NTU	-106.5 mV	17.90 ft	375.00 ml/min
9/17/2024 9:27 AM	23:24	6.74 pH	13.32 °C	1.30 mS/cm	0.53 mg/L	19.81 NTU	-105.1 mV	17.90 ft	375.00 ml/min
9/17/2024 9:29 AM	25:12	6.73 pH	13.32 °C	1.30 mS/cm	0.21 mg/L	15.93 NTU	-106.1 mV	17.90 ft	375.00 ml/min
9/17/2024 9:31 AM	27:00	6.74 pH	13.30 °C	1.30 mS/cm	0.11 mg/L	13.04 NTU	-108.1 mV	17.90 ft	375.00 ml/min
9/17/2024 9:32 AM	28:48	6.73 pH	13.27 °C	1.30 mS/cm	0.06 mg/L	17.11 NTU	-109.3 mV	17.90 ft	375.00 ml/min
9/17/2024 9:34 AM	30:36	6.74 pH	13.37 °C	1.30 mS/cm	0.05 mg/L	14.57 NTU	-111.2 mV	17.90 ft	375.00 ml/min
9/17/2024 9:36 AM	32:24	6.75 pH	13.35 °C	1.30 mS/cm	0.05 mg/L	12.79 NTU	-111.9 mV	17.90 ft	375.00 ml/min
9/17/2024 9:38 AM	34:12	6.75 pH	13.33 °C	1.30 mS/cm	0.04 mg/L	10.86 NTU	-112.9 mV	17.90 ft	375.00 ml/min
9/17/2024 9:40 AM	36:00	6.75 pH	13.44 °C	1.30 mS/cm	0.05 mg/L	11.39 NTU	-113.9 mV	17.90 ft	375.00 ml/min
9/17/2024 9:41 AM	37:48	6.75 pH	13.60 °C	1.30 mS/cm	0.06 mg/L	11.51 NTU	-115.0 mV	17.90 ft	200.00 ml/min
9/17/2024 9:43 AM	39:36	6.76 pH	13.75 °C	1.30 mS/cm	0.07 mg/L	7.64 NTU	-116.6 mV	17.90 ft	200.00 ml/min
9/17/2024 9:45 AM	41:24	6.76 pH	13.72 °C	1.30 mS/cm	0.09 mg/L	7.29 NTU	-117.0 mV	17.90 ft	200.00 ml/min
9/17/2024 9:47 AM	43:12	6.76 pH	13.74 °C	1.30 mS/cm	0.14 mg/L	7.23 NTU	-116.7 mV	17.90 ft	200.00 ml/min
9/17/2024 9:49 AM	45:00	6.77 pH	13.75 °C	1.30 mS/cm	0.10 mg/L	4.74 NTU	-117.6 mV	17.90 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW34-GW-0924	PME

Low-Flow Test Report:

Test Date / Time: 9/17/2024 10:02:54 AM

Project: Neal South MW-33

Operator Name: Thao Larson

Location Name: MW-33 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 15.1 ft Total Depth: 30.1 ft Initial Depth to Water: 17.66 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 28.1 ft Pump Intake From TOC: 28.1 ft Estimated Total Volume Pumped: 6075 ml Flow Cell Volume: 130 ml Final Flow Rate: 300 ml/min Final Draw Down: 0.17 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1025

Weather Conditions:

Overcast 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 10:02 AM	00:00	6.78 pH	15.30 °C	1.37 mS/cm	5.18 mg/L	70.12 NTU	-108.0 mV	17.66 ft	375.00 ml/min
9/17/2024 10:04 AM	01:48	6.71 pH	13.48 °C	1.38 mS/cm	0.55 mg/L	25.21 NTU	-98.8 mV	17.89 ft	300.00 ml/min
9/17/2024 10:06 AM	03:36	6.70 pH	13.35 °C	1.38 mS/cm	0.40 mg/L	14.58 NTU	-98.4 mV	17.85 ft	300.00 ml/min
9/17/2024 10:08 AM	05:24	6.69 pH	13.74 °C	1.39 mS/cm	0.28 mg/L	14.33 NTU	-99.5 mV	17.83 ft	300.00 ml/min
9/17/2024 10:10 AM	07:12	6.70 pH	13.83 °C	1.39 mS/cm	0.23 mg/L	18.16 NTU	-100.4 mV	17.83 ft	300.00 ml/min
9/17/2024 10:11 AM	09:00	6.71 pH	13.81 °C	1.38 mS/cm	0.19 mg/L	12.41 NTU	-101.3 mV	17.83 ft	300.00 ml/min
9/17/2024 10:13 AM	10:48	6.71 pH	13.83 °C	1.38 mS/cm	0.16 mg/L	8.57 NTU	-102.1 mV	17.83 ft	300.00 ml/min
9/17/2024 10:15 AM	12:36	6.71 pH	13.91 °C	1.38 mS/cm	0.15 mg/L	9.99 NTU	-102.9 mV	17.83 ft	300.00 ml/min
9/17/2024 10:17 AM	14:24	6.71 pH	13.81 °C	1.39 mS/cm	0.12 mg/L	6.25 NTU	-103.4 mV	17.83 ft	300.00 ml/min
9/17/2024 10:19 AM	16:12	6.72 pH	13.85 °C	1.39 mS/cm	0.11 mg/L	8.26 NTU	-103.8 mV	17.83 ft	300.00 ml/min
9/17/2024 10:20 AM	18:00	6.71 pH	13.99 °C	1.39 mS/cm	0.13 mg/L	9.20 NTU	-104.2 mV	17.83 ft	300.00 ml/min
9/17/2024 10:22 AM	19:48	6.71 pH	13.98 °C	1.39 mS/cm	0.13 mg/L	5.73 NTU	-104.7 mV	17.83 ft	300.00 ml/min

Samples

Sample ID:	Description:
MW33-GW-0924	PME

Low-Flow Test Report:

Test Date / Time: 9/17/2024 10:38:19 AM

Project: Neal South MW-32

Operator Name: Thao Larson

Location Name: MW-32 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 14.8 ft Total Depth: 29.8 ft Initial Depth to Water: 17.57 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 27.8 ft Pump Intake From TOC: 27.8 ft Estimated Total Volume Pumped: 12037.5 ml Flow Cell Volume: 130 ml Final Flow Rate: 250 ml/min Final Draw Down: 0.13 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1130

Weather Conditions:

Overcast 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 10:38 AM	00:00	6.72 pH	15.96 °C	1.35 mS/cm	3.97 mg/L	331.90 NTU	-81.2 mV	17.57 ft	250.00 ml/min
9/17/2024 10:40 AM	01:47	6.64 pH	14.09 °C	1.39 mS/cm	0.69 mg/L	138.95 NTU	-50.9 mV	17.68 ft	250.00 ml/min
9/17/2024 10:41 AM	03:34	6.62 pH	13.64 °C	1.40 mS/cm	0.35 mg/L	126.30 NTU	-41.1 mV	17.68 ft	250.00 ml/min
9/17/2024 10:43 AM	05:21	6.62 pH	13.59 °C	1.40 mS/cm	0.25 mg/L	118.58 NTU	-44.4 mV	17.70 ft	250.00 ml/min
9/17/2024 10:45 AM	07:08	6.63 pH	13.48 °C	1.40 mS/cm	0.21 mg/L	102.41 NTU	-47.5 mV	17.70 ft	250.00 ml/min
9/17/2024 10:47 AM	08:55	6.64 pH	13.66 °C	1.40 mS/cm	0.21 mg/L	120.32 NTU	-52.1 mV	17.70 ft	250.00 ml/min
9/17/2024 10:49 AM	10:42	6.65 pH	13.67 °C	1.40 mS/cm	0.23 mg/L	72.43 NTU	-56.3 mV	17.70 ft	250.00 ml/min
9/17/2024 10:50 AM	12:29	6.65 pH	13.66 °C	1.40 mS/cm	0.17 mg/L	68.75 NTU	-59.5 mV	17.70 ft	250.00 ml/min
9/17/2024 10:52 AM	14:16	6.65 pH	13.74 °C	1.40 mS/cm	0.19 mg/L	53.96 NTU	-64.0 mV	17.70 ft	250.00 ml/min
9/17/2024 10:54 AM	16:03	6.66 pH	13.79 °C	1.39 mS/cm	0.27 mg/L	34.47 NTU	-67.6 mV	17.70 ft	250.00 ml/min
9/17/2024 10:56 AM	17:50	6.67 pH	13.83 °C	1.39 mS/cm	0.19 mg/L	33.84 NTU	-69.0 mV	17.70 ft	250.00 ml/min
9/17/2024 10:57 AM	19:37	6.67 pH	13.91 °C	1.39 mS/cm	0.15 mg/L	34.55 NTU	-71.2 mV	17.70 ft	250.00 ml/min

9/17/2024 10:59 AM	21:24	6.73 pH	13.73 °C	1.32 mS/cm	2.63 mg/L	30.16 NTU	-79.0 mV	17.70 ft	250.00 ml/min
9/17/2024 11:01 AM	23:11	6.68 pH	13.84 °C	1.32 mS/cm	0.61 mg/L	27.61 NTU	-74.3 mV	17.70 ft	250.00 ml/min
9/17/2024 11:03 AM	24:58	6.68 pH	13.87 °C	1.32 mS/cm	0.38 mg/L	24.46 NTU	-74.6 mV	17.70 ft	250.00 ml/min
9/17/2024 11:05 AM	26:45	6.68 pH	13.84 °C	1.32 mS/cm	0.30 mg/L	26.53 NTU	-75.5 mV	17.70 ft	250.00 ml/min
9/17/2024 11:06 AM	28:32	6.67 pH	13.85 °C	1.32 mS/cm	0.25 mg/L	17.94 NTU	-76.5 mV	17.70 ft	250.00 ml/min
9/17/2024 11:08 AM	30:19	6.68 pH	13.93 °C	1.32 mS/cm	0.23 mg/L	13.15 NTU	-79.1 mV	17.70 ft	250.00 ml/min
9/17/2024 11:10 AM	32:06	6.68 pH	13.89 °C	1.32 mS/cm	0.17 mg/L	14.03 NTU	-78.1 mV	17.70 ft	250.00 ml/min
9/17/2024 11:12 AM	33:53	6.68 pH	14.06 °C	1.32 mS/cm	0.17 mg/L	10.89 NTU	-78.4 mV	17.70 ft	250.00 ml/min
9/17/2024 11:13 AM	35:40	6.69 pH	14.19 °C	1.32 mS/cm	0.14 mg/L	13.55 NTU	-79.7 mV	17.70 ft	250.00 ml/min
9/17/2024 11:15 AM	37:27	6.68 pH	14.32 °C	1.32 mS/cm	0.13 mg/L	7.88 NTU	-81.1 mV	17.70 ft	250.00 ml/min
9/17/2024 11:17 AM	39:14	6.69 pH	14.34 °C	1.31 mS/cm	0.13 mg/L	7.62 NTU	-82.7 mV	17.70 ft	250.00 ml/min
9/17/2024 11:19 AM	41:01	6.68 pH	14.10 °C	1.31 mS/cm	0.12 mg/L	10.05 NTU	-80.7 mV	17.70 ft	250.00 ml/min
9/17/2024 11:21 AM	42:48	6.69 pH	14.14 °C	1.31 mS/cm	0.09 mg/L	6.26 NTU	-83.7 mV	17.70 ft	250.00 ml/min
9/17/2024 11:22 AM	44:35	6.69 pH	14.15 °C	1.31 mS/cm	0.08 mg/L	6.38 NTU	-82.2 mV	17.70 ft	250.00 ml/min
9/17/2024 11:24 AM	46:22	6.69 pH	14.23 °C	1.31 mS/cm	0.08 mg/L	7.08 NTU	-84.7 mV	17.70 ft	250.00 ml/min
9/17/2024 11:26 AM	48:09	6.70 pH	14.22 °C	1.31 mS/cm	0.08 mg/L	4.91 NTU	-84.3 mV	17.70 ft	250.00 ml/min

Samples

Sample ID:	Description:
MW32-GW-0924	PME

Low-Flow Test Report:

Test Date / Time: 9/17/2024 11:45:13 AM

Project: Neal South MW-30

Operator Name: Thao Larson

Location Name: MW-30 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 15.1 ft Total Depth: 30.1 ft Initial Depth to Water: 17.56 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 28.1 ft Pump Intake From TOC: 28.1 ft Estimated Total Volume Pumped: 13950 ml Flow Cell Volume: 130 ml Final Flow Rate: 250 ml/min Final Draw Down: 0.06 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1245

Weather Conditions:

Overcast 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 11:45 AM	00:00	6.93 pH	16.71 °C	1.25 mS/cm	2.61 mg/L	457.52 NTU	-143.8 mV	17.56 ft	250.00 ml/min
9/17/2024 11:47 AM	01:48	6.92 pH	14.97 °C	1.27 mS/cm	0.59 mg/L	231.07 NTU	-145.8 mV	17.63 ft	250.00 ml/min
9/17/2024 11:48 AM	03:36	6.91 pH	14.62 °C	1.28 mS/cm	0.37 mg/L	123.11 NTU	-147.4 mV	17.63 ft	250.00 ml/min
9/17/2024 11:50 AM	05:24	6.93 pH	14.65 °C	1.28 mS/cm	0.30 mg/L	99.87 NTU	-148.5 mV	17.63 ft	250.00 ml/min
9/17/2024 11:52 AM	07:12	6.94 pH	14.56 °C	1.27 mS/cm	0.26 mg/L	87.88 NTU	-149.4 mV	17.63 ft	250.00 ml/min
9/17/2024 11:54 AM	09:00	6.94 pH	14.64 °C	1.27 mS/cm	0.21 mg/L	76.02 NTU	-150.6 mV	17.63 ft	250.00 ml/min
9/17/2024 11:56 AM	10:48	6.96 pH	14.64 °C	1.27 mS/cm	0.18 mg/L	68.44 NTU	-151.7 mV	17.63 ft	250.00 ml/min
9/17/2024 11:57 AM	12:36	6.97 pH	14.54 °C	1.27 mS/cm	0.17 mg/L	52.65 NTU	-152.8 mV	17.63 ft	250.00 ml/min
9/17/2024 11:59 AM	14:24	6.99 pH	14.57 °C	1.27 mS/cm	0.15 mg/L	41.89 NTU	-154.1 mV	17.63 ft	250.00 ml/min
9/17/2024 12:01 PM	16:12	6.99 pH	14.47 °C	1.27 mS/cm	0.13 mg/L	42.95 NTU	-155.2 mV	17.63 ft	250.00 ml/min
9/17/2024 12:03 PM	18:00	7.00 pH	14.45 °C	1.27 mS/cm	0.12 mg/L	42.51 NTU	-155.8 mV	17.63 ft	250.00 ml/min
9/17/2024 12:05 PM	19:48	7.02 pH	14.34 °C	1.27 mS/cm	1.72 mg/L	123.51 NTU	-147.1 mV	17.63 ft	250.00 ml/min

9/17/2024 12:06 PM	21:36	7.00 pH	14.47 °C	1.27 mS/cm	0.27 mg/L	57.05 NTU	-149.7 mV	17.63 ft	250.00 ml/min
9/17/2024 12:08 PM	23:24	6.99 pH	14.51 °C	1.27 mS/cm	0.19 mg/L	28.93 NTU	-151.0 mV	17.63 ft	250.00 ml/min
9/17/2024 12:10 PM	25:12	6.99 pH	14.51 °C	1.28 mS/cm	0.15 mg/L	22.91 NTU	-151.5 mV	17.63 ft	250.00 ml/min
9/17/2024 12:12 PM	27:00	7.00 pH	14.41 °C	1.27 mS/cm	0.13 mg/L	21.88 NTU	-152.3 mV	17.63 ft	250.00 ml/min
9/17/2024 12:14 PM	28:48	7.00 pH	14.42 °C	1.27 mS/cm	0.12 mg/L	18.52 NTU	-152.3 mV	17.63 ft	250.00 ml/min
9/17/2024 12:15 PM	30:36	6.99 pH	14.44 °C	1.27 mS/cm	0.11 mg/L	18.67 NTU	-152.1 mV	17.63 ft	250.00 ml/min
9/17/2024 12:17 PM	32:24	7.00 pH	14.48 °C	1.27 mS/cm	0.10 mg/L	16.70 NTU	-152.5 mV	17.63 ft	250.00 ml/min
9/17/2024 12:19 PM	34:12	6.99 pH	14.53 °C	1.27 mS/cm	0.10 mg/L	14.94 NTU	-152.4 mV	17.63 ft	250.00 ml/min
9/17/2024 12:21 PM	36:00	6.99 pH	14.54 °C	1.27 mS/cm	0.09 mg/L	14.53 NTU	-152.1 mV	17.63 ft	250.00 ml/min
9/17/2024 12:23 PM	37:48	6.99 pH	14.52 °C	1.27 mS/cm	0.08 mg/L	13.95 NTU	-152.0 mV	17.63 ft	250.00 ml/min
9/17/2024 12:24 PM	39:36	6.99 pH	14.49 °C	1.27 mS/cm	0.08 mg/L	11.71 NTU	-151.8 mV	17.63 ft	250.00 ml/min
9/17/2024 12:26 PM	41:24	6.99 pH	14.51 °C	1.27 mS/cm	0.08 mg/L	11.41 NTU	-151.6 mV	17.62 ft	250.00 ml/min
9/17/2024 12:28 PM	43:12	6.99 pH	14.50 °C	1.27 mS/cm	0.09 mg/L	9.99 NTU	-151.4 mV	17.62 ft	250.00 ml/min
9/17/2024 12:30 PM	45:00	6.99 pH	14.53 °C	1.27 mS/cm	0.09 mg/L	10.86 NTU	-151.3 mV	17.62 ft	250.00 ml/min
9/17/2024 12:32 PM	46:48	6.98 pH	14.56 °C	1.27 mS/cm	0.09 mg/L	9.11 NTU	-151.3 mV	17.62 ft	250.00 ml/min
9/17/2024 12:33 PM	48:36	6.98 pH	14.54 °C	1.27 mS/cm	0.09 mg/L	8.41 NTU	-150.6 mV	17.62 ft	250.00 ml/min
9/17/2024 12:35 PM	50:24	6.98 pH	14.54 °C	1.27 mS/cm	0.09 mg/L	8.86 NTU	-150.6 mV	17.62 ft	250.00 ml/min
9/17/2024 12:37 PM	52:12	6.98 pH	14.55 °C	1.27 mS/cm	0.09 mg/L	7.68 NTU	-149.9 mV	17.62 ft	250.00 ml/min
9/17/2024 12:39 PM	54:00	6.98 pH	14.42 °C	1.27 mS/cm	0.08 mg/L	6.99 NTU	-149.9 mV	17.62 ft	250.00 ml/min
9/17/2024 12:41 PM	55:48	6.98 pH	14.52 °C	1.27 mS/cm	0.09 mg/L	5.87 NTU	-149.5 mV	17.62 ft	250.00 ml/min

Samples

Sample ID:	Description:
MW30-GW-0924	PME

Low-Flow Test Report:

Test Date / Time: 9/17/2024 12:57:00 PM

Project: Neal South MW-28

Operator Name: Thao Larson

Location Name: MW-28 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 15.1 ft Total Depth: 30.1 ft Initial Depth to Water: 17.73 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 28.1 ft Pump Intake From TOC: 28.1 ft Estimated Total Volume Pumped: 12600 ml Flow Cell Volume: 130 ml Final Flow Rate: 250 ml/min Final Draw Down: 0.18 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1350

Weather Conditions:

Overcast 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 12:57 PM	00:00	6.89 pH	15.96 °C	1.28 mS/cm	3.55 mg/L	135.80 NTU	-98.9 mV	17.73 ft	250.00 ml/min
9/17/2024 12:58 PM	01:48	6.87 pH	14.46 °C	1.32 mS/cm	0.65 mg/L	80.29 NTU	-95.1 mV	17.90 ft	250.00 ml/min
9/17/2024 1:00 PM	03:36	6.87 pH	14.22 °C	1.33 mS/cm	0.45 mg/L	72.70 NTU	-94.4 mV	17.90 ft	250.00 ml/min
9/17/2024 1:02 PM	05:24	6.88 pH	14.08 °C	1.33 mS/cm	0.38 mg/L	58.79 NTU	-95.3 mV	17.91 ft	250.00 ml/min
9/17/2024 1:04 PM	07:12	6.88 pH	14.21 °C	1.34 mS/cm	0.35 mg/L	74.71 NTU	-97.3 mV	17.91 ft	250.00 ml/min
9/17/2024 1:06 PM	09:00	6.88 pH	14.25 °C	1.32 mS/cm	0.33 mg/L	63.91 NTU	-96.6 mV	17.91 ft	250.00 ml/min
9/17/2024 1:07 PM	10:48	6.89 pH	14.30 °C	1.32 mS/cm	0.31 mg/L	55.89 NTU	-99.0 mV	17.91 ft	250.00 ml/min
9/17/2024 1:09 PM	12:36	6.89 pH	14.21 °C	1.31 mS/cm	0.29 mg/L	64.16 NTU	-99.8 mV	17.91 ft	250.00 ml/min
9/17/2024 1:11 PM	14:24	6.90 pH	14.13 °C	1.32 mS/cm	0.27 mg/L	54.73 NTU	-98.8 mV	17.91 ft	250.00 ml/min
9/17/2024 1:13 PM	16:12	6.90 pH	14.14 °C	1.31 mS/cm	0.26 mg/L	43.65 NTU	-102.4 mV	17.91 ft	250.00 ml/min
9/17/2024 1:15 PM	18:00	6.89 pH	14.20 °C	1.31 mS/cm	0.25 mg/L	42.90 NTU	-99.9 mV	17.91 ft	250.00 ml/min
9/17/2024 1:16 PM	19:48	6.90 pH	14.19 °C	1.31 mS/cm	0.24 mg/L	38.12 NTU	-99.7 mV	17.91 ft	250.00 ml/min

9/17/2024 1:18 PM	21:36	6.90 pH	14.22 °C	1.32 mS/cm	0.22 mg/L	31.64 NTU	-101.9 mV	17.91 ft	250.00 ml/min
9/17/2024 1:20 PM	23:24	6.89 pH	14.28 °C	1.31 mS/cm	0.22 mg/L	26.12 NTU	-98.3 mV	17.91 ft	250.00 ml/min
9/17/2024 1:22 PM	25:12	6.89 pH	14.23 °C	1.32 mS/cm	0.21 mg/L	20.78 NTU	-98.9 mV	17.91 ft	250.00 ml/min
9/17/2024 1:24 PM	27:00	6.89 pH	14.23 °C	1.32 mS/cm	0.20 mg/L	16.66 NTU	-100.3 mV	17.91 ft	250.00 ml/min
9/17/2024 1:25 PM	28:48	6.90 pH	14.37 °C	1.32 mS/cm	0.20 mg/L	14.27 NTU	-101.8 mV	17.91 ft	250.00 ml/min
9/17/2024 1:27 PM	30:36	6.90 pH	14.36 °C	1.32 mS/cm	0.19 mg/L	13.12 NTU	-101.8 mV	17.91 ft	250.00 ml/min
9/17/2024 1:29 PM	32:24	6.90 pH	14.42 °C	1.32 mS/cm	0.19 mg/L	12.07 NTU	-100.8 mV	17.91 ft	250.00 ml/min
9/17/2024 1:31 PM	34:12	6.90 pH	14.46 °C	1.32 mS/cm	0.19 mg/L	9.32 NTU	-105.4 mV	17.91 ft	250.00 ml/min
9/17/2024 1:33 PM	36:00	6.89 pH	14.49 °C	1.32 mS/cm	0.18 mg/L	10.88 NTU	-102.2 mV	17.91 ft	250.00 ml/min
9/17/2024 1:34 PM	37:48	6.90 pH	14.49 °C	1.32 mS/cm	0.18 mg/L	8.93 NTU	-103.4 mV	17.91 ft	250.00 ml/min
9/17/2024 1:36 PM	39:36	6.90 pH	14.68 °C	1.32 mS/cm	0.18 mg/L	7.85 NTU	-106.8 mV	17.91 ft	250.00 ml/min
9/17/2024 1:38 PM	41:24	6.90 pH	14.81 °C	1.32 mS/cm	0.20 mg/L	11.67 NTU	-104.0 mV	17.91 ft	250.00 ml/min
9/17/2024 1:40 PM	43:12	6.90 pH	14.99 °C	1.32 mS/cm	0.17 mg/L	6.36 NTU	-102.2 mV	17.91 ft	250.00 ml/min
9/17/2024 1:42 PM	45:00	6.90 pH	14.93 °C	1.32 mS/cm	0.18 mg/L	8.87 NTU	-104.9 mV	17.91 ft	250.00 ml/min
9/17/2024 1:43 PM	46:48	6.89 pH	15.10 °C	1.31 mS/cm	0.15 mg/L	8.14 NTU	-102.7 mV	17.91 ft	250.00 ml/min
9/17/2024 1:45 PM	48:36	6.90 pH	14.83 °C	1.32 mS/cm	0.14 mg/L	7.31 NTU	-102.3 mV	17.91 ft	250.00 ml/min
9/17/2024 1:47 PM	50:24	6.90 pH	14.90 °C	1.32 mS/cm	0.13 mg/L	5.23 NTU	-102.8 mV	17.91 ft	250.00 ml/min

Samples

Sample ID:	Description:
MW28-GW-0924	PME

Low-Flow Test Report:

Test Date / Time: 9/17/2024 2:06:53 PM

Project: Neal South MW-43

Operator Name: Thao Larson

Location Name: MW-43 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 16.4 ft Total Depth: 31.4 ft Initial Depth to Water: 19.16 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 29.4 ft Pump Intake From TOC: 29.4 ft Estimated Total Volume Pumped: 2240 ml Flow Cell Volume: 130 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.02 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1420

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 2:06 PM	00:00	6.97 pH	20.35 °C	1.52 mS/cm	2.17 mg/L	6.25 NTU	-140.7 mV	19.16 ft	200.00 ml/min
9/17/2024 2:08 PM	01:52	7.15 pH	16.53 °C	1.54 mS/cm	1.06 mg/L	1.10 NTU	-165.5 mV	19.16 ft	200.00 ml/min
9/17/2024 2:10 PM	03:44	7.18 pH	16.15 °C	1.55 mS/cm	1.03 mg/L	0.84 NTU	-169.5 mV	19.18 ft	200.00 ml/min
9/17/2024 2:12 PM	05:36	7.19 pH	15.96 °C	1.55 mS/cm	0.75 mg/L	0.95 NTU	-173.1 mV	19.18 ft	200.00 ml/min
9/17/2024 2:14 PM	07:28	7.21 pH	16.39 °C	1.55 mS/cm	0.65 mg/L	1.01 NTU	-175.1 mV	19.18 ft	200.00 ml/min
9/17/2024 2:16 PM	09:20	7.23 pH	16.48 °C	1.55 mS/cm	0.64 mg/L	0.96 NTU	-177.4 mV	19.18 ft	200.00 ml/min
9/17/2024 2:18 PM	11:12	7.25 pH	16.40 °C	1.54 mS/cm	0.62 mg/L	0.69 NTU	-178.7 mV	19.18 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW43-GW-0924	PME

Low-Flow Test Report:

Test Date / Time: 9/17/2024 2:33:37 PM

Project: Neal South MW-50

Operator Name: Thao Larson

Location Name: MW-50 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 11.2 ft Total Depth: 26.2 ft Initial Depth to Water: 13.88 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 24.2 ft Pump Intake From TOC: 24.2 ft Estimated Total Volume Pumped: 3556.667 ml Flow Cell Volume: 130 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.19 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1455

Weather Conditions:

Sunny 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 2:33 PM	00:00	6.84 pH	21.26 °C	1.51 mS/cm	3.00 mg/L	31.16 NTU	-41.4 mV	13.88 ft	200.00 ml/min
9/17/2024 2:35 PM	01:37	6.65 pH	17.93 °C	1.57 mS/cm	0.76 mg/L	30.21 NTU	-1.4 mV	14.06 ft	200.00 ml/min
9/17/2024 2:36 PM	03:14	6.62 pH	17.59 °C	1.58 mS/cm	0.59 mg/L	24.79 NTU	13.2 mV	14.06 ft	200.00 ml/min
9/17/2024 2:38 PM	04:51	6.62 pH	17.57 °C	1.58 mS/cm	0.53 mg/L	22.84 NTU	23.5 mV	14.06 ft	200.00 ml/min
9/17/2024 2:40 PM	06:28	6.63 pH	17.71 °C	1.58 mS/cm	0.49 mg/L	20.18 NTU	27.7 mV	14.06 ft	200.00 ml/min
9/17/2024 2:41 PM	08:05	6.64 pH	17.76 °C	1.58 mS/cm	0.46 mg/L	20.48 NTU	32.5 mV	14.07 ft	200.00 ml/min
9/17/2024 2:43 PM	09:42	6.66 pH	17.60 °C	1.57 mS/cm	0.36 mg/L	18.46 NTU	35.9 mV	14.07 ft	200.00 ml/min
9/17/2024 2:44 PM	11:19	6.68 pH	17.38 °C	1.56 mS/cm	0.29 mg/L	15.15 NTU	39.7 mV	14.07 ft	200.00 ml/min
9/17/2024 2:46 PM	12:56	6.68 pH	17.44 °C	1.55 mS/cm	0.28 mg/L	8.95 NTU	43.2 mV	14.07 ft	200.00 ml/min
9/17/2024 2:48 PM	14:33	6.69 pH	17.34 °C	1.55 mS/cm	0.26 mg/L	7.32 NTU	45.5 mV	14.07 ft	200.00 ml/min
9/17/2024 2:49 PM	16:10	6.69 pH	17.21 °C	1.56 mS/cm	0.24 mg/L	6.64 NTU	47.3 mV	14.07 ft	200.00 ml/min
9/17/2024 2:51 PM	17:47	6.68 pH	17.21 °C	1.56 mS/cm	0.22 mg/L	4.67 NTU	48.4 mV	14.07 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW50-GW-0924	PME
DP02-GW-0924	

Low-Flow Test Report:

Test Date / Time: 9/17/2024 2:38:54 PM

Project: Neal South MW-8

Operator Name: Paige Richards

Location Name: MW-8 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 9.7 ft Total Depth: 24.7 ft Initial Depth to Water: 14.5 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 23.3 ft Pump Intake From TOC: 25.3 ft Estimated Total Volume Pumped: 4425 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.01 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1530

Water visually clear

Weather Conditions:

Partly cloudy, 84 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 2:38 PM	00:00	6.82 pH	16.31 °C	1.39 mS/cm	1.80 mg/L	27.44 NTU	50.6 mV	14.50 ft	400.00 ml/min
9/17/2024 2:40 PM	01:58	6.76 pH	14.71 °C	1.41 mS/cm	0.15 mg/L	7.49 NTU	54.8 mV	14.50 ft	400.00 ml/min
9/17/2024 2:42 PM	03:56	6.70 pH	14.56 °C	1.41 mS/cm	0.09 mg/L	12.14 NTU	56.3 mV	15.56 ft	400.00 ml/min
9/17/2024 2:44 PM	05:54	6.67 pH	14.83 °C	1.41 mS/cm	0.07 mg/L	0.33 NTU	56.0 mV	15.56 ft	300.00 ml/min
9/17/2024 2:46 PM	07:52	6.67 pH	15.64 °C	1.41 mS/cm	0.11 mg/L	1.67 NTU	53.9 mV	15.51 ft	150.00 ml/min
9/17/2024 2:48 PM	09:50	6.72 pH	16.82 °C	1.42 mS/cm	0.69 mg/L	7.18 NTU	50.3 mV	15.51 ft	150.00 ml/min
9/17/2024 2:50 PM	11:48	6.74 pH	16.80 °C	1.42 mS/cm	0.24 mg/L	2.97 NTU	46.0 mV	15.51 ft	150.00 ml/min
9/17/2024 2:52 PM	13:46	6.76 pH	16.63 °C	1.42 mS/cm	0.16 mg/L	0.00 NTU	42.1 mV	15.51 ft	150.00 ml/min
9/17/2024 2:54 PM	15:44	6.77 pH	16.57 °C	1.42 mS/cm	0.15 mg/L	0.00 NTU	39.2 mV	15.51 ft	150.00 ml/min
9/17/2024 2:56 PM	17:42	6.78 pH	16.61 °C	1.42 mS/cm	0.14 mg/L	0.00 NTU	36.6 mV	14.51 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW08-GW-0924	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 9/17/2024 3:14:46 PM

Project: Neal South MW-51

Operator Name: Thao Larson

Location Name: MW-51 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 10.3 ft Total Depth: 25.3 ft Initial Depth to Water: 13.78 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 23.3 ft Pump Intake From TOC: 23.3 ft Estimated Total Volume Pumped: 3916.667 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.44 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1555

Weather Conditions:

Overcast 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 3:14 PM	00:00	6.81 pH	22.38 °C	1.34 mS/cm	2.01 mg/L	297.63 NTU	-11.8 mV	13.78 ft	200.00 ml/min
9/17/2024 3:16 PM	01:34	6.66 pH	17.61 °C	1.36 mS/cm	0.76 mg/L	171.36 NTU	-4.9 mV	14.06 ft	200.00 ml/min
9/17/2024 3:17 PM	03:08	6.64 pH	16.85 °C	1.37 mS/cm	0.55 mg/L	59.44 NTU	7.0 mV	14.11 ft	150.00 ml/min
9/17/2024 3:19 PM	04:42	6.61 pH	16.82 °C	1.38 mS/cm	0.48 mg/L	40.42 NTU	14.1 mV	14.13 ft	150.00 ml/min
9/17/2024 3:21 PM	06:16	6.59 pH	17.46 °C	1.38 mS/cm	0.48 mg/L	21.29 NTU	18.0 mV	14.14 ft	150.00 ml/min
9/17/2024 3:22 PM	07:50	6.60 pH	17.81 °C	1.38 mS/cm	0.48 mg/L	16.85 NTU	19.3 mV	14.17 ft	150.00 ml/min
9/17/2024 3:24 PM	09:24	6.61 pH	17.81 °C	1.38 mS/cm	0.45 mg/L	16.26 NTU	19.8 mV	14.19 ft	150.00 ml/min
9/17/2024 3:25 PM	10:58	6.62 pH	17.86 °C	1.38 mS/cm	0.43 mg/L	13.65 NTU	20.4 mV	14.20 ft	150.00 ml/min
9/17/2024 3:27 PM	12:32	6.64 pH	17.74 °C	1.38 mS/cm	0.42 mg/L	13.21 NTU	21.0 mV	14.20 ft	150.00 ml/min
9/17/2024 3:28 PM	14:06	6.66 pH	17.79 °C	1.38 mS/cm	0.41 mg/L	15.99 NTU	20.2 mV	14.20 ft	150.00 ml/min
9/17/2024 3:30 PM	15:40	6.67 pH	17.90 °C	1.38 mS/cm	0.39 mg/L	13.86 NTU	21.3 mV	14.20 ft	150.00 ml/min
9/17/2024 3:32 PM	17:14	6.68 pH	17.88 °C	1.38 mS/cm	0.38 mg/L	5.47 NTU	22.5 mV	14.20 ft	150.00 ml/min

9/17/2024 3:33 PM	18:48	6.68 pH	18.16 °C	1.38 mS/cm	0.37 mg/L	10.65 NTU	25.4 mV	14.20 ft	150.00 ml/min
9/17/2024 3:35 PM	20:22	6.69 pH	18.40 °C	1.38 mS/cm	0.36 mg/L	5.90 NTU	26.5 mV	14.21 ft	150.00 ml/min
9/17/2024 3:36 PM	21:56	6.70 pH	18.08 °C	1.38 mS/cm	0.35 mg/L	5.57 NTU	28.8 mV	14.22 ft	150.00 ml/min
9/17/2024 3:38 PM	23:30	6.70 pH	18.25 °C	1.38 mS/cm	0.34 mg/L	4.42 NTU	29.6 mV	14.22 ft	150.00 ml/min
9/17/2024 3:39 PM	25:04	6.71 pH	18.41 °C	1.38 mS/cm	0.34 mg/L	3.91 NTU	29.9 mV	14.22 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW51-GW-0924	PME
MW51-GW-0924 MS	
MW51-GW-0924 MSD	

Low-Flow Test Report:

Test Date / Time: 9/17/2024 3:32:33 PM

Project: Neal South MW-12

Operator Name: Paige Richards

Location Name: MW-12 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 25.8 ft Total Depth: 35.8 ft Initial Depth to Water: 26.52 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 31 ft Pump Intake From TOC: 33 ft Estimated Total Volume Pumped: 6148.333 ml Flow Cell Volume: 130 ml Final Flow Rate: 425 ml/min Final Draw Down: 0.04 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1615

Water visually clear

Weather Conditions:

Partly cloudy, 86 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 3:32 PM	00:00	6.47 pH	17.02 °C	1.62 mS/cm	1.80 mg/L	0.00 NTU	41.8 mV	26.52 ft	425.00 ml/min
9/17/2024 3:34 PM	02:04	6.41 pH	16.48 °C	1.66 mS/cm	0.79 mg/L	0.00 NTU	47.8 mV	26.52 ft	425.00 ml/min
9/17/2024 3:36 PM	04:08	6.37 pH	16.04 °C	1.67 mS/cm	0.70 mg/L	0.00 NTU	-47.1 mV	26.56 ft	425.00 ml/min
9/17/2024 3:38 PM	06:12	6.40 pH	14.50 °C	1.67 mS/cm	0.68 mg/L	0.00 NTU	-92.5 mV	26.56 ft	425.00 ml/min
9/17/2024 3:40 PM	08:16	6.41 pH	14.68 °C	1.66 mS/cm	0.63 mg/L	0.00 NTU	-83.6 mV	26.56 ft	425.00 ml/min
9/17/2024 3:42 PM	10:20	6.41 pH	14.64 °C	1.66 mS/cm	0.60 mg/L	0.00 NTU	-68.0 mV	26.56 ft	425.00 ml/min
9/17/2024 3:44 PM	12:24	6.39 pH	14.65 °C	1.66 mS/cm	0.58 mg/L	0.00 NTU	-60.5 mV	26.56 ft	425.00 ml/min
9/17/2024 3:47 PM	14:28	6.41 pH	14.51 °C	1.65 mS/cm	0.54 mg/L	0.00 NTU	-50.7 mV	26.56 ft	425.00 ml/min

Samples

Sample ID:	Description:
MW12-GW-0924	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 9/17/2024 4:02:50 PM

Project: Neal South MW-49

Operator Name: Thao Larson

Location Name: MW-49 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 11.1 ft Total Depth: 26.1 ft Initial Depth to Water: 14.12 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 24.1 ft Pump Intake From TOC: 24.1 ft Estimated Total Volume Pumped: 9600 ml Flow Cell Volume: 130 ml Final Flow Rate: 300 ml/min Final Draw Down: 0.02 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1640

Weather Conditions:

Overcast 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 4:02 PM	00:00	6.76 pH	21.44 °C	0.75 mS/cm	2.10 mg/L	200.07 NTU	-126.9 mV	14.12 ft	300.00 ml/min
9/17/2024 4:04 PM	01:36	7.06 pH	16.76 °C	0.66 mS/cm	0.33 mg/L	90.78 NTU	-149.7 mV	14.14 ft	300.00 ml/min
9/17/2024 4:06 PM	03:12	7.11 pH	16.29 °C	0.66 mS/cm	0.26 mg/L	37.32 NTU	-153.1 mV	14.14 ft	300.00 ml/min
9/17/2024 4:07 PM	04:48	7.10 pH	16.01 °C	0.65 mS/cm	0.19 mg/L	39.70 NTU	-153.7 mV	14.14 ft	300.00 ml/min
9/17/2024 4:09 PM	06:24	7.09 pH	15.97 °C	0.65 mS/cm	0.13 mg/L	17.64 NTU	-154.3 mV	14.14 ft	300.00 ml/min
9/17/2024 4:10 PM	08:00	7.09 pH	15.92 °C	0.65 mS/cm	0.11 mg/L	15.35 NTU	-155.4 mV	14.14 ft	300.00 ml/min
9/17/2024 4:12 PM	09:36	7.09 pH	15.91 °C	0.65 mS/cm	0.11 mg/L	17.31 NTU	-156.3 mV	14.14 ft	300.00 ml/min
9/17/2024 4:14 PM	11:12	7.10 pH	15.96 °C	0.65 mS/cm	0.09 mg/L	10.34 NTU	-157.9 mV	14.14 ft	300.00 ml/min
9/17/2024 4:15 PM	12:48	7.13 pH	15.79 °C	0.65 mS/cm	0.08 mg/L	10.18 NTU	-158.5 mV	14.14 ft	300.00 ml/min
9/17/2024 4:17 PM	14:24	7.13 pH	15.87 °C	0.65 mS/cm	0.07 mg/L	11.15 NTU	-158.8 mV	14.14 ft	300.00 ml/min
9/17/2024 4:18 PM	16:00	7.15 pH	15.88 °C	0.65 mS/cm	0.07 mg/L	7.90 NTU	-159.5 mV	14.14 ft	300.00 ml/min
9/17/2024 4:20 PM	17:36	7.16 pH	15.76 °C	0.65 mS/cm	0.07 mg/L	7.51 NTU	-159.9 mV	14.14 ft	300.00 ml/min

9/17/2024 4:22 PM	19:12	7.17 pH	15.64 °C	0.65 mS/cm	0.07 mg/L	10.14 NTU	-160.6 mV	14.14 ft	300.00 ml/min
9/17/2024 4:23 PM	20:48	7.16 pH	15.79 °C	0.65 mS/cm	0.07 mg/L	11.87 NTU	-161.2 mV	14.14 ft	300.00 ml/min
9/17/2024 4:25 PM	22:24	7.17 pH	15.72 °C	0.66 mS/cm	0.23 mg/L	8.37 NTU	-159.4 mV	14.14 ft	300.00 ml/min
9/17/2024 4:26 PM	24:00	7.17 pH	15.72 °C	0.65 mS/cm	0.22 mg/L	6.47 NTU	-157.8 mV	14.14 ft	300.00 ml/min
9/17/2024 4:28 PM	25:36	7.18 pH	15.55 °C	0.65 mS/cm	0.20 mg/L	6.87 NTU	-157.7 mV	14.14 ft	300.00 ml/min
9/17/2024 4:30 PM	27:12	7.18 pH	15.52 °C	0.66 mS/cm	0.17 mg/L	6.78 NTU	-157.6 mV	14.14 ft	300.00 ml/min
9/17/2024 4:31 PM	28:48	7.19 pH	15.48 °C	0.66 mS/cm	0.15 mg/L	6.03 NTU	-157.7 mV	14.14 ft	300.00 ml/min
9/17/2024 4:33 PM	30:24	7.20 pH	15.57 °C	0.66 mS/cm	0.15 mg/L	5.96 NTU	-157.5 mV	14.14 ft	300.00 ml/min
9/17/2024 4:34 PM	32:00	7.21 pH	15.74 °C	0.66 mS/cm	0.14 mg/L	4.88 NTU	-158.1 mV	14.14 ft	300.00 ml/min

Samples

Sample ID:	Description:
MW49-GW-0924	PME

Low-Flow Test Report:

Test Date / Time: 9/17/2024 4:07:18 PM

Project: Neal South MW-21

Operator Name: Paige Richards

Location Name: MW-21 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 8.2 ft Total Depth: 23.2 ft Initial Depth to Water: 12.84 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 19.2 ft Pump Intake From TOC: 21.2 ft Estimated Total Volume Pumped: 3929.167 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.36 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1655

Water visually clear

Weather Conditions:

Sunny, 87 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 4:07 PM	00:00	6.68 pH	18.10 °C	0.97 mS/cm	3.45 mg/L	6.50 NTU	-87.8 mV	12.84 ft	350.00 ml/min
9/17/2024 4:09 PM	01:55	6.53 pH	16.11 °C	0.94 mS/cm	0.18 mg/L	25.69 NTU	-92.4 mV	12.84 ft	350.00 ml/min
9/17/2024 4:11 PM	03:50	6.52 pH	15.86 °C	0.93 mS/cm	0.09 mg/L	16.41 NTU	-81.3 mV	13.37 ft	350.00 ml/min
9/17/2024 4:13 PM	05:45	6.46 pH	16.01 °C	0.93 mS/cm	0.07 mg/L	8.45 NTU	-62.1 mV	13.37 ft	275.00 ml/min
9/17/2024 4:14 PM	07:40	6.44 pH	16.55 °C	0.93 mS/cm	0.07 mg/L	4.60 NTU	-53.6 mV	13.37 ft	275.00 ml/min
9/17/2024 4:16 PM	09:35	6.47 pH	17.78 °C	0.94 mS/cm	0.12 mg/L	1.21 NTU	-52.9 mV	13.29 ft	150.00 ml/min
9/17/2024 4:18 PM	11:30	6.50 pH	18.15 °C	0.94 mS/cm	0.13 mg/L	0.00 NTU	-57.4 mV	13.29 ft	150.00 ml/min
9/17/2024 4:20 PM	13:25	6.55 pH	18.31 °C	0.94 mS/cm	0.13 mg/L	0.62 NTU	-57.8 mV	13.29 ft	150.00 ml/min
9/17/2024 4:22 PM	15:20	6.57 pH	18.30 °C	0.93 mS/cm	0.13 mg/L	0.33 NTU	-56.4 mV	13.20 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW21-GW-0924	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 9/17/2024 4:49:12 PM

Project: Neal South MW-52

Operator Name: Thao Larson

Location Name: MW-52 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 7.6 ft Total Depth: 25.6 ft Initial Depth to Water: 12.37 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 23.6 ft Pump Intake From TOC: 23.6 ft Estimated Total Volume Pumped: 4908.333 ml Flow Cell Volume: 130 ml Final Flow Rate: 200 ml/min Final Draw Down: 0.14 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1715

Weather Conditions:

Sunny 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 4:49 PM	00:00	6.85 pH	20.16 °C	1.30 mS/cm	2.89 mg/L	1,021.2 NTU	-36.2 mV	12.37 ft	300.00 ml/min
9/17/2024 4:50 PM	01:35	6.80 pH	16.29 °C	1.29 mS/cm	1.50 mg/L	433.81 NTU	-6.0 mV	12.55 ft	200.00 ml/min
9/17/2024 4:52 PM	03:10	6.76 pH	16.43 °C	1.29 mS/cm	1.31 mg/L	199.13 NTU	5.2 mV	12.52 ft	200.00 ml/min
9/17/2024 4:53 PM	04:45	6.73 pH	17.42 °C	1.30 mS/cm	1.35 mg/L	197.53 NTU	8.3 mV	12.51 ft	200.00 ml/min
9/17/2024 4:55 PM	06:20	6.72 pH	17.75 °C	1.30 mS/cm	1.26 mg/L	139.69 NTU	7.2 mV	12.51 ft	200.00 ml/min
9/17/2024 4:57 PM	07:55	6.74 pH	17.85 °C	1.29 mS/cm	1.16 mg/L	132.92 NTU	7.7 mV	12.51 ft	200.00 ml/min
9/17/2024 4:58 PM	09:30	6.74 pH	18.01 °C	1.29 mS/cm	1.13 mg/L	142.54 NTU	8.0 mV	12.51 ft	200.00 ml/min
9/17/2024 5:00 PM	11:05	7.10 pH	20.08 °C	0.00 mS/cm	6.81 mg/L	5.58 NTU	-11.6 mV	12.51 ft	200.00 ml/min
9/17/2024 5:01 PM	12:40	6.80 pH	18.08 °C	1.29 mS/cm	1.17 mg/L	23.22 NTU	4.1 mV	12.51 ft	200.00 ml/min
9/17/2024 5:03 PM	14:15	6.79 pH	18.02 °C	1.28 mS/cm	0.90 mg/L	13.70 NTU	8.3 mV	12.51 ft	200.00 ml/min
9/17/2024 5:05 PM	15:50	6.78 pH	18.27 °C	1.28 mS/cm	0.81 mg/L	10.45 NTU	11.0 mV	12.51 ft	200.00 ml/min
9/17/2024 5:06 PM	17:25	6.78 pH	18.02 °C	1.28 mS/cm	0.75 mg/L	8.73 NTU	12.1 mV	12.51 ft	200.00 ml/min

9/17/2024 5:08 PM	19:00	6.79 pH	18.12 °C	1.28 mS/cm	0.76 mg/L	8.46 NTU	12.4 mV	12.51 ft	200.00 ml/min
9/17/2024 5:09 PM	20:35	6.79 pH	18.14 °C	1.27 mS/cm	0.76 mg/L	6.92 NTU	12.5 mV	12.51 ft	200.00 ml/min
9/17/2024 5:11 PM	22:10	6.79 pH	18.02 °C	1.26 mS/cm	0.74 mg/L	5.00 NTU	12.4 mV	12.51 ft	200.00 ml/min
9/17/2024 5:12 PM	23:45	6.79 pH	18.32 °C	1.25 mS/cm	0.76 mg/L	4.15 NTU	12.4 mV	12.51 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW52-GW-0924	PME

Low-Flow Test Report:

Test Date / Time: 9/17/2024 4:59:24 PM

Project: Neal South MW-10

Operator Name: Paige Richards

Location Name: MW-10 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 10.6 ft Total Depth: 29.8 ft Initial Depth to Water: 19.23 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 27.3 ft Pump Intake From TOC: 29.3 ft Estimated Total Volume Pumped: 4840 ml Flow Cell Volume: 130 ml Final Flow Rate: 400 ml/min Final Draw Down: 0.02 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1730

Water visually clear

Weather Conditions:

Sunny, 87 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 4:59 PM	00:00	6.86 pH	19.24 °C	1.24 mS/cm	2.99 mg/L	154.24 NTU	-117.4 mV	19.23 ft	400.00 ml/min
9/17/2024 5:01 PM	02:01	6.91 pH	16.75 °C	1.27 mS/cm	0.53 mg/L	47.86 NTU	-145.9 mV	19.23 ft	400.00 ml/min
9/17/2024 5:03 PM	04:02	6.86 pH	15.76 °C	1.26 mS/cm	0.36 mg/L	20.19 NTU	-144.1 mV	19.25 ft	400.00 ml/min
9/17/2024 5:05 PM	06:03	6.83 pH	15.72 °C	1.26 mS/cm	0.32 mg/L	13.86 NTU	-141.6 mV	19.25 ft	400.00 ml/min
9/17/2024 5:07 PM	08:04	6.81 pH	15.78 °C	1.24 mS/cm	0.41 mg/L	10.46 NTU	-138.2 mV	19.25 ft	400.00 ml/min
9/17/2024 5:09 PM	10:05	6.81 pH	15.70 °C	1.23 mS/cm	0.37 mg/L	7.47 NTU	-135.9 mV	19.25 ft	400.00 ml/min
9/17/2024 5:11 PM	12:06	6.80 pH	15.79 °C	1.22 mS/cm	0.53 mg/L	4.92 NTU	-134.6 mV	19.25 ft	400.00 ml/min

Samples

Sample ID:	Description:
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MW10-GW-0924

1L plastic w/ nitric x2
1L plastic unpreserved x1
250mL plastic w/ nitric x1
250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 9/17/2024 5:29:53 PM

Project: Neal South MW-53

Operator Name: Thao Larson

Location Name: MW-53 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 8.2 ft Total Depth: 26.1 ft Initial Depth to Water: 12.34 ft	Pump Type: Peristaltic Pump Tubing Type: 1/4 ID Polyethylene Tubing Inner Diameter: 0.25 in Tubing Length: 24.1 ft Pump Intake From TOC: 24.1 ft Estimated Total Volume Pumped: 4320 ml Flow Cell Volume: 130 ml Final Flow Rate: 300 ml/min Final Draw Down: 0.04 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1750

Weather Conditions:

Sunny 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 5:29 PM	00:00	7.18 pH	20.51 °C	0.77 mS/cm	5.55 mg/L	4.31 NTU	-3.9 mV	12.34 ft	300.00 ml/min
9/17/2024 5:31 PM	01:36	7.04 pH	17.49 °C	0.83 mS/cm	5.20 mg/L	2.21 NTU	20.4 mV	12.38 ft	300.00 ml/min
9/17/2024 5:33 PM	03:12	7.00 pH	17.44 °C	0.84 mS/cm	5.18 mg/L	2.52 NTU	27.2 mV	12.38 ft	300.00 ml/min
9/17/2024 5:34 PM	04:48	6.99 pH	17.22 °C	0.84 mS/cm	5.15 mg/L	2.12 NTU	30.8 mV	12.38 ft	300.00 ml/min
9/17/2024 5:36 PM	06:24	6.98 pH	17.30 °C	0.84 mS/cm	5.12 mg/L	1.93 NTU	33.4 mV	12.38 ft	300.00 ml/min
9/17/2024 5:37 PM	08:00	6.99 pH	17.03 °C	0.84 mS/cm	5.13 mg/L	2.95 NTU	35.9 mV	12.38 ft	300.00 ml/min
9/17/2024 5:39 PM	09:36	6.99 pH	17.12 °C	0.84 mS/cm	5.16 mg/L	1.80 NTU	37.3 mV	12.38 ft	300.00 ml/min
9/17/2024 5:41 PM	11:12	6.99 pH	17.29 °C	0.84 mS/cm	5.14 mg/L	1.16 NTU	38.1 mV	12.38 ft	300.00 ml/min
9/17/2024 5:42 PM	12:48	7.01 pH	17.34 °C	0.84 mS/cm	5.14 mg/L	1.10 NTU	38.8 mV	12.38 ft	300.00 ml/min
9/17/2024 5:44 PM	14:24	7.01 pH	17.49 °C	0.84 mS/cm	5.13 mg/L	0.72 NTU	39.5 mV	12.38 ft	300.00 ml/min

Samples

Sample ID:	Description:
MW53-GW-0924	PME

Created using VuSitu from In-Situ, Inc.

Low-Flow Test Report:

Test Date / Time: 9/17/2024 5:36:43 PM

Project: Neal South MW-13

Operator Name: Paige Richards

Location Name: MW-13 Well Diameter: 2 in Casing Type: PVC Screen Length: 10 ft Top of Screen: 25.1 ft Total Depth: 35.1 ft Initial Depth to Water: 24.66 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 30.8 ft Pump Intake From TOC: 32.8 ft Estimated Total Volume Pumped: 2635 ml Flow Cell Volume: 130 ml Final Flow Rate: 425 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1805

Water visually clear

Weather Conditions:

Sunny, 86 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 5:36 PM	00:00	6.52 pH	17.59 °C	1.72 mS/cm	2.13 mg/L	7.36 NTU	8.4 mV	24.66 ft	425.00 ml/min
9/17/2024 5:38 PM	02:04	6.40 pH	15.97 °C	1.73 mS/cm	0.18 mg/L	4.74 NTU	27.3 mV	24.66 ft	425.00 ml/min
9/17/2024 5:40 PM	04:08	6.35 pH	15.92 °C	1.72 mS/cm	0.10 mg/L	1.72 NTU	34.8 mV	24.66 ft	425.00 ml/min
9/17/2024 5:42 PM	06:12	6.32 pH	15.91 °C	1.74 mS/cm	0.09 mg/L	0.07 NTU	39.1 mV	24.66 ft	425.00 ml/min

Samples

Sample ID:	Description:
MW13-GW-0924	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 9/17/2024 6:05:32 PM

Project: Neal South MW-11

Operator Name: Thao Larson

Location Name: MW-11 Well Diameter: 2 in Casing Type: PVC Screen Length: 25 ft Top of Screen: 12.1 ft Total Depth: 37.1 ft Initial Depth to Water: 20.33 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 32.8 ft Pump Intake From TOC: 34.8 ft Estimated Total Volume Pumped: 7500 ml Flow Cell Volume: 130 ml Final Flow Rate: 400 ml/min Final Draw Down: 0.05 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1835

Weather Conditions:

Sunny 71°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 6:05 PM	00:00	6.84 pH	18.89 °C	1.36 mS/cm	4.65 mg/L	1.57 NTU	19.1 mV	20.33 ft	400.00 ml/min
9/17/2024 6:07 PM	02:05	6.64 pH	14.31 °C	2.10 mS/cm	0.58 mg/L	0.80 NTU	64.3 mV	20.39 ft	400.00 ml/min
9/17/2024 6:09 PM	04:10	6.62 pH	13.56 °C	2.07 mS/cm	0.34 mg/L	0.64 NTU	74.8 mV	20.38 ft	400.00 ml/min
9/17/2024 6:11 PM	06:15	6.61 pH	13.67 °C	1.99 mS/cm	0.27 mg/L	0.62 NTU	80.4 mV	20.38 ft	400.00 ml/min
9/17/2024 6:13 PM	08:20	6.62 pH	13.73 °C	1.91 mS/cm	0.23 mg/L	0.52 NTU	83.9 mV	20.38 ft	400.00 ml/min
9/17/2024 6:15 PM	10:25	6.63 pH	13.52 °C	1.85 mS/cm	0.20 mg/L	0.54 NTU	86.5 mV	20.38 ft	400.00 ml/min
9/17/2024 6:18 PM	12:30	6.64 pH	13.60 °C	1.80 mS/cm	0.17 mg/L	0.49 NTU	88.2 mV	20.38 ft	400.00 ml/min
9/17/2024 6:20 PM	14:35	6.64 pH	13.63 °C	1.76 mS/cm	0.15 mg/L	0.46 NTU	89.6 mV	20.38 ft	400.00 ml/min
9/17/2024 6:22 PM	16:40	6.65 pH	13.54 °C	1.73 mS/cm	0.12 mg/L	0.47 NTU	90.9 mV	20.38 ft	400.00 ml/min
9/17/2024 6:24 PM	18:45	6.66 pH	13.55 °C	1.71 mS/cm	0.08 mg/L	0.48 NTU	91.8 mV	20.38 ft	400.00 ml/min

Samples

Sample ID:	Description:
MW11-GW-0924	

Low-Flow Test Report:

Test Date / Time: 9/17/2024 6:08:25 PM

Project: Neal South MW-14

Operator Name: Paige Richards

Location Name: MW-14 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 14.8 ft Total Depth: 29.8 ft Initial Depth to Water: 20.18 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 25.5 ft Pump Intake From TOC: 27.5 ft Estimated Total Volume Pumped: 2550 ml Flow Cell Volume: 130 ml Final Flow Rate: 425 ml/min Final Draw Down: 0.05 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1830

Water visually clear

Weather Conditions:

Sunny, 85 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/17/2024 6:08 PM	00:00	6.44 pH	18.54 °C	1.42 mS/cm	1.68 mg/L	0.00 NTU	31.8 mV	20.18 ft	425.00 ml/min
9/17/2024 6:10 PM	02:00	6.36 pH	15.89 °C	1.47 mS/cm	0.06 mg/L	0.00 NTU	43.1 mV	20.18 ft	425.00 ml/min
9/17/2024 6:12 PM	04:00	6.30 pH	15.76 °C	1.47 mS/cm	0.02 mg/L	0.00 NTU	47.3 mV	20.18 ft	425.00 ml/min
9/17/2024 6:14 PM	06:00	6.29 pH	15.74 °C	1.46 mS/cm	0.01 mg/L	0.00 NTU	49.8 mV	20.23 ft	425.00 ml/min

Samples

Sample ID:	Description:
MW14-GW-0924	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 9/18/2024 7:50:09 AM

Project: Neal South MW-16

Operator Name: Thao Larson

Location Name: MW-16 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 18.7 ft Total Depth: 33.7 ft Initial Depth to Water: 21.83 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 29.7 ft Pump Intake From TOC: 31.7 ft Estimated Total Volume Pumped: 4100 ml Flow Cell Volume: 130 ml Final Flow Rate: 400 ml/min Final Draw Down: -0.18 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 0820

Weather Conditions:

Overcast 70°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/18/2024 7:50 AM	00:00	6.52 pH	16.27 °C	1.13 mS/cm	6.12 mg/L	2.58 NTU	111.8 mV	21.63 ft	400.00 ml/min
9/18/2024 7:52 AM	02:03	6.83 pH	13.20 °C	1.17 mS/cm	1.19 mg/L	0.60 NTU	47.2 mV	21.67 ft	400.00 ml/min
9/18/2024 7:54 AM	04:06	6.84 pH	12.86 °C	1.16 mS/cm	0.81 mg/L	0.66 NTU	46.8 mV	21.67 ft	400.00 ml/min
9/18/2024 7:56 AM	06:09	6.84 pH	12.81 °C	1.14 mS/cm	0.90 mg/L	0.47 NTU	46.5 mV	21.67 ft	400.00 ml/min
9/18/2024 7:58 AM	08:12	6.84 pH	12.80 °C	1.13 mS/cm	0.96 mg/L	0.52 NTU	44.8 mV	21.65 ft	400.00 ml/min
9/18/2024 8:00 AM	10:15	6.84 pH	12.73 °C	1.12 mS/cm	1.01 mg/L	0.46 NTU	43.2 mV	21.65 ft	400.00 ml/min

Samples

Sample ID:	Description:
MW16-GW-0924	
MW16-GW-0924 MS	

Low-Flow Test Report:

Test Date / Time: 9/18/2024 8:31:39 AM

Project: Neal South MW-15

Operator Name: Paige Richards

Location Name: MW-15 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 10.2 ft Total Depth: 25.2 ft Initial Depth to Water: 15.25 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 20.9 ft Pump Intake From TOC: 22.9 ft Estimated Total Volume Pumped: 2632.5 ml Flow Cell Volume: 130 ml Final Flow Rate: 300 ml/min Final Draw Down: 0.05 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 0900

Water visually clear; black sediment in sample

Weather Conditions: Cloudy, 69 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/18/2024 8:31 AM	00:00	6.41 pH	18.52 °C	0.97 mS/cm	2.47 mg/L	14.17 NTU	132.5 mV	15.25 ft	450.00 ml/min
9/18/2024 8:33 AM	01:57	6.42 pH	21.77 °C	1.01 mS/cm	0.08 mg/L	15.65 NTU	116.9 mV	15.25 ft	300.00 ml/min
9/18/2024 8:35 AM	03:54	6.39 pH	21.48 °C	1.01 mS/cm	0.05 mg/L	9.30 NTU	110.9 mV	15.25 ft	300.00 ml/min
9/18/2024 8:37 AM	05:51	6.39 pH	21.55 °C	1.01 mS/cm	0.05 mg/L	6.43 NTU	106.0 mV	15.25 ft	300.00 ml/min
9/18/2024 8:39 AM	07:48	6.41 pH	21.62 °C	1.01 mS/cm	0.02 mg/L	2.66 NTU	100.7 mV	15.30 ft	300.00 ml/min

Samples

Sample ID:	Description:
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MW15-GW-0924

1L plastic w/ nitric x2
1L plastic unpreserved x1
250mL plastic w/ nitric x1
250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 9/18/2024 8:48:09 AM

Project: Neal South MW-2

Operator Name: Thao Larson

Location Name: MW-2 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 15.3 ft Total Depth: 30.3 ft Initial Depth to Water: 18.02 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 26 ft Pump Intake From TOC: 28 ft Estimated Total Volume Pumped: 11200 ml Flow Cell Volume: 130 ml Final Flow Rate: 400 ml/min Final Draw Down: 0.04 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 0935

Weather Conditions:

Overcast 70°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/18/2024 8:48 AM	00:00	6.89 pH	14.79 °C	1.22 mS/cm	4.22 mg/L	54.60 NTU	20.1 mV	18.02 ft	400.00 ml/min
9/18/2024 8:50 AM	02:00	6.73 pH	13.17 °C	1.24 mS/cm	1.19 mg/L	62.38 NTU	-56.6 mV	18.06 ft	400.00 ml/min
9/18/2024 8:52 AM	04:00	6.74 pH	13.03 °C	1.26 mS/cm	1.12 mg/L	39.16 NTU	-77.8 mV	18.06 ft	400.00 ml/min
9/18/2024 8:54 AM	06:00	6.76 pH	12.92 °C	1.26 mS/cm	1.13 mg/L	27.48 NTU	-87.9 mV	18.06 ft	400.00 ml/min
9/18/2024 8:56 AM	08:00	6.78 pH	12.90 °C	1.27 mS/cm	1.07 mg/L	19.51 NTU	-95.5 mV	18.08 ft	400.00 ml/min
9/18/2024 8:58 AM	10:00	6.80 pH	12.91 °C	1.28 mS/cm	1.07 mg/L	15.15 NTU	-100.5 mV	18.08 ft	400.00 ml/min
9/18/2024 9:00 AM	12:00	6.81 pH	12.89 °C	1.28 mS/cm	1.05 mg/L	13.01 NTU	-102.8 mV	18.06 ft	400.00 ml/min
9/18/2024 9:02 AM	14:00	6.82 pH	12.91 °C	1.29 mS/cm	1.01 mg/L	10.55 NTU	-103.9 mV	18.06 ft	400.00 ml/min
9/18/2024 9:04 AM	16:00	6.83 pH	12.89 °C	1.29 mS/cm	0.97 mg/L	7.51 NTU	-107.1 mV	18.06 ft	400.00 ml/min
9/18/2024 9:06 AM	18:00	6.84 pH	12.89 °C	1.29 mS/cm	0.97 mg/L	8.47 NTU	-106.4 mV	18.06 ft	400.00 ml/min
9/18/2024 9:08 AM	20:00	6.84 pH	12.90 °C	1.29 mS/cm	0.95 mg/L	6.29 NTU	-108.3 mV	18.06 ft	400.00 ml/min

9/18/2024 9:10 AM	22:00	6.86 pH	12.90 °C	1.29 mS/cm	0.93 mg/L	7.38 NTU	-110.2 mV	18.06 ft	400.00 ml/min
9/18/2024 9:12 AM	24:00	6.86 pH	12.92 °C	1.29 mS/cm	0.93 mg/L	6.70 NTU	-109.8 mV	18.06 ft	400.00 ml/min
9/18/2024 9:14 AM	26:00	6.86 pH	12.95 °C	1.29 mS/cm	1.00 mg/L	6.56 NTU	-109.4 mV	18.06 ft	400.00 ml/min
9/18/2024 9:16 AM	28:00	6.87 pH	12.93 °C	1.29 mS/cm	0.95 mg/L	4.15 NTU	-109.9 mV	18.06 ft	400.00 ml/min

Samples

Sample ID:	Description:
MW02-GW-0924	
DP02-GW-0924	

Low-Flow Test Report:

Test Date / Time: 9/18/2024 9:25:21 AM

Project: Neal South MW-20

Operator Name: Paige Richards

Location Name: MW-20 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 18.2 ft Total Depth: 33.2 ft Initial Depth to Water: 21.3 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 29.2 ft Pump Intake From TOC: 31.2 ft Estimated Total Volume Pumped: 4305 ml Flow Cell Volume: 130 ml Final Flow Rate: 300 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1000

Water visually clear, trace sediment

Weather Conditions:

Cloudy, 71 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/18/2024 9:25 AM	00:00	6.76 pH	23.37 °C	1.53 mS/cm	3.57 mg/L	37.73 NTU	-24.0 mV	21.30 ft	300.00 ml/min
9/18/2024 9:27 AM	02:03	6.74 pH	20.78 °C	1.51 mS/cm	0.17 mg/L	23.22 NTU	-90.9 mV	21.30 ft	300.00 ml/min
9/18/2024 9:29 AM	04:06	6.70 pH	14.29 °C	1.54 mS/cm	0.13 mg/L	29.80 NTU	-94.7 mV	21.30 ft	300.00 ml/min
9/18/2024 9:31 AM	06:09	6.69 pH	14.75 °C	1.53 mS/cm	0.08 mg/L	11.84 NTU	-94.8 mV	21.30 ft	300.00 ml/min
9/18/2024 9:33 AM	08:12	6.68 pH	14.73 °C	1.51 mS/cm	0.08 mg/L	7.53 NTU	-95.8 mV	21.30 ft	300.00 ml/min
9/18/2024 9:35 AM	10:15	6.68 pH	14.78 °C	1.50 mS/cm	0.13 mg/L	6.96 NTU	-97.7 mV	21.30 ft	300.00 ml/min
9/18/2024 9:37 AM	12:18	6.68 pH	15.30 °C	1.47 mS/cm	0.16 mg/L	1.73 NTU	-98.2 mV	21.30 ft	300.00 ml/min
9/18/2024 9:39 AM	14:21	6.69 pH	14.76 °C	1.49 mS/cm	0.18 mg/L	2.50 NTU	-98.5 mV	21.30 ft	300.00 ml/min

Samples

Sample ID:	Description:
MW20-GW-0924	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 9/18/2024 9:59:41 AM

Project: Neal South MW-17

Operator Name: Thao Larson

Location Name: MW-17 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 13.6 ft Total Depth: 28.6 ft Initial Depth to Water: 20.99 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 24.6 ft Pump Intake From TOC: 26.6 ft Estimated Total Volume Pumped: 5255.833 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 1.72 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1055

Weather Conditions:

Overcast 70°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/18/2024 9:59 AM	00:00	7.06 pH	15.19 °C	1.20 mS/cm	6.31 mg/L	29.36 NTU	-103.0 mV	20.99 ft	300.00 ml/min
9/18/2024 10:01 AM	01:59	7.01 pH	13.23 °C	1.19 mS/cm	1.13 mg/L	8.13 NTU	-128.8 mV	21.90 ft	250.00 ml/min
9/18/2024 10:03 AM	03:58	7.01 pH	13.13 °C	1.19 mS/cm	0.93 mg/L	9.51 NTU	-130.7 mV	21.97 ft	250.00 ml/min
9/18/2024 10:05 AM	05:57	7.02 pH	13.27 °C	1.19 mS/cm	0.85 mg/L	11.38 NTU	-131.0 mV	22.04 ft	200.00 ml/min
9/18/2024 10:07 AM	07:56	7.02 pH	13.41 °C	1.19 mS/cm	0.63 mg/L	15.00 NTU	-131.0 mV	22.10 ft	150.00 ml/min
9/18/2024 10:09 AM	09:55	7.01 pH	14.02 °C	1.19 mS/cm	0.63 mg/L	22.91 NTU	-129.9 mV	22.15 ft	150.00 ml/min
9/18/2024 10:11 AM	11:54	7.01 pH	14.34 °C	1.19 mS/cm	0.62 mg/L	22.44 NTU	-128.6 mV	22.24 ft	150.00 ml/min
9/18/2024 10:13 AM	13:53	7.02 pH	14.35 °C	1.19 mS/cm	0.59 mg/L	15.20 NTU	-127.3 mV	22.29 ft	150.00 ml/min
9/18/2024 10:15 AM	15:52	7.02 pH	14.28 °C	1.18 mS/cm	0.54 mg/L	16.05 NTU	-126.2 mV	22.39 ft	150.00 ml/min
9/18/2024 10:17 AM	17:51	7.02 pH	14.24 °C	1.18 mS/cm	0.50 mg/L	9.30 NTU	-125.7 mV	22.47 ft	150.00 ml/min
9/18/2024 10:19 AM	19:50	7.02 pH	14.26 °C	1.18 mS/cm	0.48 mg/L	7.27 NTU	-125.6 mV	22.51 ft	150.00 ml/min

9/18/2024 10:21 AM	21:49	7.02 pH	14.36 °C	1.18 mS/cm	0.41 mg/L	7.18 NTU	-125.7 mV	22.59 ft	150.00 ml/min
9/18/2024 10:23 AM	23:48	7.02 pH	14.35 °C	1.18 mS/cm	0.35 mg/L	7.60 NTU	-125.7 mV	22.59 ft	150.00 ml/min
9/18/2024 10:25 AM	25:47	7.02 pH	14.34 °C	1.18 mS/cm	0.32 mg/L	5.97 NTU	-125.8 mV	22.59 ft	150.00 ml/min
9/18/2024 10:27 AM	27:46	7.02 pH	14.36 °C	1.18 mS/cm	0.30 mg/L	6.36 NTU	-126.0 mV	22.63 ft	150.00 ml/min
9/18/2024 10:29 AM	29:45	7.02 pH	14.46 °C	1.18 mS/cm	0.35 mg/L	5.90 NTU	-126.9 mV	22.71 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW17-GW-0924	

Low-Flow Test Report:

Test Date / Time: 9/18/2024 10:05:23 AM

Project: Neal South MW-19

Operator Name: Paige Richards

Location Name: MW-19 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 18.6 ft Total Depth: 33.6 ft Initial Depth to Water: 20.48 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 29.6 ft Pump Intake From TOC: 31.6 ft Estimated Total Volume Pumped: 4100 ml Flow Cell Volume: 130 ml Final Flow Rate: 400 ml/min Final Draw Down: 0 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1030

Water visually clear

Weather Conditions:

Cloudy, 72 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3%	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/18/2024 10:05 AM	00:00	6.52 pH	23.89 °C	1.65 mS/cm	2.84 mg/L	0.00 NTU	19.5 mV	20.48 ft	400.00 ml/min
9/18/2024 10:07 AM	02:03	6.44 pH	22.98 °C	1.65 mS/cm	0.18 mg/L	0.00 NTU	33.7 mV	20.48 ft	400.00 ml/min
9/18/2024 10:09 AM	04:06	6.40 pH	21.14 °C	1.64 mS/cm	0.14 mg/L	0.00 NTU	39.0 mV	20.48 ft	400.00 ml/min
9/18/2024 10:11 AM	06:09	6.38 pH	14.12 °C	1.68 mS/cm	0.19 mg/L	0.00 NTU	42.0 mV	20.48 ft	400.00 ml/min
9/18/2024 10:13 AM	08:12	6.37 pH	14.09 °C	1.68 mS/cm	0.19 mg/L	0.00 NTU	43.8 mV	20.48 ft	400.00 ml/min
9/18/2024 10:15 AM	10:15	6.37 pH	14.10 °C	1.68 mS/cm	0.20 mg/L	0.00 NTU	42.6 mV	20.48 ft	400.00 ml/min

Samples

Sample ID:	Description:
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MW19-GW-0924

1L plastic w/ nitric x2
1L plastic unpreserved x1
250mL plastic w/ nitric x1
250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 9/18/2024 10:52:46 AM

Project: Neal South MW-18

Operator Name: Paige Richards

Location Name: MW-18 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 13.5 ft Total Depth: 28.5 ft Initial Depth to Water: 15.85 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 24.5 ft Pump Intake From TOC: 26.5 ft Estimated Total Volume Pumped: 6346.667 ml Flow Cell Volume: 130 ml Final Flow Rate: 150 ml/min Final Draw Down: 0.04 ft	Instrument Used: Aqua TROLL 600 Serial Number: 809048
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Test Notes:

Sample time: 1215

Water visually clear

Weather Conditions:

Cloudy, 73 degrees F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/18/2024 10:52 AM	00:00	6.62 pH	14.40 °C	1.18 mS/cm	0.89 mg/L	50.00 NTU	-81.6 mV	15.85 ft	400.00 ml/min
9/18/2024 10:54 AM	01:59	6.67 pH	16.00 °C	1.17 mS/cm	0.19 mg/L	44.76 NTU	-88.6 mV	15.92 ft	250.00 ml/min
9/18/2024 10:56 AM	03:58	6.68 pH	20.90 °C	1.05 mS/cm	0.14 mg/L	37.43 NTU	-92.2 mV	15.92 ft	150.00 ml/min
9/18/2024 10:58 AM	05:57	6.69 pH	21.30 °C	1.17 mS/cm	0.16 mg/L	29.58 NTU	-95.1 mV	15.92 ft	150.00 ml/min
9/18/2024 11:00 AM	07:56	6.71 pH	20.05 °C	1.14 mS/cm	0.16 mg/L	28.29 NTU	-97.4 mV	15.92 ft	150.00 ml/min
9/18/2024 11:02 AM	09:55	6.73 pH	20.00 °C	1.15 mS/cm	0.14 mg/L	23.88 NTU	-98.8 mV	15.89 ft	150.00 ml/min
9/18/2024 11:04 AM	11:54	6.74 pH	20.91 °C	1.12 mS/cm	0.13 mg/L	21.20 NTU	-99.6 mV	15.89 ft	150.00 ml/min
9/18/2024 11:06 AM	13:53	6.75 pH	21.20 °C	1.16 mS/cm	0.12 mg/L	18.02 NTU	-100.4 mV	15.89 ft	150.00 ml/min
9/18/2024 11:08 AM	15:52	6.75 pH	17.16 °C	1.16 mS/cm	0.15 mg/L	16.20 NTU	-101.4 mV	15.89 ft	150.00 ml/min
9/18/2024 11:10 AM	17:51	6.75 pH	16.95 °C	1.16 mS/cm	0.14 mg/L	16.29 NTU	-100.9 mV	15.89 ft	150.00 ml/min

9/18/2024 11:12 AM	19:50	6.75 pH	16.63 °C	1.17 mS/cm	0.14 mg/L	15.48 NTU	-101.2 mV	15.89 ft	150.00 ml/min
9/18/2024 11:14 AM	21:49	6.75 pH	19.56 °C	1.14 mS/cm	0.10 mg/L	10.54 NTU	-101.2 mV	15.89 ft	150.00 ml/min
9/18/2024 11:16 AM	23:48	6.75 pH	18.73 °C	1.15 mS/cm	0.10 mg/L	11.24 NTU	-101.4 mV	15.89 ft	150.00 ml/min
9/18/2024 11:18 AM	25:47	6.75 pH	18.53 °C	1.12 mS/cm	0.10 mg/L	10.95 NTU	-101.8 mV	15.89 ft	150.00 ml/min
9/18/2024 11:20 AM	27:46	6.75 pH	22.71 °C	1.16 mS/cm	0.06 mg/L	10.99 NTU	-101.4 mV	15.89 ft	150.00 ml/min
9/18/2024 11:22 AM	29:45	6.74 pH	22.57 °C	1.17 mS/cm	0.06 mg/L	9.02 NTU	-101.5 mV	15.89 ft	150.00 ml/min
9/18/2024 11:24 AM	31:44	6.70 pH	20.90 °C	1.07 mS/cm	0.07 mg/L	8.75 NTU	-101.2 mV	15.89 ft	150.00 ml/min
9/18/2024 11:26 AM	33:43	6.75 pH	20.82 °C	1.07 mS/cm	0.07 mg/L	6.49 NTU	-104.0 mV	15.89 ft	150.00 ml/min
9/18/2024 11:28 AM	35:42	6.75 pH	19.81 °C	1.09 mS/cm	0.07 mg/L	6.12 NTU	-103.9 mV	15.89 ft	150.00 ml/min
9/18/2024 11:30 AM	37:41	6.74 pH	21.74 °C	1.07 mS/cm	0.06 mg/L	4.54 NTU	-103.5 mV	15.89 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW18-GW-0924	1L plastic w/ nitric x2 1L plastic unpreserved x1 250mL plastic w/ nitric x1 250mL plastic unpreserved x1

Low-Flow Test Report:

Test Date / Time: 9/18/2024 11:17:29 AM

Project: Neal South MW-4

Operator Name: Thao Larson

Location Name: MW-4 Well Diameter: 2 in Casing Type: PVC Screen Length: 15 ft Top of Screen: 11.7 ft Total Depth: 26.7 ft Initial Depth to Water: 15.64 ft	Pump Type: Solinst Model 407 Bladder Pump Tubing Type: Teflon-lined 1/4" x 1/4" twin-bonded tubing Tubing Inner Diameter: 0.125 in Tubing Length: 22.4 ft Pump Intake From TOC: 24.4 ft Estimated Total Volume Pumped: 13963.333 ml Flow Cell Volume: 130 ml Final Flow Rate: 300 ml/min Final Draw Down: 0.01 ft	Instrument Used: Aqua TROLL 600 Serial Number: 955645
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Test Notes:

Sample time 1210

Weather Conditions:

Overcast 70°F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth to Water	Flow
		+/- 0.2	+/- 0.2	+/- 3 %	+/- 0.2	+/- 10	+/- 20	+/- 5	
9/18/2024 11:17 AM	00:00	7.06 pH	15.78 °C	0.94 mS/cm	4.98 mg/L	3.56 NTU	-36.4 mV	15.64 ft	400.00 ml/min
9/18/2024 11:19 AM	01:58	6.95 pH	12.94 °C	0.88 mS/cm	0.79 mg/L	0.88 NTU	-61.7 mV	15.66 ft	400.00 ml/min
9/18/2024 11:21 AM	03:56	6.94 pH	14.10 °C	0.88 mS/cm	0.55 mg/L	0.68 NTU	-63.8 mV	15.66 ft	400.00 ml/min
9/18/2024 11:23 AM	05:54	6.96 pH	14.98 °C	0.89 mS/cm	0.60 mg/L	0.61 NTU	-66.5 mV	15.66 ft	400.00 ml/min
9/18/2024 11:25 AM	07:52	6.98 pH	15.72 °C	0.89 mS/cm	0.70 mg/L	0.59 NTU	-68.5 mV	15.66 ft	400.00 ml/min
9/18/2024 11:27 AM	09:50	7.01 pH	14.99 °C	0.88 mS/cm	1.06 mg/L	2.84 NTU	-70.2 mV	15.66 ft	400.00 ml/min
9/18/2024 11:29 AM	11:48	7.01 pH	13.55 °C	0.88 mS/cm	0.31 mg/L	4.80 NTU	-72.1 mV	15.66 ft	400.00 ml/min
9/18/2024 11:31 AM	13:46	7.00 pH	13.73 °C	0.88 mS/cm	0.31 mg/L	24.27 NTU	-71.8 mV	15.65 ft	400.00 ml/min
9/18/2024 11:33 AM	15:44	7.00 pH	14.77 °C	0.89 mS/cm	0.32 mg/L	28.59 NTU	-73.2 mV	15.65 ft	400.00 ml/min
9/18/2024 11:35 AM	17:42	7.01 pH	15.49 °C	0.89 mS/cm	0.37 mg/L	26.70 NTU	-75.2 mV	15.65 ft	400.00 ml/min
9/18/2024 11:37 AM	19:40	7.01 pH	16.06 °C	0.89 mS/cm	0.38 mg/L	26.76 NTU	-76.4 mV	15.65 ft	400.00 ml/min

9/18/2024 11:39 AM	21:38	7.01 pH	16.62 °C	0.89 mS/cm	0.43 mg/L	24.35 NTU	-77.1 mV	15.65 ft	400.00 ml/min
9/18/2024 11:41 AM	23:36	7.00 pH	17.17 °C	0.89 mS/cm	0.47 mg/L	21.98 NTU	-77.5 mV	15.65 ft	400.00 ml/min
9/18/2024 11:43 AM	25:34	7.00 pH	17.65 °C	0.89 mS/cm	0.51 mg/L	20.02 NTU	-77.8 mV	15.65 ft	400.00 ml/min
9/18/2024 11:45 AM	27:32	6.99 pH	17.93 °C	0.89 mS/cm	0.52 mg/L	29.94 NTU	-78.2 mV	15.65 ft	300.00 ml/min
9/18/2024 11:46 AM	29:30	7.00 pH	13.35 °C	0.88 mS/cm	0.34 mg/L	45.94 NTU	-74.2 mV	15.65 ft	300.00 ml/min
9/18/2024 11:48 AM	31:28	6.97 pH	12.81 °C	0.89 mS/cm	0.10 mg/L	3.18 NTU	-70.9 mV	15.65 ft	300.00 ml/min
9/18/2024 11:50 AM	33:26	6.97 pH	12.91 °C	0.89 mS/cm	0.07 mg/L	1.55 NTU	-72.2 mV	15.65 ft	300.00 ml/min
9/18/2024 11:52 AM	35:24	6.98 pH	13.04 °C	0.89 mS/cm	0.06 mg/L	1.15 NTU	-73.2 mV	15.65 ft	300.00 ml/min
9/18/2024 11:54 AM	37:22	6.99 pH	13.00 °C	0.90 mS/cm	0.05 mg/L	0.87 NTU	-73.4 mV	15.65 ft	300.00 ml/min

Samples

Sample ID:	Description:
MW04-GW-0924	

Appendix C

Laboratory Analytical Reports



ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 4/29/2024 1:38:22 PM

JOB DESCRIPTION

MEC Neal South Monofill CCR

JOB NUMBER

310-276843-1

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Client Service Manager
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Case Narrative

Client: GHD Services Inc.
Project: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Job ID: 310-276843-1

Eurofins Cedar Falls

Job Narrative 310-276843-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 3/14/2024 4:55 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 2.3°C, 3.1°C, 3.8°C, 4.1°C and 4.2°C.

HPLC/IC

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW14-GW-0324 (310-276843-8) and MW16-GW-0324 (310-276843-10). Elevated reporting limits (RLs) are provided.

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW02-GW-0324 (310-276843-1), MW04-GW-0324 (310-276843-2), MW12-GW-0324 (310-276843-6), MW13-GW-0324 (310-276843-7), MW17-GW-0324 (310-276843-11), MW18-GW-0324 (310-276843-12), MW19-GW-0324 (310-276843-13), MW20-GW-0324 (310-276843-14) and DP01-GW-0324 (310-276843-16). Elevated reporting limits (RLs) are provided.

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW08-GW-0324 (310-276843-3), MW10-GW-0324 (310-276843-4), MW11-GW-0324 (310-276843-5), MW15-GW-0324 (310-276843-9) and MW21-GW-0324 (310-276843-15). Elevated reporting limits (RLs) are provided.

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

Metals

Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: MW14-GW-0324 (310-276843-8). The sample(s) was preserved to the appropriate pH in the laboratory.

Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: MW15-GW-0324 (310-276843-9). The sample(s) was preserved to the appropriate pH in the laboratory.

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

General Chemistry

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

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Case Narrative

Client: GHD Services Inc.
Project: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Job ID: 310-276843-2

Eurofins Cedar Falls

Job Narrative 310-276843-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 3/14/2024 4:55 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 2.3°C, 3.1°C, 3.8°C, 4.1°C and 4.2°C.

Gas Flow Proportional Counter

Method 9315_Ra226: Radium 226 prep batch 160-653036

The barium carrier recovery is outside the lower control limit (30%) for the following samples: MW13-GW-0324 (310-276843-7) and MW14-GW-0324 (310-276843-8). There was physical evidence of matrix interference apparent during the initial preparation of one sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Method 9315_Ra226: Radium 226 Batch 653036

The detection goal was not met for the following sample due to the presence of matrix interferences: MW14-GW-0324 (310-276843-8). Analytical results are reported with the detection limit achieved.

Method 9315_Ra226: Radium 226 Batch 653036

The Barium carrier recovery is outside the lower control limit (30%) for the following sample: MW14-GW-0324 (310-276843-8). There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Method 9315_Ra226: Radium 226 Batch 653036

The following sample had Barium recovery below the QC limit: MW13-GW-0324 (310-276843-7). The detection limit was achieved, so the laboratory does not believe this excursion adversely affects the data. Therefore, the data have been reported with this narrative.

Method 9320_Ra228: Radium 228 prep batch 160-653037

The barium carrier recovery is outside the lower control limit (30%) for the following samples: MW13-GW-0324 (310-276843-7) and MW14-GW-0324 (310-276843-8). There was physical evidence of matrix interference apparent during the initial preparation of the one sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Method 9320_Ra228: Radium-228 prep batch 160-653037:

The detection goal was not met for the following sample due to the reduced sample volume attributed to the presence of matrix interferences: MW14-GW-0324 (310-276843-8). Analytical results are reported with the detection limit achieved.

Method 9320_Ra228: Radium-228 prep batch 160-653037:

The Ba carrier recovery is outside the lower control limit (30%) for the following sample: MW14-GW-0324 (310-276843-8). There

Eurofins Cedar Falls

Case Narrative

Client: GHD Services Inc.
Project: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Job ID: 310-276843-2 (Continued)

Eurofins Cedar Falls

was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

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

Rad

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

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Sample Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-276843-1	MW02-GW-0324	Water	03/12/24 15:45	03/14/24 16:55
310-276843-2	MW04-GW-0324	Water	03/12/24 11:15	03/14/24 16:55
310-276843-3	MW08-GW-0324	Water	03/13/24 09:00	03/14/24 16:55
310-276843-4	MW10-GW-0324	Water	03/13/24 11:05	03/14/24 16:55
310-276843-5	MW11-GW-0324	Water	03/13/24 11:30	03/14/24 16:55
310-276843-6	MW12-GW-0324	Water	03/12/24 18:00	03/14/24 16:55
310-276843-7	MW13-GW-0324	Water	03/12/24 17:05	03/14/24 16:55
310-276843-8	MW14-GW-0324	Water	03/11/24 18:30	03/14/24 16:55
310-276843-9	MW15-GW-0324	Water	03/13/24 10:10	03/14/24 16:55
310-276843-10	MW16-GW-0324	Water	03/11/24 17:10	03/14/24 16:55
310-276843-11	MW17-GW-0324	Water	03/12/24 14:43	03/14/24 16:55
310-276843-12	MW18-GW-0324	Water	03/12/24 13:10	03/14/24 16:55
310-276843-13	MW19-GW-0324	Water	03/12/24 08:40	03/14/24 16:55
310-276843-14	MW20-GW-0324	Water	03/12/24 10:20	03/14/24 16:55
310-276843-15	MW21-GW-0324	Water	03/13/24 11:00	03/14/24 16:55
310-276843-16	DP01-GW-0324	Water	03/12/24 00:00	03/14/24 16:55



Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW02-GW-0324

Lab Sample ID: 310-276843-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	205		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0182		0.00200		mg/L	1		6020B	Total/NA
Barium	0.217		0.00200		mg/L	1		6020B	Total/NA
Boron	0.631		0.100		mg/L	1		6020B	Total/NA
Calcium	216		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00547		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.120		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	880		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.5	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW04-GW-0324

Lab Sample ID: 310-276843-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	29.6		5.00		mg/L	5		9056A	Total/NA
Sulfate	143		5.00		mg/L	5		9056A	Total/NA
Barium	0.0578		0.00200		mg/L	1		6020B	Total/NA
Boron	0.223		0.100		mg/L	1		6020B	Total/NA
Calcium	125		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00196		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0639		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	596		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.5	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW08-GW-0324

Lab Sample ID: 310-276843-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	448		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00217		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0934		0.00200		mg/L	1		6020B	Total/NA
Boron	3.27		0.100		mg/L	1		6020B	Total/NA
Calcium	209		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00109		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.137		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00695		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.145		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1170		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW10-GW-0324

Lab Sample ID: 310-276843-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.09		5.00		mg/L	5		9056A	Total/NA
Sulfate	137		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0467		0.00200		mg/L	1		6020B	Total/NA
Barium	0.463		0.00200		mg/L	1		6020B	Total/NA
Boron	0.545		0.100		mg/L	1		6020B	Total/NA
Calcium	164		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00115		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.109		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00335		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	818		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.6	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW11-GW-0324

Lab Sample ID: 310-276843-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17.1		5.00		mg/L	5		9056A	Total/NA
Sulfate	353		5.00		mg/L	5		9056A	Total/NA
Barium	0.0466		0.00200		mg/L	1		6020B	Total/NA
Boron	0.367		0.100		mg/L	1		6020B	Total/NA
Calcium	206		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00606		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.114		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1000		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.5	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW12-GW-0324

Lab Sample ID: 310-276843-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	38.5		5.00		mg/L	5		9056A	Total/NA
Sulfate	594		20.0		mg/L	20		9056A	Total/NA
Barium	0.0499		0.00200		mg/L	1		6020B	Total/NA
Boron	1.13		0.100		mg/L	1		6020B	Total/NA
Calcium	261		0.500		mg/L	1		6020B	Total/NA
Lithium	0.152		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.293		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1320		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW13-GW-0324

Lab Sample ID: 310-276843-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11.5		5.00		mg/L	5		9056A	Total/NA
Sulfate	558		20.0		mg/L	20		9056A	Total/NA
Barium	0.0354		0.00200		mg/L	1		6020B	Total/NA
Boron	1.80		0.100		mg/L	1		6020B	Total/NA
Calcium	244		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00112		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.112		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.00751		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1310		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW14-GW-0324

Lab Sample ID: 310-276843-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.41		5.00		mg/L	5		9056A	Total/NA
Sulfate	236		5.00		mg/L	5		9056A	Total/NA
Barium	0.0731		0.00200		mg/L	1		6020B	Total/NA
Boron	0.332		0.100		mg/L	1		6020B	Total/NA
Calcium	220		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00277		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.137		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	942		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW15-GW-0324

Lab Sample ID: 310-276843-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	26.1		5.00		mg/L	5		9056A	Total/NA
Sulfate	374		5.00		mg/L	5		9056A	Total/NA
Barium	0.0665		0.00200		mg/L	1		6020B	Total/NA
Boron	0.960		0.100		mg/L	1		6020B	Total/NA
Calcium	208		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00113		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0754		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.0677		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1140		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW16-GW-0324

Lab Sample ID: 310-276843-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.08		5.00		mg/L	5		9056A	Total/NA
Sulfate	38.2		5.00		mg/L	5		9056A	Total/NA
Barium	0.266	F1	0.00200		mg/L	1		6020B	Total/NA
Boron	0.184		0.100		mg/L	1		6020B	Total/NA
Calcium	142		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00111		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0573		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.0214		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	600		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.6	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW17-GW-0324

Lab Sample ID: 310-276843-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	14.7		5.00		mg/L	5		9056A	Total/NA
Sulfate	97.1		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0157		0.00200		mg/L	1		6020B	Total/NA
Barium	0.105		0.00200		mg/L	1		6020B	Total/NA
Boron	0.194		0.100		mg/L	1		6020B	Total/NA
Calcium	161		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000878		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0780		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00283		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	658		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.5	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW18-GW-0324

Lab Sample ID: 310-276843-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	90.9		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0260		0.00200		mg/L	1		6020B	Total/NA
Barium	0.120		0.00200		mg/L	1		6020B	Total/NA
Boron	0.215		0.100		mg/L	1		6020B	Total/NA
Calcium	180		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00277		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.132		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00206		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	802		50.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW18-GW-0324 (Continued)

Lab Sample ID: 310-276843-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	7.6	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW19-GW-0324

Lab Sample ID: 310-276843-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	57.0		5.00		mg/L	5		9056A	Total/NA
Sulfate	244		5.00		mg/L	5		9056A	Total/NA
Barium	0.139		0.00200		mg/L	1		6020B	Total/NA
Boron	0.466		0.100		mg/L	1		6020B	Total/NA
Calcium	247		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00636		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.144		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1110		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.5	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW20-GW-0324

Lab Sample ID: 310-276843-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	156		5.00		mg/L	5		9056A	Total/NA
Sulfate	181		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0167		0.00200		mg/L	1		6020B	Total/NA
Barium	0.159		0.00200		mg/L	1		6020B	Total/NA
Boron	0.909		0.100		mg/L	1		6020B	Total/NA
Calcium	205		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00142		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0921		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1000		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.5	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW21-GW-0324

Lab Sample ID: 310-276843-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.82		5.00		mg/L	5		9056A	Total/NA
Sulfate	17.4		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00680		0.00200		mg/L	1		6020B	Total/NA
Barium	0.483		0.00200		mg/L	1		6020B	Total/NA
Boron	0.164		0.100		mg/L	1		6020B	Total/NA
Calcium	152		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00543		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0711		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	498		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.6	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: DP01-GW-0324

Lab Sample ID: 310-276843-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	201		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0188		0.00200		mg/L	1		6020B	Total/NA
Barium	0.219		0.00200		mg/L	1		6020B	Total/NA
Boron	0.602		0.100		mg/L	1		6020B	Total/NA
Calcium	218		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00562		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.111		0.0100		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: DP01-GW-0324 (Continued)

Lab Sample ID: 310-276843-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	864		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.6	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

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This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW02-GW-0324

Lab Sample ID: 310-276843-1

Date Collected: 03/12/24 15:45

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			03/18/24 16:13	5
Sulfate	205		5.00		mg/L			03/18/24 16:13	5
Fluoride	<1.00		1.00		mg/L			03/18/24 16:13	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 16:57	1
Arsenic	0.0182		0.00200		mg/L		03/18/24 09:00	03/18/24 18:13	1
Barium	0.217		0.00200		mg/L		03/18/24 09:00	03/18/24 18:13	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 16:57	1
Boron	0.631		0.100		mg/L		03/18/24 09:00	03/19/24 16:57	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:13	1
Calcium	216		0.500		mg/L		03/18/24 09:00	03/18/24 18:13	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:13	1
Cobalt	0.00547		0.000500		mg/L		03/18/24 09:00	03/18/24 18:13	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:13	1
Lithium	0.120		0.0100		mg/L		03/18/24 09:00	03/19/24 16:57	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:13	1
Selenium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:13	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:13	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	880		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.5	HF	1.0		SU			03/14/24 20:15	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	0.273		0.181	0.183	1.00	0.255	pCi/L	03/19/24 10:32	04/11/24 21:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	71.9		30 - 110					03/19/24 10:32	04/11/24 21:47	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	0.838		0.500	0.506	1.00	0.732	pCi/L	03/19/24 10:38	04/09/24 11:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	71.9		30 - 110					03/19/24 10:38	04/09/24 11:56	1
Y Carrier	84.9		30 - 110					03/19/24 10:38	04/09/24 11:56	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW02-GW-0324

Lab Sample ID: 310-276843-1

Date Collected: 03/12/24 15:45

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	1.11		0.532	0.538	5.00	0.732	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW04-GW-0324

Lab Sample ID: 310-276843-2

Date Collected: 03/12/24 11:15

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29.6		5.00		mg/L			03/18/24 16:53	5
Sulfate	143		5.00		mg/L			03/18/24 16:53	5
Fluoride	<1.00		1.00		mg/L			03/18/24 16:53	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 16:59	1
Arsenic	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:15	1
Barium	0.0578		0.00200		mg/L		03/18/24 09:00	03/18/24 18:15	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 16:59	1
Boron	0.223		0.100		mg/L		03/18/24 09:00	03/19/24 16:59	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:15	1
Calcium	125		0.500		mg/L		03/18/24 09:00	03/18/24 18:15	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:15	1
Cobalt	0.00196		0.000500		mg/L		03/18/24 09:00	03/18/24 18:15	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:15	1
Lithium	0.0639		0.0100		mg/L		03/18/24 09:00	03/19/24 16:59	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:15	1
Selenium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:15	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:15	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	596		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.5	HF	1.0		SU			03/14/24 19:35	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.166	U	0.107	0.108	1.00	0.166	pCi/L	03/19/24 10:32	04/11/24 21:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	91.2		30 - 110					03/19/24 10:32	04/11/24 21:47	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.481	U	0.326	0.329	1.00	0.481	pCi/L	03/19/24 10:38	04/09/24 11:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.2		30 - 110					03/19/24 10:38	04/09/24 11:56	1
Y Carrier	83.0		30 - 110					03/19/24 10:38	04/09/24 11:56	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW04-GW-0324

Lab Sample ID: 310-276843-2

Date Collected: 03/12/24 11:15

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	0.588		0.343	0.346	5.00	0.481	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW08-GW-0324

Lab Sample ID: 310-276843-3

Date Collected: 03/13/24 09:00

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			03/19/24 14:59	5
Sulfate	448		5.00		mg/L			03/19/24 14:59	5
Fluoride	<1.00		1.00		mg/L			03/19/24 14:59	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:01	1
Arsenic	0.00217		0.00200		mg/L		03/18/24 09:00	03/18/24 18:17	1
Barium	0.0934		0.00200		mg/L		03/18/24 09:00	03/18/24 18:17	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:01	1
Boron	3.27		0.100		mg/L		03/18/24 09:00	03/19/24 17:01	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:17	1
Calcium	209		0.500		mg/L		03/18/24 09:00	03/18/24 18:17	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:17	1
Cobalt	0.00109		0.000500		mg/L		03/18/24 09:00	03/18/24 18:17	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:17	1
Lithium	0.137		0.0100		mg/L		03/18/24 09:00	03/19/24 17:01	1
Molybdenum	0.00695		0.00200		mg/L		03/18/24 09:00	03/18/24 18:17	1
Selenium	0.145		0.00500		mg/L		03/18/24 09:00	03/18/24 18:17	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:17	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1170		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.4	HF	1.0		SU			03/14/24 19:39	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.162	U	0.115	0.116	1.00	0.162	pCi/L	03/19/24 10:32	04/11/24 21:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	90.5		30 - 110					03/19/24 10:32	04/11/24 21:47	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.496	U	0.329	0.331	1.00	0.496	pCi/L	03/19/24 10:38	04/09/24 11:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		30 - 110					03/19/24 10:38	04/09/24 11:56	1
Y Carrier	84.1		30 - 110					03/19/24 10:38	04/09/24 11:56	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW08-GW-0324

Lab Sample ID: 310-276843-3

Date Collected: 03/13/24 09:00

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	0.597		0.349	0.351	5.00	0.496	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW10-GW-0324

Lab Sample ID: 310-276843-4

Date Collected: 03/13/24 11:05

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.09		5.00		mg/L			03/19/24 15:13	5
Sulfate	137		5.00		mg/L			03/19/24 15:13	5
Fluoride	<1.00		1.00		mg/L			03/19/24 15:13	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:03	1
Arsenic	0.0467		0.00200		mg/L		03/18/24 09:00	03/18/24 18:19	1
Barium	0.463		0.00200		mg/L		03/18/24 09:00	03/18/24 18:19	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:03	1
Boron	0.545		0.100		mg/L		03/18/24 09:00	03/19/24 17:03	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:19	1
Calcium	164		0.500		mg/L		03/18/24 09:00	03/18/24 18:19	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:19	1
Cobalt	0.00115		0.000500		mg/L		03/18/24 09:00	03/18/24 18:19	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:19	1
Lithium	0.109		0.0100		mg/L		03/18/24 09:00	03/19/24 17:03	1
Molybdenum	0.00335		0.00200		mg/L		03/18/24 09:00	03/18/24 18:19	1
Selenium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:19	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:19	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	818		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.6	HF	1.0		SU			03/14/24 19:43	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.379		0.162	0.166	1.00	0.170	pCi/L	03/19/24 10:32	04/11/24 21:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	83.0		30 - 110					03/19/24 10:32	04/11/24 21:47	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.591		0.389	0.393	1.00	0.575	pCi/L	03/19/24 10:38	04/09/24 11:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.0		30 - 110					03/19/24 10:38	04/09/24 11:57	1
Y Carrier	82.6		30 - 110					03/19/24 10:38	04/09/24 11:57	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW10-GW-0324

Lab Sample ID: 310-276843-4

Date Collected: 03/13/24 11:05

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	0.970		0.421	0.427	5.00	0.575	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW11-GW-0324

Lab Sample ID: 310-276843-5

Date Collected: 03/13/24 11:30

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17.1		5.00		mg/L			03/19/24 15:28	5
Sulfate	353		5.00		mg/L			03/19/24 15:28	5
Fluoride	<1.00		1.00		mg/L			03/19/24 15:28	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:05	1
Arsenic	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:21	1
Barium	0.0466		0.00200		mg/L		03/18/24 09:00	03/18/24 18:21	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:05	1
Boron	0.367		0.100		mg/L		03/18/24 09:00	03/19/24 17:05	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:21	1
Calcium	206		0.500		mg/L		03/18/24 09:00	03/18/24 18:21	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:21	1
Cobalt	0.00606		0.000500		mg/L		03/18/24 09:00	03/18/24 18:21	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:21	1
Lithium	0.114		0.0100		mg/L		03/18/24 09:00	03/19/24 17:05	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:21	1
Selenium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:21	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:21	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1000		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.5	HF	1.0		SU			03/14/24 19:47	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	<0.225	U	0.110	0.110	1.00	0.225	pCi/L	03/19/24 10:32	04/11/24 21:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	88.9		30 - 110					03/19/24 10:32	04/11/24 21:47	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	<0.748	U	0.426	0.426	1.00	0.748	pCi/L	03/19/24 10:38	04/09/24 11:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.9		30 - 110					03/19/24 10:38	04/09/24 11:57	1
Y Carrier	81.5		30 - 110					03/19/24 10:38	04/09/24 11:57	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW11-GW-0324

Lab Sample ID: 310-276843-5

Date Collected: 03/13/24 11:30

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	<0.748	U	0.440	0.440	5.00	0.748	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW12-GW-0324

Lab Sample ID: 310-276843-6

Date Collected: 03/12/24 18:00

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	38.5		5.00		mg/L			03/18/24 17:06	5
Sulfate	594		20.0		mg/L			03/19/24 10:10	20
Fluoride	<1.00		1.00		mg/L			03/18/24 17:06	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:08	1
Arsenic	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:23	1
Barium	0.0499		0.00200		mg/L		03/18/24 09:00	03/18/24 18:23	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:08	1
Boron	1.13		0.100		mg/L		03/18/24 09:00	03/19/24 17:08	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:23	1
Calcium	261		0.500		mg/L		03/18/24 09:00	03/18/24 18:23	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:23	1
Cobalt	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:23	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:23	1
Lithium	0.152		0.0100		mg/L		03/18/24 09:00	03/19/24 17:08	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:23	1
Selenium	0.293		0.00500		mg/L		03/18/24 09:00	03/18/24 18:23	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:23	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1320		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.3	HF	1.0		SU			03/14/24 19:52	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	<0.223	U	0.0981	0.0982	1.00	0.223	pCi/L	03/19/24 10:32	04/11/24 21:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	95.9		30 - 110					03/19/24 10:32	04/11/24 21:48	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	<0.476	U	0.260	0.260	1.00	0.476	pCi/L	03/19/24 10:38	04/09/24 11:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		30 - 110					03/19/24 10:38	04/09/24 11:57	1
Y Carrier	83.0		30 - 110					03/19/24 10:38	04/09/24 11:57	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW12-GW-0324

Lab Sample ID: 310-276843-6

Date Collected: 03/12/24 18:00

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	<0.476	U	0.278	0.278	5.00	0.476	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW13-GW-0324

Lab Sample ID: 310-276843-7

Date Collected: 03/12/24 17:05

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.5		5.00		mg/L			03/18/24 17:19	5
Sulfate	558		20.0		mg/L			03/19/24 10:23	20
Fluoride	<1.00		1.00		mg/L			03/18/24 17:19	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:10	1
Arsenic	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:26	1
Barium	0.0354		0.00200		mg/L		03/18/24 09:00	03/18/24 18:26	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:10	1
Boron	1.80		0.100		mg/L		03/18/24 09:00	03/19/24 17:10	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:26	1
Calcium	244		0.500		mg/L		03/18/24 09:00	03/18/24 18:26	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:26	1
Cobalt	0.00112		0.000500		mg/L		03/18/24 09:00	03/18/24 18:26	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:26	1
Lithium	0.112		0.0100		mg/L		03/18/24 09:00	03/19/24 17:10	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:26	1
Selenium	0.00751		0.00500		mg/L		03/18/24 09:00	03/18/24 18:26	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:26	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1310		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.4	HF	1.0		SU			03/14/24 19:56	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	<0.606	U	0.433	0.437	1.00	0.606	pCi/L	03/19/24 10:32	04/11/24 21:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	21.1	X	30 - 110					03/19/24 10:32	04/11/24 21:48	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	<0.571	U	0.287	0.287	1.00	0.571	pCi/L	04/10/24 10:40	04/28/24 11:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		30 - 110					04/10/24 10:40	04/28/24 11:58	1
Y Carrier	87.1		30 - 110					04/10/24 10:40	04/28/24 11:58	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW13-GW-0324

Lab Sample ID: 310-276843-7

Date Collected: 03/12/24 17:05

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	<0.606	U	0.519	0.523	5.00	0.606	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW14-GW-0324

Lab Sample ID: 310-276843-8

Date Collected: 03/11/24 18:30

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.41		5.00		mg/L			03/15/24 20:55	5
Sulfate	236		5.00		mg/L			03/15/24 20:55	5
Fluoride	<1.00		1.00		mg/L			03/15/24 20:55	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:12	1
Arsenic	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:28	1
Barium	0.0731		0.00200		mg/L		03/18/24 09:00	03/18/24 18:28	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:12	1
Boron	0.332		0.100		mg/L		03/18/24 09:00	03/19/24 17:12	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:28	1
Calcium	220		0.500		mg/L		03/18/24 09:00	03/18/24 18:28	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:28	1
Cobalt	0.00277		0.000500		mg/L		03/18/24 09:00	03/18/24 18:28	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:28	1
Lithium	0.137		0.0100		mg/L		03/18/24 09:00	03/19/24 17:12	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:28	1
Selenium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:28	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:28	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	942		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.4	HF	1.0		SU			03/14/24 20:00	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	<1.56	U G	0.777	0.777	1.00	1.56	pCi/L	03/19/24 10:32	04/11/24 21:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	12.9	X	30 - 110					03/19/24 10:32	04/11/24 21:48	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	7.53	G	3.68	3.74	1.00	5.02	pCi/L	03/19/24 10:38	04/09/24 11:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	12.9	X	30 - 110					03/19/24 10:38	04/09/24 11:57	1
Y Carrier	82.2		30 - 110					03/19/24 10:38	04/09/24 11:57	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW14-GW-0324

Lab Sample ID: 310-276843-8

Date Collected: 03/11/24 18:30

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	7.61	G	3.76	3.82	5.00	5.02	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW15-GW-0324

Lab Sample ID: 310-276843-9

Date Collected: 03/13/24 10:10

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26.1		5.00		mg/L			03/19/24 16:10	5
Sulfate	374		5.00		mg/L			03/19/24 16:10	5
Fluoride	<1.00		1.00		mg/L			03/19/24 16:10	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:14	1
Arsenic	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:39	1
Barium	0.0665		0.00200		mg/L		03/18/24 09:00	03/18/24 18:39	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:14	1
Boron	0.960		0.100		mg/L		03/18/24 09:00	03/18/24 18:39	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:39	1
Calcium	208		0.500		mg/L		03/18/24 09:00	03/18/24 18:39	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:39	1
Cobalt	0.00113		0.000500		mg/L		03/18/24 09:00	03/18/24 18:39	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:39	1
Lithium	0.0754		0.0100		mg/L		03/18/24 09:00	03/18/24 18:39	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:39	1
Selenium	0.0677		0.00500		mg/L		03/18/24 09:00	03/18/24 18:39	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:39	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1140		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.4	HF	1.0		SU			03/14/24 20:04	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	<0.171	U	0.0898	0.0898	1.00	0.171	pCi/L	03/19/24 10:32	04/11/24 21:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	80.2		30 - 110					03/19/24 10:32	04/11/24 21:48	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	<0.559	U	0.363	0.366	1.00	0.559	pCi/L	03/19/24 10:38	04/09/24 11:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.2		30 - 110					03/19/24 10:38	04/09/24 11:58	1
Y Carrier	85.2		30 - 110					03/19/24 10:38	04/09/24 11:58	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW15-GW-0324

Lab Sample ID: 310-276843-9

Date Collected: 03/13/24 10:10

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	<0.559	U	0.374	0.377	5.00	0.559	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW16-GW-0324

Lab Sample ID: 310-276843-10

Date Collected: 03/11/24 17:10

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.08		5.00		mg/L			03/15/24 21:08	5
Sulfate	38.2		5.00		mg/L			03/15/24 21:08	5
Fluoride	<1.00		1.00		mg/L			03/15/24 21:08	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:25	1
Arsenic	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:41	1
Barium	0.266	F1	0.00200		mg/L		03/18/24 09:00	03/18/24 18:41	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:25	1
Boron	0.184		0.100		mg/L		03/18/24 09:00	03/18/24 18:41	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:41	1
Calcium	142		0.500		mg/L		03/18/24 09:00	03/18/24 18:41	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:41	1
Cobalt	0.00111		0.000500		mg/L		03/18/24 09:00	03/18/24 18:41	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:41	1
Lithium	0.0573		0.0100		mg/L		03/18/24 09:00	03/18/24 18:41	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:41	1
Selenium	0.0214		0.00500		mg/L		03/18/24 09:00	03/18/24 18:41	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:41	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	600		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.6	HF	1.0		SU			03/14/24 19:26	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	<0.189	U	0.122	0.122	1.00	0.189	pCi/L	03/19/24 10:32	04/11/24 21:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	86.1		30 - 110					03/19/24 10:32	04/11/24 21:48	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	0.579		0.375	0.379	1.00	0.553	pCi/L	03/19/24 10:38	04/09/24 11:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.1		30 - 110					03/19/24 10:38	04/09/24 11:58	1
Y Carrier	84.9		30 - 110					03/19/24 10:38	04/09/24 11:58	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW16-GW-0324

Lab Sample ID: 310-276843-10

Date Collected: 03/11/24 17:10

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	0.705		0.394	0.398	5.00	0.553	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW17-GW-0324

Lab Sample ID: 310-276843-11

Date Collected: 03/12/24 14:43

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14.7		5.00		mg/L			03/18/24 17:32	5
Sulfate	97.1		5.00		mg/L			03/18/24 17:32	5
Fluoride	<1.00		1.00		mg/L			03/18/24 17:32	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:32	1
Arsenic	0.0157		0.00200		mg/L		03/18/24 09:00	03/18/24 18:51	1
Barium	0.105		0.00200		mg/L		03/18/24 09:00	03/18/24 18:51	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:32	1
Boron	0.194		0.100		mg/L		03/18/24 09:00	03/18/24 18:51	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:51	1
Calcium	161		0.500		mg/L		03/18/24 09:00	03/18/24 18:51	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:51	1
Cobalt	0.000878		0.000500		mg/L		03/18/24 09:00	03/18/24 18:51	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:51	1
Lithium	0.0780		0.0100		mg/L		03/18/24 09:00	03/18/24 18:51	1
Molybdenum	0.00283		0.00200		mg/L		03/18/24 09:00	03/18/24 18:51	1
Selenium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:51	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:51	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	658		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.5	HF	1.0		SU			03/14/24 20:18	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	0.352		0.183	0.186	1.00	0.233	pCi/L	03/19/24 10:32	04/11/24 21:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	70.6		30 - 110					03/19/24 10:32	04/11/24 21:42	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	1.36		0.522	0.536	1.00	0.647	pCi/L	03/19/24 10:38	04/09/24 11:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	70.6		30 - 110					03/19/24 10:38	04/09/24 11:58	1
Y Carrier	85.6		30 - 110					03/19/24 10:38	04/09/24 11:58	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW17-GW-0324

Lab Sample ID: 310-276843-11

Date Collected: 03/12/24 14:43

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	1.71		0.553	0.567	5.00	0.647	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW18-GW-0324

Lab Sample ID: 310-276843-12

Date Collected: 03/12/24 13:10

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			03/18/24 17:45	5
Sulfate	90.9		5.00		mg/L			03/18/24 17:45	5
Fluoride	<1.00		1.00		mg/L			03/18/24 17:45	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:34	1
Arsenic	0.0260		0.00200		mg/L		03/18/24 09:00	03/18/24 18:53	1
Barium	0.120		0.00200		mg/L		03/18/24 09:00	03/18/24 18:53	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:34	1
Boron	0.215		0.100		mg/L		03/18/24 09:00	03/18/24 18:53	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:53	1
Calcium	180		0.500		mg/L		03/18/24 09:00	03/18/24 18:53	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:53	1
Cobalt	0.00277		0.000500		mg/L		03/18/24 09:00	03/18/24 18:53	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:53	1
Lithium	0.132		0.0100		mg/L		03/18/24 09:00	03/18/24 18:53	1
Molybdenum	0.00206		0.00200		mg/L		03/18/24 09:00	03/18/24 18:53	1
Selenium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:53	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:53	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	802		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.6	HF	1.0		SU			03/14/24 20:45	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.404		0.175	0.178	1.00	0.207	pCi/L	03/19/24 10:32	04/11/24 21:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	86.9		30 - 110					03/19/24 10:32	04/11/24 21:42	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.990		0.452	0.461	1.00	0.610	pCi/L	03/19/24 10:38	04/09/24 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.9		30 - 110					03/19/24 10:38	04/09/24 11:59	1
Y Carrier	81.5		30 - 110					03/19/24 10:38	04/09/24 11:59	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW18-GW-0324

Lab Sample ID: 310-276843-12

Date Collected: 03/12/24 13:10

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	1.39		0.485	0.494	5.00	0.610	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW19-GW-0324

Lab Sample ID: 310-276843-13

Date Collected: 03/12/24 08:40

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	57.0		5.00		mg/L			03/18/24 17:58	5
Sulfate	244		5.00		mg/L			03/18/24 17:58	5
Fluoride	<1.00		1.00		mg/L			03/18/24 17:58	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:36	1
Arsenic	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:55	1
Barium	0.139		0.00200		mg/L		03/18/24 09:00	03/18/24 18:55	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:36	1
Boron	0.466		0.100		mg/L		03/18/24 09:00	03/18/24 18:55	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:55	1
Calcium	247		0.500		mg/L		03/18/24 09:00	03/18/24 18:55	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:55	1
Cobalt	0.00636		0.000500		mg/L		03/18/24 09:00	03/18/24 18:55	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:55	1
Lithium	0.144		0.0100		mg/L		03/18/24 09:00	03/18/24 18:55	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:55	1
Selenium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:55	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:55	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1110		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.5	HF	1.0		SU			03/14/24 20:29	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.307		0.165	0.167	1.00	0.210	pCi/L	03/19/24 10:32	04/11/24 21:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	79.4		30 - 110					03/19/24 10:32	04/11/24 21:42	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.44		0.487	0.505	1.00	0.564	pCi/L	03/19/24 10:38	04/09/24 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.4		30 - 110					03/19/24 10:38	04/09/24 11:59	1
Y Carrier	84.9		30 - 110					03/19/24 10:38	04/09/24 11:59	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW19-GW-0324

Lab Sample ID: 310-276843-13

Date Collected: 03/12/24 08:40

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	1.74		0.514	0.532	5.00	0.564	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW20-GW-0324

Lab Sample ID: 310-276843-14

Date Collected: 03/12/24 10:20

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	156		5.00		mg/L			03/18/24 18:11	5
Sulfate	181		5.00		mg/L			03/18/24 18:11	5
Fluoride	<1.00		1.00		mg/L			03/18/24 18:11	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:38	1
Arsenic	0.0167		0.00200		mg/L		03/18/24 09:00	03/18/24 18:58	1
Barium	0.159		0.00200		mg/L		03/18/24 09:00	03/18/24 18:58	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:38	1
Boron	0.909		0.100		mg/L		03/18/24 09:00	03/18/24 18:58	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 18:58	1
Calcium	205		0.500		mg/L		03/18/24 09:00	03/18/24 18:58	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:58	1
Cobalt	0.00142		0.000500		mg/L		03/18/24 09:00	03/18/24 18:58	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 18:58	1
Lithium	0.0921		0.0100		mg/L		03/18/24 09:00	03/18/24 18:58	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 18:58	1
Selenium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 18:58	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 18:58	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1000		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.5	HF	1.0		SU			03/14/24 20:33	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	0.224		0.150	0.151	1.00	0.211	pCi/L	03/19/24 10:32	04/11/24 21:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	83.8		30 - 110					03/19/24 10:32	04/11/24 21:42	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	0.963		0.423	0.432	1.00	0.554	pCi/L	03/19/24 10:38	04/09/24 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.8		30 - 110					03/19/24 10:38	04/09/24 11:59	1
Y Carrier	87.1		30 - 110					03/19/24 10:38	04/09/24 11:59	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW20-GW-0324

Lab Sample ID: 310-276843-14

Date Collected: 03/12/24 10:20

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	1.19		0.449	0.458	5.00	0.554	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW21-GW-0324

Lab Sample ID: 310-276843-15

Date Collected: 03/13/24 11:00

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.82		5.00		mg/L			03/19/24 16:24	5
Sulfate	17.4		5.00		mg/L			03/19/24 16:24	5
Fluoride	<1.00		1.00		mg/L			03/19/24 16:24	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:40	1
Arsenic	0.00680		0.00200		mg/L		03/18/24 09:00	03/18/24 19:08	1
Barium	0.483		0.00200		mg/L		03/18/24 09:00	03/18/24 19:08	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:40	1
Boron	0.164		0.100		mg/L		03/18/24 09:00	03/18/24 19:08	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 19:08	1
Calcium	152		0.500		mg/L		03/18/24 09:00	03/18/24 19:08	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 19:08	1
Cobalt	0.00543		0.000500		mg/L		03/18/24 09:00	03/18/24 19:08	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 19:08	1
Lithium	0.0711		0.0100		mg/L		03/18/24 09:00	03/18/24 19:08	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 19:08	1
Selenium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 19:08	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 19:08	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	498		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.6	HF	1.0		SU			03/14/24 20:37	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.653		0.242	0.249	1.00	0.249	pCi/L	03/19/24 10:32	04/11/24 21:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	84.5		30 - 110					03/19/24 10:32	04/11/24 21:42	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	3.90		0.870	0.941	1.00	0.871	pCi/L	03/19/24 10:38	04/09/24 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.5		30 - 110					03/19/24 10:38	04/09/24 11:59	1
Y Carrier	80.7		30 - 110					03/19/24 10:38	04/09/24 11:59	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW21-GW-0324

Lab Sample ID: 310-276843-15

Date Collected: 03/13/24 11:00

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	4.56		0.903	0.973	5.00	0.871	pCi/L		04/26/24 11:26	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: DP01-GW-0324

Lab Sample ID: 310-276843-16

Date Collected: 03/12/24 00:00

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			03/18/24 18:24	5
Sulfate	201		5.00		mg/L			03/18/24 18:24	5
Fluoride	<1.00		1.00		mg/L			03/18/24 18:24	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/19/24 17:42	1
Arsenic	0.0188		0.00200		mg/L		03/18/24 09:00	03/18/24 19:11	1
Barium	0.219		0.00200		mg/L		03/18/24 09:00	03/18/24 19:11	1
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 17:42	1
Boron	0.602		0.100		mg/L		03/18/24 09:00	03/18/24 19:11	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 19:11	1
Calcium	218		0.500		mg/L		03/18/24 09:00	03/18/24 19:11	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 19:11	1
Cobalt	0.00562		0.000500		mg/L		03/18/24 09:00	03/18/24 19:11	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 19:11	1
Lithium	0.111		0.0100		mg/L		03/18/24 09:00	03/18/24 19:11	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 19:11	1
Selenium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 19:11	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 19:11	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	864		50.0		mg/L			03/15/24 12:37	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.6	HF	1.0		SU			03/14/24 20:41	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.184		0.130	0.131	1.00	0.184	pCi/L	03/19/24 10:32	04/11/24 21:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	87.9		30 - 110					03/19/24 10:32	04/11/24 21:42	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.601		0.352	0.356	1.00	0.495	pCi/L	03/19/24 10:38	04/09/24 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.9		30 - 110					03/19/24 10:38	04/09/24 11:59	1
Y Carrier	84.1		30 - 110					03/19/24 10:38	04/09/24 11:59	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: DP01-GW-0324

Lab Sample ID: 310-276843-16

Date Collected: 03/12/24 00:00

Matrix: Water

Date Received: 03/14/24 16:55

Method: TAL-STL 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	0.785		0.375	0.379	5.00	0.495	pCi/L		04/26/24 11:26	1

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Definitions/Glossary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.
X	Carrier is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-416333/3
Matrix: Water
Analysis Batch: 416333

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			03/15/24 18:05	1
Sulfate	<1.00		1.00		mg/L			03/15/24 18:05	1
Fluoride	<0.200		0.200		mg/L			03/15/24 18:05	1

Lab Sample ID: LCS 310-416333/4
Matrix: Water
Analysis Batch: 416333

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.848		mg/L		98	90 - 110
Sulfate	10.0	10.40		mg/L		104	90 - 110
Fluoride	2.00	2.053		mg/L		103	90 - 110

Lab Sample ID: 310-276843-10 MS
Matrix: Water
Analysis Batch: 416333

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	6.08		25.0	29.79		mg/L		95	80 - 120
Sulfate	38.2		25.0	63.27		mg/L		100	80 - 120
Fluoride	<1.00		5.00	5.239		mg/L		105	80 - 120

Lab Sample ID: 310-276843-10 MSD
Matrix: Water
Analysis Batch: 416333

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	6.08		25.0	29.90		mg/L		95	80 - 120	0	15
Sulfate	38.2		25.0	63.11		mg/L		100	80 - 120	0	15
Fluoride	<1.00		5.00	5.239		mg/L		105	80 - 120	0	15

Lab Sample ID: MB 310-416369/3
Matrix: Water
Analysis Batch: 416369

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			03/18/24 13:10	1
Sulfate	<1.00		1.00		mg/L			03/18/24 13:10	1
Fluoride	<0.200		0.200		mg/L			03/18/24 13:10	1

Lab Sample ID: LCS 310-416369/4
Matrix: Water
Analysis Batch: 416369

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.839		mg/L		98	90 - 110
Sulfate	10.0	10.54		mg/L		105	90 - 110
Fluoride	2.00	2.061		mg/L		103	90 - 110

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

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

Lab Sample ID: MB 310-416442/3
Matrix: Water
Analysis Batch: 416442

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			03/19/24 13:21	1
Sulfate	<1.00		1.00		mg/L			03/19/24 13:21	1
Fluoride	<0.200		0.200		mg/L			03/19/24 13:21	1

Lab Sample ID: LCS 310-416442/4
Matrix: Water
Analysis Batch: 416442

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.33		mg/L		103	90 - 110
Sulfate	10.0	10.91		mg/L		109	90 - 110
Fluoride	2.00	2.188		mg/L		109	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-416147/1-A
Matrix: Water
Analysis Batch: 416292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 416147

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 17:55	1
Arsenic	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 17:55	1
Barium	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 17:55	1
Cadmium	<0.000200		0.000200		mg/L		03/18/24 09:00	03/18/24 17:55	1
Calcium	<0.500		0.500		mg/L		03/18/24 09:00	03/18/24 17:55	1
Chromium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 17:55	1
Cobalt	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 17:55	1
Lead	<0.000500		0.000500		mg/L		03/18/24 09:00	03/18/24 17:55	1
Molybdenum	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 17:55	1
Selenium	<0.00500		0.00500		mg/L		03/18/24 09:00	03/18/24 17:55	1
Thallium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/18/24 17:55	1

Lab Sample ID: MB 310-416147/1-A
Matrix: Water
Analysis Batch: 416425

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 416147

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.00100		0.00100		mg/L		03/18/24 09:00	03/19/24 16:39	1
Boron	<0.100		0.100		mg/L		03/18/24 09:00	03/19/24 16:39	1
Lithium	<0.0100		0.0100		mg/L		03/18/24 09:00	03/19/24 16:39	1

Lab Sample ID: LCS 310-416147/2-A
Matrix: Water
Analysis Batch: 416292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 416147

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2035		mg/L		102	80 - 120
Arsenic	0.200	0.2004		mg/L		100	80 - 120
Barium	0.100	0.1040		mg/L		104	80 - 120
Cadmium	0.100	0.09466		mg/L		95	80 - 120

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QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

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

Lab Sample ID: LCS 310-416147/2-A
Matrix: Water
Analysis Batch: 416292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 416147

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	2.00	1.639		mg/L		82	80 - 120
Chromium	0.100	0.09275		mg/L		93	80 - 120
Cobalt	0.100	0.1078		mg/L		108	80 - 120
Lead	0.200	0.2081		mg/L		104	80 - 120
Molybdenum	0.200	0.1931		mg/L		97	80 - 120
Selenium	0.400	0.3923		mg/L		98	80 - 120
Thallium	0.100	0.09887		mg/L		99	80 - 120

Lab Sample ID: LCS 310-416147/2-A
Matrix: Water
Analysis Batch: 416425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 416147

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	0.100	0.09727		mg/L		97	80 - 120
Boron	0.200	0.1890		mg/L		95	80 - 120
Lithium	0.200	0.2072		mg/L		104	80 - 120

Lab Sample ID: 310-276843-10 MS
Matrix: Water
Analysis Batch: 416292

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA
Prep Batch: 416147

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	<0.00200		0.200	0.2064		mg/L		103	75 - 125
Barium	0.266	F1	0.100	0.4227	F1	mg/L		157	75 - 125
Boron	0.184		0.200	0.3535		mg/L		85	75 - 125
Cadmium	<0.000200		0.100	0.09326		mg/L		93	75 - 125
Calcium	142		2.00	143.8	4	mg/L		83	75 - 125
Chromium	<0.00500		0.100	0.09325		mg/L		93	75 - 125
Cobalt	0.00111		0.100	0.1071		mg/L		106	75 - 125
Lead	<0.000500		0.200	0.2044		mg/L		102	75 - 125
Lithium	0.0573		0.200	0.2492		mg/L		96	75 - 125
Molybdenum	<0.00200		0.200	0.1974		mg/L		98	75 - 125
Selenium	0.0214		0.400	0.4169		mg/L		99	75 - 125
Thallium	<0.00100		0.100	0.09732		mg/L		97	75 - 125

Lab Sample ID: 310-276843-10 MS
Matrix: Water
Analysis Batch: 416425

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA
Prep Batch: 416147

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<0.00200		0.200	0.2126		mg/L		106	75 - 125
Beryllium	<0.00100		0.100	0.1109		mg/L		111	75 - 125

Lab Sample ID: 310-276843-10 MSD
Matrix: Water
Analysis Batch: 416292

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA
Prep Batch: 416147

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	<0.00200		0.200	0.2106		mg/L		105	75 - 125	2	20
Barium	0.266	F1	0.100	0.4298	F1	mg/L		164	75 - 125	2	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

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

Lab Sample ID: 310-276843-10 MSD
Matrix: Water
Analysis Batch: 416292

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA
Prep Batch: 416147

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.184		0.200	0.3664		mg/L		91	75 - 125	4	20
Cadmium	<0.000200		0.100	0.09522		mg/L		95	75 - 125	2	20
Calcium	142		2.00	147.8	4	mg/L		283	75 - 125	3	20
Chromium	<0.00500		0.100	0.09518		mg/L		95	75 - 125	2	20
Cobalt	0.00111		0.100	0.1082		mg/L		107	75 - 125	1	20
Lead	<0.000500		0.200	0.2082		mg/L		104	75 - 125	2	20
Lithium	0.0573		0.200	0.2552		mg/L		99	75 - 125	2	20
Molybdenum	<0.00200		0.200	0.2026		mg/L		101	75 - 125	3	20
Selenium	0.0214		0.400	0.4283		mg/L		102	75 - 125	3	20
Thallium	<0.00100		0.100	0.1004		mg/L		100	75 - 125	3	20

Lab Sample ID: 310-276843-10 MSD
Matrix: Water
Analysis Batch: 416425

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA
Prep Batch: 416147

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<0.00200		0.200	0.2136		mg/L		107	75 - 125	0	20
Beryllium	<0.00100		0.100	0.1087		mg/L		109	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-416339/1-A
Matrix: Water
Analysis Batch: 416779

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 416339

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/19/24 11:18	03/22/24 16:11	1

Lab Sample ID: LCS 310-416339/2-A
Matrix: Water
Analysis Batch: 416779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 416339

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001791		mg/L		107	80 - 120

Lab Sample ID: 310-276843-10 MS
Matrix: Water
Analysis Batch: 416779

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA
Prep Batch: 416339

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.000200		0.00167	0.001648		mg/L		99	80 - 120

Lab Sample ID: 310-276843-10 MSD
Matrix: Water
Analysis Batch: 416779

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA
Prep Batch: 416339

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.000200		0.00167	0.001743		mg/L		105	80 - 120	6	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

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

Lab Sample ID: MB 310-416116/1
Matrix: Water
Analysis Batch: 416116

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	<50.0		50.0		mg/L			03/15/24 12:37	1

Lab Sample ID: LCS 310-416116/2
Matrix: Water
Analysis Batch: 416116

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	1000	956.0		mg/L		96	90 - 110

Lab Sample ID: 310-276843-10 DU
Matrix: Water
Analysis Batch: 416116

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	600		602.0		mg/L		0.3	20

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-416067/1
Matrix: Water
Analysis Batch: 416067

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	98 - 102

Lab Sample ID: 310-276843-10 DU
Matrix: Water
Analysis Batch: 416067

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
pH	7.6	HF	7.6		SU		0.5	20

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-653036/1-A
Matrix: Water
Analysis Batch: 656486

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 653036

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.209	U	0.102	0.102	1.00	0.209	pCi/L	03/19/24 10:32	04/11/24 21:47	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	88.7		30 - 110					03/19/24 10:32	04/11/24 21:47	1

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

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

Lab Sample ID: LCS 160-653036/2-A
Matrix: Water
Analysis Batch: 656486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 653036

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226	11.3	10.34		1.17	1.00	0.187	pCi/L	91	75 - 125		
		LCS	LCS								
Carrier	%Yield	Qualifier	Limits								
Barium	93.8		30 - 110								

Lab Sample ID: 310-276843-10 MS
Matrix: Water
Analysis Batch: 656486

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA
Prep Batch: 653036

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	
Radium-226	<0.189	U	11.4	10.77		1.23	1.00	0.253	pCi/L	93	60 - 140	
		MS	MS									
Carrier	%Yield	Qualifier	Limits									
Barium	87.4		30 - 110									

Lab Sample ID: 310-276843-10 MSD
Matrix: Water
Analysis Batch: 656486

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA
Prep Batch: 653036

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		RER	Limit
Radium-226	<0.189	U	11.4	11.00		1.26	1.00	0.240	pCi/L	95	60 - 140	0.09	1	
		MSD	MSD											
Carrier	%Yield	Qualifier	Limits											
Barium	87.9		30 - 110											

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-653037/1-A
Matrix: Water
Analysis Batch: 656035

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 653037

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared		Analyzed		Dil Fac
Radium-228	<0.487	U	0.294	0.295	1.00	0.487	pCi/L	03/19/24 10:38	04/09/24 11:56			1
		MB	MB									
Carrier	%Yield	Qualifier	Limits	Prepared		Analyzed		Dil Fac				
Ba Carrier	88.7		30 - 110	03/19/24 10:38		04/09/24 11:56		1				
Y Carrier	85.6		30 - 110	03/19/24 10:38		04/09/24 11:56		1				

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

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

Lab Sample ID: LCS 160-653037/2-A
Matrix: Water
Analysis Batch: 656035

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 653037

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	
Radium-228	9.05	9.402		1.27	1.00	0.493	pCi/L	104	75 - 125	
Carrier		LCS %Yield	LCS Qualifier	Limits						
Ba Carrier		93.8		30 - 110						
Y Carrier		85.2		30 - 110						

Lab Sample ID: 310-276843-10 MS
Matrix: Water
Analysis Batch: 656035

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA
Prep Batch: 653037

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	
Radium-228	0.579		9.12	10.53		1.43	1.00	0.575	pCi/L	109	60 - 140	
Carrier		MS %Yield	MS Qualifier	Limits								
Ba Carrier		87.4		30 - 110								
Y Carrier		82.6		30 - 110								

Lab Sample ID: 310-276843-10 MSD
Matrix: Water
Analysis Batch: 656035

Client Sample ID: MW16-GW-0324
Prep Type: Total/NA
Prep Batch: 653037

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		RER	Limit
Radium-228	0.579		9.14	10.46		1.40	1.00	0.527	pCi/L	108	60 - 140	0.03	1	
Carrier		MSD %Yield	MSD Qualifier	Limits										
Ba Carrier		87.9		30 - 110										
Y Carrier		85.2		30 - 110										

Lab Sample ID: MB 160-656136/1-A
Matrix: Water
Analysis Batch: 659063

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 656136

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared		Analyzed		Dil Fac
Radium-228	<0.550	U	0.333	0.334	1.00	0.550	pCi/L	04/10/24 10:40	04/28/24 11:58	04/28/24 11:58	11:58	1
Carrier		MB %Yield	MB Qualifier	Limits			Prepared		Analyzed		Dil Fac	
Ba Carrier		93.9		30 - 110			04/10/24 10:40		04/28/24 11:58		1	
Y Carrier		87.9		30 - 110			04/10/24 10:40		04/28/24 11:58		1	

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

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

Lab Sample ID: LCS 160-656136/2-A
Matrix: Water
Analysis Batch: 659063

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 656136

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	
Radium-228	8.99	7.795		1.10	1.00	0.487	pCi/L	87	75 - 125	
LCS LCS										
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	95.9		30 - 110							
Y Carrier	87.5		30 - 110							

Lab Sample ID: LCSD 160-656136/6-A
Matrix: Water
Analysis Batch: 658963

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 656136

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		RER	RER Limit
Radium-228	8.99	8.056		1.12	1.00	0.457	pCi/L	90	75 - 125	0.12	1	
LCSD LCSD												
Carrier	%Yield	Qualifier	Limits									
Ba Carrier	101		30 - 110									
Y Carrier	85.2		30 - 110									

QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

HPLC/IC

Analysis Batch: 416333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-8	MW14-GW-0324	Total/NA	Water	9056A	
310-276843-10	MW16-GW-0324	Total/NA	Water	9056A	
MB 310-416333/3	Method Blank	Total/NA	Water	9056A	
LCS 310-416333/4	Lab Control Sample	Total/NA	Water	9056A	
310-276843-10 MS	MW16-GW-0324	Total/NA	Water	9056A	
310-276843-10 MSD	MW16-GW-0324	Total/NA	Water	9056A	

Analysis Batch: 416369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-1	MW02-GW-0324	Total/NA	Water	9056A	
310-276843-2	MW04-GW-0324	Total/NA	Water	9056A	
310-276843-6	MW12-GW-0324	Total/NA	Water	9056A	
310-276843-6	MW12-GW-0324	Total/NA	Water	9056A	
310-276843-7	MW13-GW-0324	Total/NA	Water	9056A	
310-276843-7	MW13-GW-0324	Total/NA	Water	9056A	
310-276843-11	MW17-GW-0324	Total/NA	Water	9056A	
310-276843-12	MW18-GW-0324	Total/NA	Water	9056A	
310-276843-13	MW19-GW-0324	Total/NA	Water	9056A	
310-276843-14	MW20-GW-0324	Total/NA	Water	9056A	
310-276843-16	DP01-GW-0324	Total/NA	Water	9056A	
MB 310-416369/3	Method Blank	Total/NA	Water	9056A	
LCS 310-416369/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 416442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-3	MW08-GW-0324	Total/NA	Water	9056A	
310-276843-4	MW10-GW-0324	Total/NA	Water	9056A	
310-276843-5	MW11-GW-0324	Total/NA	Water	9056A	
310-276843-9	MW15-GW-0324	Total/NA	Water	9056A	
310-276843-15	MW21-GW-0324	Total/NA	Water	9056A	
MB 310-416442/3	Method Blank	Total/NA	Water	9056A	
LCS 310-416442/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 416147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-1	MW02-GW-0324	Total/NA	Water	3005A	
310-276843-2	MW04-GW-0324	Total/NA	Water	3005A	
310-276843-3	MW08-GW-0324	Total/NA	Water	3005A	
310-276843-4	MW10-GW-0324	Total/NA	Water	3005A	
310-276843-5	MW11-GW-0324	Total/NA	Water	3005A	
310-276843-6	MW12-GW-0324	Total/NA	Water	3005A	
310-276843-7	MW13-GW-0324	Total/NA	Water	3005A	
310-276843-8	MW14-GW-0324	Total/NA	Water	3005A	
310-276843-9	MW15-GW-0324	Total/NA	Water	3005A	
310-276843-10	MW16-GW-0324	Total/NA	Water	3005A	
310-276843-11	MW17-GW-0324	Total/NA	Water	3005A	
310-276843-12	MW18-GW-0324	Total/NA	Water	3005A	
310-276843-13	MW19-GW-0324	Total/NA	Water	3005A	
310-276843-14	MW20-GW-0324	Total/NA	Water	3005A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Metals (Continued)

Prep Batch: 416147 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-15	MW21-GW-0324	Total/NA	Water	3005A	
310-276843-16	DP01-GW-0324	Total/NA	Water	3005A	
MB 310-416147/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-416147/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-276843-10 MS	MW16-GW-0324	Total/NA	Water	3005A	
310-276843-10 MSD	MW16-GW-0324	Total/NA	Water	3005A	

Analysis Batch: 416292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-1	MW02-GW-0324	Total/NA	Water	6020B	416147
310-276843-2	MW04-GW-0324	Total/NA	Water	6020B	416147
310-276843-3	MW08-GW-0324	Total/NA	Water	6020B	416147
310-276843-4	MW10-GW-0324	Total/NA	Water	6020B	416147
310-276843-5	MW11-GW-0324	Total/NA	Water	6020B	416147
310-276843-6	MW12-GW-0324	Total/NA	Water	6020B	416147
310-276843-7	MW13-GW-0324	Total/NA	Water	6020B	416147
310-276843-8	MW14-GW-0324	Total/NA	Water	6020B	416147
310-276843-9	MW15-GW-0324	Total/NA	Water	6020B	416147
310-276843-10	MW16-GW-0324	Total/NA	Water	6020B	416147
310-276843-11	MW17-GW-0324	Total/NA	Water	6020B	416147
310-276843-12	MW18-GW-0324	Total/NA	Water	6020B	416147
310-276843-13	MW19-GW-0324	Total/NA	Water	6020B	416147
310-276843-14	MW20-GW-0324	Total/NA	Water	6020B	416147
310-276843-15	MW21-GW-0324	Total/NA	Water	6020B	416147
310-276843-16	DP01-GW-0324	Total/NA	Water	6020B	416147
MB 310-416147/1-A	Method Blank	Total/NA	Water	6020B	416147
LCS 310-416147/2-A	Lab Control Sample	Total/NA	Water	6020B	416147
310-276843-10 MS	MW16-GW-0324	Total/NA	Water	6020B	416147
310-276843-10 MSD	MW16-GW-0324	Total/NA	Water	6020B	416147

Prep Batch: 416339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-1	MW02-GW-0324	Total/NA	Water	7470A	
310-276843-2	MW04-GW-0324	Total/NA	Water	7470A	
310-276843-3	MW08-GW-0324	Total/NA	Water	7470A	
310-276843-4	MW10-GW-0324	Total/NA	Water	7470A	
310-276843-5	MW11-GW-0324	Total/NA	Water	7470A	
310-276843-6	MW12-GW-0324	Total/NA	Water	7470A	
310-276843-7	MW13-GW-0324	Total/NA	Water	7470A	
310-276843-8	MW14-GW-0324	Total/NA	Water	7470A	
310-276843-9	MW15-GW-0324	Total/NA	Water	7470A	
310-276843-10	MW16-GW-0324	Total/NA	Water	7470A	
310-276843-11	MW17-GW-0324	Total/NA	Water	7470A	
310-276843-12	MW18-GW-0324	Total/NA	Water	7470A	
310-276843-13	MW19-GW-0324	Total/NA	Water	7470A	
310-276843-14	MW20-GW-0324	Total/NA	Water	7470A	
310-276843-15	MW21-GW-0324	Total/NA	Water	7470A	
310-276843-16	DP01-GW-0324	Total/NA	Water	7470A	
MB 310-416339/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-416339/2-A	Lab Control Sample	Total/NA	Water	7470A	
310-276843-10 MS	MW16-GW-0324	Total/NA	Water	7470A	

Eurofins Cedar Falls

QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Metals (Continued)

Prep Batch: 416339 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-10 MSD	MW16-GW-0324	Total/NA	Water	7470A	

Analysis Batch: 416425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-1	MW02-GW-0324	Total/NA	Water	6020B	416147
310-276843-2	MW04-GW-0324	Total/NA	Water	6020B	416147
310-276843-3	MW08-GW-0324	Total/NA	Water	6020B	416147
310-276843-4	MW10-GW-0324	Total/NA	Water	6020B	416147
310-276843-5	MW11-GW-0324	Total/NA	Water	6020B	416147
310-276843-6	MW12-GW-0324	Total/NA	Water	6020B	416147
310-276843-7	MW13-GW-0324	Total/NA	Water	6020B	416147
310-276843-8	MW14-GW-0324	Total/NA	Water	6020B	416147
310-276843-9	MW15-GW-0324	Total/NA	Water	6020B	416147
310-276843-10	MW16-GW-0324	Total/NA	Water	6020B	416147
310-276843-11	MW17-GW-0324	Total/NA	Water	6020B	416147
310-276843-12	MW18-GW-0324	Total/NA	Water	6020B	416147
310-276843-13	MW19-GW-0324	Total/NA	Water	6020B	416147
310-276843-14	MW20-GW-0324	Total/NA	Water	6020B	416147
310-276843-15	MW21-GW-0324	Total/NA	Water	6020B	416147
310-276843-16	DP01-GW-0324	Total/NA	Water	6020B	416147
MB 310-416147/1-A	Method Blank	Total/NA	Water	6020B	416147
LCS 310-416147/2-A	Lab Control Sample	Total/NA	Water	6020B	416147
310-276843-10 MS	MW16-GW-0324	Total/NA	Water	6020B	416147
310-276843-10 MSD	MW16-GW-0324	Total/NA	Water	6020B	416147

Analysis Batch: 416779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-1	MW02-GW-0324	Total/NA	Water	7470A	416339
310-276843-2	MW04-GW-0324	Total/NA	Water	7470A	416339
310-276843-3	MW08-GW-0324	Total/NA	Water	7470A	416339
310-276843-4	MW10-GW-0324	Total/NA	Water	7470A	416339
310-276843-5	MW11-GW-0324	Total/NA	Water	7470A	416339
310-276843-6	MW12-GW-0324	Total/NA	Water	7470A	416339
310-276843-7	MW13-GW-0324	Total/NA	Water	7470A	416339
310-276843-8	MW14-GW-0324	Total/NA	Water	7470A	416339
310-276843-9	MW15-GW-0324	Total/NA	Water	7470A	416339
310-276843-10	MW16-GW-0324	Total/NA	Water	7470A	416339
310-276843-11	MW17-GW-0324	Total/NA	Water	7470A	416339
310-276843-12	MW18-GW-0324	Total/NA	Water	7470A	416339
310-276843-13	MW19-GW-0324	Total/NA	Water	7470A	416339
310-276843-14	MW20-GW-0324	Total/NA	Water	7470A	416339
310-276843-15	MW21-GW-0324	Total/NA	Water	7470A	416339
310-276843-16	DP01-GW-0324	Total/NA	Water	7470A	416339
MB 310-416339/1-A	Method Blank	Total/NA	Water	7470A	416339
LCS 310-416339/2-A	Lab Control Sample	Total/NA	Water	7470A	416339
310-276843-10 MS	MW16-GW-0324	Total/NA	Water	7470A	416339
310-276843-10 MSD	MW16-GW-0324	Total/NA	Water	7470A	416339

QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

General Chemistry

Analysis Batch: 416067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-1	MW02-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-2	MW04-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-3	MW08-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-4	MW10-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-5	MW11-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-6	MW12-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-7	MW13-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-8	MW14-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-9	MW15-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-10	MW16-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-11	MW17-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-12	MW18-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-13	MW19-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-14	MW20-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-15	MW21-GW-0324	Total/NA	Water	SM 4500 H+ B	
310-276843-16	DP01-GW-0324	Total/NA	Water	SM 4500 H+ B	
LCS 310-416067/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-276843-10 DU	MW16-GW-0324	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 416116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-1	MW02-GW-0324	Total/NA	Water	SM 2540C	
310-276843-2	MW04-GW-0324	Total/NA	Water	SM 2540C	
310-276843-3	MW08-GW-0324	Total/NA	Water	SM 2540C	
310-276843-4	MW10-GW-0324	Total/NA	Water	SM 2540C	
310-276843-5	MW11-GW-0324	Total/NA	Water	SM 2540C	
310-276843-6	MW12-GW-0324	Total/NA	Water	SM 2540C	
310-276843-7	MW13-GW-0324	Total/NA	Water	SM 2540C	
310-276843-8	MW14-GW-0324	Total/NA	Water	SM 2540C	
310-276843-9	MW15-GW-0324	Total/NA	Water	SM 2540C	
310-276843-10	MW16-GW-0324	Total/NA	Water	SM 2540C	
310-276843-11	MW17-GW-0324	Total/NA	Water	SM 2540C	
310-276843-12	MW18-GW-0324	Total/NA	Water	SM 2540C	
310-276843-13	MW19-GW-0324	Total/NA	Water	SM 2540C	
310-276843-14	MW20-GW-0324	Total/NA	Water	SM 2540C	
310-276843-15	MW21-GW-0324	Total/NA	Water	SM 2540C	
310-276843-16	DP01-GW-0324	Total/NA	Water	SM 2540C	
MB 310-416116/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-416116/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-276843-10 DU	MW16-GW-0324	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 653036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-1	MW02-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-2	MW04-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-3	MW08-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-4	MW10-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-5	MW11-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-6	MW12-GW-0324	Total/NA	Water	PrecSep-21	

Eurofins Cedar Falls

QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Rad (Continued)

Prep Batch: 653036 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-7	MW13-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-8	MW14-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-9	MW15-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-10	MW16-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-11	MW17-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-12	MW18-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-13	MW19-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-14	MW20-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-15	MW21-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-16	DP01-GW-0324	Total/NA	Water	PrecSep-21	
MB 160-653036/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-653036/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
310-276843-10 MS	MW16-GW-0324	Total/NA	Water	PrecSep-21	
310-276843-10 MSD	MW16-GW-0324	Total/NA	Water	PrecSep-21	

Prep Batch: 653037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-1	MW02-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-2	MW04-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-3	MW08-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-4	MW10-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-5	MW11-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-6	MW12-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-8	MW14-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-9	MW15-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-10	MW16-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-11	MW17-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-12	MW18-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-13	MW19-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-14	MW20-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-15	MW21-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-16	DP01-GW-0324	Total/NA	Water	PrecSep_0	
MB 160-653037/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-653037/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
310-276843-10 MS	MW16-GW-0324	Total/NA	Water	PrecSep_0	
310-276843-10 MSD	MW16-GW-0324	Total/NA	Water	PrecSep_0	

Prep Batch: 656136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276843-7	MW13-GW-0324	Total/NA	Water	PrecSep_0	
MB 160-656136/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-656136/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-656136/6-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW02-GW-0324

Lab Sample ID: 310-276843-1

Date Collected: 03/12/24 15:45

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416369	QTZ5	EET CF	03/18/24 16:13
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:13
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 16:57
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:15
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 20:15
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656486	SWS	EET SL	04/11/24 21:47
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656035	SCB	EET SL	04/09/24 11:56
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW04-GW-0324

Lab Sample ID: 310-276843-2

Date Collected: 03/12/24 11:15

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416369	QTZ5	EET CF	03/18/24 16:53
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:15
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 16:59
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:17
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 19:35
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656486	SWS	EET SL	04/11/24 21:47
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656035	SCB	EET SL	04/09/24 11:56
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW08-GW-0324

Lab Sample ID: 310-276843-3

Date Collected: 03/13/24 09:00

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 14:59
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:17

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW08-GW-0324

Lab Sample ID: 310-276843-3

Date Collected: 03/13/24 09:00

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:01
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:19
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 19:39
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656486	SWS	EET SL	04/11/24 21:47
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656035	SCB	EET SL	04/09/24 11:56
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW10-GW-0324

Lab Sample ID: 310-276843-4

Date Collected: 03/13/24 11:05

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 15:13
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:19
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:03
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:22
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 19:43
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656486	SWS	EET SL	04/11/24 21:47
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656035	SCB	EET SL	04/09/24 11:57
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW11-GW-0324

Lab Sample ID: 310-276843-5

Date Collected: 03/13/24 11:30

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 15:28
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:21
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:05
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:24

Eurofins Cedar Falls

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW11-GW-0324

Lab Sample ID: 310-276843-5

Date Collected: 03/13/24 11:30

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 19:47
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656486	SWS	EET SL	04/11/24 21:47
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656035	SCB	EET SL	04/09/24 11:57
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW12-GW-0324

Lab Sample ID: 310-276843-6

Date Collected: 03/12/24 18:00

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416369	QTZ5	EET CF	03/18/24 17:06
Total/NA	Analysis	9056A		20	416369	QTZ5	EET CF	03/19/24 10:10
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:23
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:08
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:26
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 19:52
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656486	SWS	EET SL	04/11/24 21:48
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656035	SCB	EET SL	04/09/24 11:57
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW13-GW-0324

Lab Sample ID: 310-276843-7

Date Collected: 03/12/24 17:05

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416369	QTZ5	EET CF	03/18/24 17:19
Total/NA	Analysis	9056A		20	416369	QTZ5	EET CF	03/19/24 10:23
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:26
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:10
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:28
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 19:56

Eurofins Cedar Falls

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW13-GW-0324

Lab Sample ID: 310-276843-7

Date Collected: 03/12/24 17:05

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656486	SWS	EET SL	04/11/24 21:48
Total/NA	Prep	PrecSep_0			656136	KAK	EET SL	04/10/24 10:40
Total/NA	Analysis	9320		1	659063	SCB	EET SL	04/28/24 11:58
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW14-GW-0324

Lab Sample ID: 310-276843-8

Date Collected: 03/11/24 18:30

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416333	QTZ5	EET CF	03/15/24 20:55
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:28
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:12
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:30
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 20:00
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656486	SWS	EET SL	04/11/24 21:48
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656035	SCB	EET SL	04/09/24 11:57
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW15-GW-0324

Lab Sample ID: 310-276843-9

Date Collected: 03/13/24 10:10

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 16:10
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:39
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:14
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:32
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 20:04
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656486	SWS	EET SL	04/11/24 21:48
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656035	SCB	EET SL	04/09/24 11:58

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW15-GW-0324

Lab Sample ID: 310-276843-9

Date Collected: 03/13/24 10:10

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW16-GW-0324

Lab Sample ID: 310-276843-10

Date Collected: 03/11/24 17:10

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416333	QTZ5	EET CF	03/15/24 21:08
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:41
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:25
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:41
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 19:26
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656486	SWS	EET SL	04/11/24 21:48
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656035	SCB	EET SL	04/09/24 11:58
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW17-GW-0324

Lab Sample ID: 310-276843-11

Date Collected: 03/12/24 14:43

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416369	QTZ5	EET CF	03/18/24 17:32
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:51
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:32
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:48
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 20:18
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656483	SCB	EET SL	04/11/24 21:42
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656035	SCB	EET SL	04/09/24 11:58
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW18-GW-0324
Date Collected: 03/12/24 13:10
Date Received: 03/14/24 16:55

Lab Sample ID: 310-276843-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416369	QTZ5	EET CF	03/18/24 17:45
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:53
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:34
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:50
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 20:45
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656483	SCB	EET SL	04/11/24 21:42
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656032	SWS	EET SL	04/09/24 11:59
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW19-GW-0324
Date Collected: 03/12/24 08:40
Date Received: 03/14/24 16:55

Lab Sample ID: 310-276843-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416369	QTZ5	EET CF	03/18/24 17:58
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:55
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:36
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:52
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 20:29
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656483	SCB	EET SL	04/11/24 21:42
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656032	SWS	EET SL	04/09/24 11:59
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW20-GW-0324
Date Collected: 03/12/24 10:20
Date Received: 03/14/24 16:55

Lab Sample ID: 310-276843-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416369	QTZ5	EET CF	03/18/24 18:11
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 18:58

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: MW20-GW-0324

Lab Sample ID: 310-276843-14

Date Collected: 03/12/24 10:20

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:38
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:54
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 20:33
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656483	SCB	EET SL	04/11/24 21:42
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656032	SWS	EET SL	04/09/24 11:59
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: MW21-GW-0324

Lab Sample ID: 310-276843-15

Date Collected: 03/13/24 11:00

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 16:24
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 19:08
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:40
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:57
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 20:37
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656483	SCB	EET SL	04/11/24 21:42
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656032	SWS	EET SL	04/09/24 11:59
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Client Sample ID: DP01-GW-0324

Lab Sample ID: 310-276843-16

Date Collected: 03/12/24 00:00

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416369	QTZ5	EET CF	03/18/24 18:24
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 19:11
Total/NA	Prep	3005A			416147	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 17:42
Total/NA	Prep	7470A			416339	A6US	EET CF	03/19/24 11:18
Total/NA	Analysis	7470A		1	416779	A6US	EET CF	03/22/24 16:59

Eurofins Cedar Falls

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Client Sample ID: DP01-GW-0324

Lab Sample ID: 310-276843-16

Date Collected: 03/12/24 00:00

Matrix: Water

Date Received: 03/14/24 16:55

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Analyst</u>	<u>Lab</u>	<u>Prepared or Analyzed</u>
Total/NA	Analysis	SM 2540C		1	416116	D7CP	EET CF	03/15/24 12:37
Total/NA	Analysis	SM 4500 H+ B		1	416067	D7CP	EET CF	03/14/24 20:41
Total/NA	Prep	PrecSep-21			653036	KAK	EET SL	03/19/24 10:32
Total/NA	Analysis	9315		1	656483	SCB	EET SL	04/11/24 21:42
Total/NA	Prep	PrecSep_0			653037	KAK	EET SL	03/19/24 10:38
Total/NA	Analysis	9320		1	656032	SWS	EET SL	04/09/24 11:59
Total/NA	Analysis	Ra226_Ra228		1	658860	CAH	EET SL	04/26/24 11:26

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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



Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Lithium

Laboratory: Eurofins St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	373	12-01-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9315	PrecSep-21	Water	Radium-226
9320	PrecSep_0	Water	Radium-228
Ra226_Ra228		Water	Combined Radium 226 + 228

Method Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET 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.

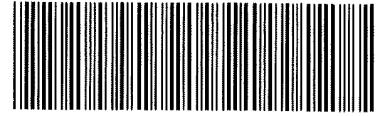
Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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



Environment Testing
America



310-276843 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD</u>			
City/State:	CITY	STATE	Project:
		<u>IA</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>3-14-24</u>	<u>1655</u>	<u>MC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee			
<input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>5</u>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>T</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>3.1</u>		Corrected Temp (°C): <u>3.1</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			





Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD</u>			
City/State:	CITY	STATE	Project:
		<u>IA</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>3-14-24</u>	<u>1655</u>	<u>MC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee			
<input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>5</u>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>T</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>2.3</u>		Corrected Temp (°C): <u>2.3</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



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Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD</u>			
City/State:	CITY	STATE	Project:
		<u>IA</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>3-14-24</u>	<u>1655</u>	<u>MC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee			
<input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>3</u> of <u>5</u>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>T</u>	Correction Factor (°C):	<u>0</u>
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>4.1</u>	Corrected Temp (°C):	<u>4.1</u>
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			





Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD</u>			
City/State:	CITY	STATE	Project:
		<u>IA</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>3-14-24</u>	<u>1655</u>	<u>MC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee			
<input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>4</u> of <u>5</u>	
Cooler Custody Seals Present? No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present? No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>T</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>4.2</u>		Corrected Temp (°C): <u>4.2</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			





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Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD</u>			
City/State:	CITY	STATE	Project:
		<u>IA</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>3-14-24</u>	<u>1655</u>	<u>MC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee			
<input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>5</u> of <u>5</u>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>T</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>3.8</u>		Corrected Temp (°C): <u>3.8</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE. If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Client Information		Sampler: <i>Paul Richards from Laxsm</i>		Lab PM: Zach Bindert		Carrier Tracking No(s)		COC No:		
Client Contact: Kevin Armstrong		Phone: 712-898-9131		E-Mail: zach.bindert@et.eurofinsus.com		State of Origin: Iowa		Page: Page 1 of 2		
Company: GHD Services Inc.		PWSID:		Analysis Requested		Total Number of Containers		Job #:		
Address: 11228 Aurora Avenue		Due Date Requested		9316_Ra226 - Standard Target List				Preservation Codes:		
City: Des Moines		TAT Requested (days): Standard		9320_Ra228 - Standard Target List				A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other		
State, Zip: IA, 50322-7905		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		9056A_ORGFM_28D - (MOD) Chloride, Fluoride, Sulfate				M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - PH 4-5 X - Trizma Y - Trizma Z - other (specify)		
Phone: 515-414-3935(Tel)		PO #: 340017051		9620B_7470A - CCR Metals list				Special Instructions/Note		
Email: Kevin.Armstrong@ghd.com		WO #: 31017262		TTS 2640C_Calcd, SM4500_H+						
Project Name: MEC Neal South - Semiannual CCR		Project #: 12576485-003 01		Perform MS/MSD (Yes or No)						
Site: Neal South CCR Monofill		SSOW#: 12576485-02		Field Filtered Sample (Yes or No)						
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Preservation Code	Matrix (W=water, S=solid, O=volatile, BT=Tissue, AA=Air)	9316_Ra226 - Standard Target List	9320_Ra228 - Standard Target List	9056A_ORGFM_28D - (MOD) Chloride, Fluoride, Sulfate	9620B_7470A - CCR Metals list	TTS 2640C_Calcd, SM4500_H+
MW02-GW-0324	3/12/24	1545	G		Water	X	X	X	X	
MW04-GW-0324	3/12/24	1115	G		Water	X	X	X	X	
MW08-GW-0324	3/13/24	0900	G		Water	X	X	X	X	
MW10-GW-0324	3/13/24	1105	G		Water	X	X	X	X	
MW11-GW-0324	3/13/24	1130	G		Water	X	X	X	X	
MW12-GW-0324	3/12/24	1800	G		Water	X	X	X	X	
MW13-GW-0324	3/12/24	1705	G		Water	X	X	X	X	
MW14-GW-0324	3/11/24	1830	G		Water	X	X	X	X	
MW15-GW-0324	3/13/24	1010	G		Water	X	X	X	X	
MW16-GW-0324	3/11/24	1710	G		Water	X	X	X	X	
MW17-GW-0324	3/12/24	1443	G		Water	X	X	X	X	
Possible Hazard Identification										
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological										
Deliverable Requested I II III IV Other (specify)										
Empty Kit Relinquished by:										
Relinquished by: <i>Paul Richards</i> Date: 3/14/24 1100 Company: GHD										
Relinquished by: Date: Date/Time: 3-14-24 1655 Company:										
Relinquished by: Date/Time: Company:										
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No										
Custody Seal No: Cooler Temperature(s) °C and Other Remarks:										



Client Information		Sampler: <u>Paula Richards</u> Lab PM: <u>Zach Bmdert</u>		Carrier Tracking No(s)									
Client Contact: Kevin Armstrong		Phone: <u>712-898-9031</u> E-Mail: <u>zach.bmdert@et.eurofins.com</u>		State of Origin: <u>Iowa</u>									
Company: GHD Services Inc.		PWSID:		COC No.									
Address: 11228 Aurora Avenue		Due Date Requested		Page: Page 2 of 2									
City: Des Moines		TAT Requested (days): <u>Standard</u>		Job #:									
State Zip: IA, 50322-7905		Compliance Project: <u>Δ Yes Δ No</u>		Preservation Codes									
Phone: 515-414-3935(Tel)		PO #: 340017051		A - HCL N - None O - AshNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - DI Water Y - Trizma Z - other (specify)									
Email: Kevin.Armstrong@ghd.com		WO #: 31017262		Other:									
Project Name: MEC Neal South - Semiannual CCR		Project #: 12576485-003 01											
Site: Neal South CCR Monofill		SSOW#: 12576485-02											
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, E=Ex-Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315 Ra226 - Standard Target List	9320 Ra228 - Standard Target List	9056A_ORGM_28D - (MOD) Chloride, Fluoride, Sulfate	6020B_7470A - CCR Metals list	TDS 2540C, Calcd, SM4500_H+	Total Number of Containers	Special Instructions/Note
MW18-GW-0324	3/12/24	1310	G	Water	N	N	X	X	X	X		5	
MW19-GW-0324	3/12/24	0840	G	Water	N	N	X	X	X	X		5	
MW20-GW-0324	3/12/24	1020	G	Water	N	N	X	X	X	X		5	
MW21-GW-0324	3/13/24	1100	G	Water	N	N	X	X	X	X		5	
DP01-GW-0324	3/12/24	—	G	Water	N	N	X	X	X	X		5	
<i>PR</i>													
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological													
Deliverable Requested I II III IV Other (specify)													
Empty Kit Relinquished by													
Date													
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months													
Special Instructions/QC Requirements All Appendix III and Appendix IV constituents.													
Database Facility Code: 11114654-GD-MidAmer													
Method of Shipment													
Received by													
Date/Time: <u>3-14-24 1100</u> Company: <u>GHG</u>													
Received by													
Date/Time: <u>3-14-24 1655</u> Company: _____													
Received by													
Date/Time: _____ Company: _____													
Cooler Temperature(s) °C and Other Remarks:													



Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-276843-1

Login Number: 276843

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Tracer/Carrier Summary

Client: GHD Services Inc.
 Project/Site: MEC Neal South Monofill CCR

Job ID: 310-276843-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (30-110)	
310-276843-1	MW02-GW-0324	71.9	
310-276843-2	MW04-GW-0324	91.2	
310-276843-3	MW08-GW-0324	90.5	
310-276843-4	MW10-GW-0324	83.0	
310-276843-5	MW11-GW-0324	88.9	
310-276843-6	MW12-GW-0324	95.9	
310-276843-7	MW13-GW-0324	21.1 X	
310-276843-8	MW14-GW-0324	12.9 X	
310-276843-9	MW15-GW-0324	80.2	
310-276843-10	MW16-GW-0324	86.1	
310-276843-10 MS	MW16-GW-0324	87.4	
310-276843-10 MSD	MW16-GW-0324	87.9	
310-276843-11	MW17-GW-0324	70.6	
310-276843-12	MW18-GW-0324	86.9	
310-276843-13	MW19-GW-0324	79.4	
310-276843-14	MW20-GW-0324	83.8	
310-276843-15	MW21-GW-0324	84.5	
310-276843-16	DP01-GW-0324	87.9	
LCS 160-653036/2-A	Lab Control Sample	93.8	
MB 160-653036/1-A	Method Blank	88.7	

Tracer/Carrier Legend
 Ba = Barium

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (30-110)	Y (30-110)
310-276843-1	MW02-GW-0324	71.9	84.9
310-276843-2	MW04-GW-0324	91.2	83.0
310-276843-3	MW08-GW-0324	90.5	84.1
310-276843-4	MW10-GW-0324	83.0	82.6
310-276843-5	MW11-GW-0324	88.9	81.5
310-276843-6	MW12-GW-0324	95.9	83.0
310-276843-7	MW13-GW-0324	94.7	87.1
310-276843-8	MW14-GW-0324	12.9 X	82.2
310-276843-9	MW15-GW-0324	80.2	85.2
310-276843-10	MW16-GW-0324	86.1	84.9
310-276843-10 MS	MW16-GW-0324	87.4	82.6
310-276843-10 MSD	MW16-GW-0324	87.9	85.2
310-276843-11	MW17-GW-0324	70.6	85.6
310-276843-12	MW18-GW-0324	86.9	81.5
310-276843-13	MW19-GW-0324	79.4	84.9
310-276843-14	MW20-GW-0324	83.8	87.1
310-276843-15	MW21-GW-0324	84.5	80.7
310-276843-16	DP01-GW-0324	87.9	84.1
LCS 160-653037/2-A	Lab Control Sample	93.8	85.2
LCS 160-656136/2-A	Lab Control Sample	95.9	87.5

Tracer/Carrier Summary

Client: GHD Services Inc.

Job ID: 310-276843-1

Project/Site: MEC Neal South Monofill CCR

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

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba	Y
		(30-110)	(30-110)
LCSD 160-656136/6-A	Lab Control Sample Dup	101	85.2
MB 160-653037/1-A	Method Blank	88.7	85.6
MB 160-656136/1-A	Method Blank	93.9	87.9

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

1
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14



ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 3/25/2024 12:03:11 PM

JOB DESCRIPTION

MEC Neal South PME Monitoring
12576485-003.01

JOB NUMBER

310-276844-1

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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3/25/2024 12:03:11 PM

Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401



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Case Narrative

Client: GHD Services Inc.
Project: MEC Neal South PME Monitoring

Job ID: 310-276844-1

Job ID: 310-276844-1

Eurofins Cedar Falls

Job Narrative 310-276844-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 3/14/2024 4:55 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.3°C and 3.3°C.

HPLC/IC

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

Metals

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

Eurofins Cedar Falls

Sample Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
SDG: 12576485-003.01

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-276844-1	MW26-GW-0324	Water	03/11/24 15:35	03/14/24 16:55
310-276844-2	MW28-GW-0324	Water	03/12/24 18:15	03/14/24 16:55
310-276844-3	MW30-GW-0324	Water	03/11/24 18:55	03/14/24 16:55
310-276844-4	MW32-GW-0324	Water	03/11/24 17:15	03/14/24 16:55
310-276844-5	MW33-GW-0324	Water	03/11/24 15:00	03/14/24 16:55
310-276844-6	MW34-GW-0324	Water	03/11/24 13:20	03/14/24 16:55
310-276844-7	MW36-GW-0324	Water	03/11/24 11:55	03/14/24 16:55
310-276844-8	MW43-GW-0324	Water	03/12/24 16:40	03/14/24 16:55
310-276844-9	MW49-GW-0324	Water	03/12/24 13:15	03/14/24 16:55
310-276844-10	MW50-GW-0324	Water	03/12/24 11:25	03/14/24 16:55
310-276844-11	MW51-GW-0324	Water	03/12/24 09:20	03/14/24 16:55
310-276844-12	MW52-GW-0324	Water	03/12/24 15:10	03/14/24 16:55
310-276844-13	MW53-GW-0324	Water	03/12/24 11:50	03/14/24 16:55
310-276844-14	DP02-GW-0324	Water	03/12/24 00:00	03/14/24 16:55

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Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
SDG: 12576485-003.01

Client Sample ID: MW26-GW-0324

Lab Sample ID: 310-276844-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	135		5.00		mg/L	5		9056A	Total/NA
Calcium	173		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW28-GW-0324

Lab Sample ID: 310-276844-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	60.3		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0196		0.00200		mg/L	1		6020B	Total/NA
Calcium	159		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW30-GW-0324

Lab Sample ID: 310-276844-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	107		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0765		0.00200		mg/L	1		6020B	Total/NA
Calcium	166		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW32-GW-0324

Lab Sample ID: 310-276844-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	151		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0515		0.00200		mg/L	1		6020B	Total/NA
Calcium	147		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW33-GW-0324

Lab Sample ID: 310-276844-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	375		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00383		0.00200		mg/L	1		6020B	Total/NA
Calcium	194		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW34-GW-0324

Lab Sample ID: 310-276844-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	169		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0166		0.00200		mg/L	1		6020B	Total/NA
Calcium	181		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW36-GW-0324

Lab Sample ID: 310-276844-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	126		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0267		0.00200		mg/L	1		6020B	Total/NA
Calcium	151		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW43-GW-0324

Lab Sample ID: 310-276844-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	170		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0693		0.00200		mg/L	1		6020B	Total/NA
Calcium	184		0.500		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
SDG: 12576485-003.01

Client Sample ID: MW49-GW-0324

Lab Sample ID: 310-276844-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	101		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0312		0.00200		mg/L	1		6020B	Total/NA
Calcium	107		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW50-GW-0324

Lab Sample ID: 310-276844-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	341		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00916		0.00200		mg/L	1		6020B	Total/NA
Calcium	166		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW51-GW-0324

Lab Sample ID: 310-276844-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	186		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0522		0.00200		mg/L	1		6020B	Total/NA
Calcium	159		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW52-GW-0324

Lab Sample ID: 310-276844-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	264		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00396		0.00200		mg/L	1		6020B	Total/NA
Calcium	157		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW53-GW-0324

Lab Sample ID: 310-276844-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	51.9		5.00		mg/L	5		9056A	Total/NA
Calcium	79.7		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: DP02-GW-0324

Lab Sample ID: 310-276844-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	338		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00955		0.00200		mg/L	1		6020B	Total/NA
Calcium	184		0.500		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW26-GW-0324

Lab Sample ID: 310-276844-1

Date Collected: 03/11/24 15:35

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	135		5.00		mg/L			03/15/24 21:48	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 20:46	1
Calcium	173		0.500		mg/L		03/18/24 09:00	03/18/24 20:46	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW28-GW-0324

Lab Sample ID: 310-276844-2

Date Collected: 03/12/24 18:15

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	60.3		5.00		mg/L			03/19/24 16:38	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0196		0.00200		mg/L		03/18/24 09:00	03/18/24 20:51	1
Calcium	159		0.500		mg/L		03/18/24 09:00	03/18/24 20:51	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW30-GW-0324

Lab Sample ID: 310-276844-3

Date Collected: 03/11/24 18:55

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	107		5.00		mg/L			03/15/24 22:01	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0765		0.00200		mg/L		03/18/24 09:00	03/18/24 20:53	1
Calcium	166		0.500		mg/L		03/18/24 09:00	03/18/24 20:53	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW32-GW-0324

Lab Sample ID: 310-276844-4

Date Collected: 03/11/24 17:15

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	151		5.00		mg/L			03/15/24 22:14	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0515		0.00200		mg/L		03/18/24 09:00	03/18/24 20:55	1
Calcium	147		0.500		mg/L		03/18/24 09:00	03/18/24 20:55	1



Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW33-GW-0324

Lab Sample ID: 310-276844-5

Date Collected: 03/11/24 15:00

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	375		5.00		mg/L			03/15/24 22:27	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00383		0.00200		mg/L		03/18/24 09:00	03/18/24 20:57	1
Calcium	194		0.500		mg/L		03/18/24 09:00	03/18/24 20:57	1



Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW34-GW-0324

Lab Sample ID: 310-276844-6

Date Collected: 03/11/24 13:20

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	169		5.00		mg/L			03/15/24 22:40	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0166		0.00200		mg/L		03/18/24 09:00	03/18/24 20:59	1
Calcium	181		0.500		mg/L		03/18/24 09:00	03/18/24 20:59	1



Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW36-GW-0324

Lab Sample ID: 310-276844-7

Date Collected: 03/11/24 11:55

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	126		5.00		mg/L			03/15/24 22:53	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0267		0.00200		mg/L		03/18/24 09:00	03/18/24 21:10	1
Calcium	151		0.500		mg/L		03/18/24 09:00	03/18/24 21:10	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW43-GW-0324

Lab Sample ID: 310-276844-8

Date Collected: 03/12/24 16:40

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	170		5.00		mg/L			03/19/24 16:52	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0693		0.00200		mg/L		03/18/24 09:00	03/18/24 21:12	1
Calcium	184		0.500		mg/L		03/18/24 09:00	03/18/24 21:12	1



Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW49-GW-0324

Lab Sample ID: 310-276844-9

Date Collected: 03/12/24 13:15

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	101		5.00		mg/L			03/19/24 17:06	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0312		0.00200		mg/L		03/18/24 09:00	03/18/24 21:14	1
Calcium	107		0.500		mg/L		03/18/24 09:00	03/18/24 21:14	1



Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW50-GW-0324

Lab Sample ID: 310-276844-10

Date Collected: 03/12/24 11:25

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	341		5.00		mg/L			03/19/24 17:20	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00916		0.00200		mg/L		03/18/24 09:00	03/18/24 21:17	1
Calcium	166		0.500		mg/L		03/18/24 09:00	03/18/24 21:17	1



Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW51-GW-0324

Lab Sample ID: 310-276844-11

Date Collected: 03/12/24 09:20

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	186		5.00		mg/L			03/19/24 17:34	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0522		0.00200		mg/L		03/18/24 09:00	03/18/24 21:19	1
Calcium	159		0.500		mg/L		03/18/24 09:00	03/18/24 21:19	1



Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW52-GW-0324

Lab Sample ID: 310-276844-12

Date Collected: 03/12/24 15:10

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	264		5.00		mg/L			03/19/24 18:17	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00396		0.00200		mg/L		03/18/24 09:00	03/18/24 21:29	1
Calcium	157		0.500		mg/L		03/18/24 09:00	03/18/24 21:29	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: MW53-GW-0324

Lab Sample ID: 310-276844-13

Date Collected: 03/12/24 11:50

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	51.9		5.00		mg/L			03/19/24 18:59	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 21:40	1
Calcium	79.7		0.500		mg/L		03/18/24 09:00	03/19/24 19:04	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Client Sample ID: DP02-GW-0324

Lab Sample ID: 310-276844-14

Date Collected: 03/12/24 00:00

Matrix: Water

Date Received: 03/14/24 16:55

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	338		5.00		mg/L			03/19/24 19:13	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00955		0.00200		mg/L		03/18/24 09:00	03/18/24 21:42	1
Calcium	184		0.500		mg/L		03/18/24 09:00	03/19/24 19:07	1



Definitions/Glossary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
SDG: 12576485-003.01

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

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

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
SDG: 12576485-003.01

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-416333/3
Matrix: Water
Analysis Batch: 416333

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.00		1.00		mg/L			03/15/24 18:05	1

Lab Sample ID: LCS 310-416333/4
Matrix: Water
Analysis Batch: 416333

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	10.40		mg/L		104	90 - 110

Lab Sample ID: MB 310-416442/3
Matrix: Water
Analysis Batch: 416442

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.00		1.00		mg/L			03/19/24 13:21	1

Lab Sample ID: LCS 310-416442/4
Matrix: Water
Analysis Batch: 416442

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	10.91		mg/L		109	90 - 110

Lab Sample ID: 310-276844-11 MS
Matrix: Water
Analysis Batch: 416442

Client Sample ID: MW51-GW-0324
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	186		25.0	210.6	4	mg/L		97	80 - 120

Lab Sample ID: 310-276844-11 MSD
Matrix: Water
Analysis Batch: 416442

Client Sample ID: MW51-GW-0324
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	186		25.0	207.9	4	mg/L		86	80 - 120	1	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-416146/1-A
Matrix: Water
Analysis Batch: 416292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 416146

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		03/18/24 09:00	03/18/24 20:42	1
Calcium	<0.500		0.500		mg/L		03/18/24 09:00	03/18/24 20:42	1

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
SDG: 12576485-003.01

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

Lab Sample ID: LCS 310-416146/2-A
Matrix: Water
Analysis Batch: 416292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 416146

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Arsenic	0.200	0.2015		mg/L		101	80 - 120	
Calcium	2.00	1.645		mg/L		82	80 - 120	

Lab Sample ID: 310-276844-11 MS
Matrix: Water
Analysis Batch: 416292

Client Sample ID: MW51-GW-0324
Prep Type: Total/NA
Prep Batch: 416146

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
Arsenic	0.0522		0.200	0.2634		mg/L		106	75 - 125	
Calcium	159		2.00	165.9	4	mg/L		324	75 - 125	

Lab Sample ID: 310-276844-11 MSD
Matrix: Water
Analysis Batch: 416292

Client Sample ID: MW51-GW-0324
Prep Type: Total/NA
Prep Batch: 416146

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD	
											RPD	Limit
Arsenic	0.0522		0.200	0.2647		mg/L		106	75 - 125		1	20
Calcium	159		2.00	164.4	4	mg/L		252	75 - 125		1	20

Lab Sample ID: 310-276844-1 DU
Matrix: Water
Analysis Batch: 416292

Client Sample ID: MW26-GW-0324
Prep Type: Total/NA
Prep Batch: 416146

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit	
Arsenic	<0.00200		<0.00200		mg/L		NC	20	
Calcium	173		167.3		mg/L		4	20	

QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
SDG: 12576485-003.01

HPLC/IC

Analysis Batch: 416333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276844-1	MW26-GW-0324	Total/NA	Water	9056A	
310-276844-3	MW30-GW-0324	Total/NA	Water	9056A	
310-276844-4	MW32-GW-0324	Total/NA	Water	9056A	
310-276844-5	MW33-GW-0324	Total/NA	Water	9056A	
310-276844-6	MW34-GW-0324	Total/NA	Water	9056A	
310-276844-7	MW36-GW-0324	Total/NA	Water	9056A	
MB 310-416333/3	Method Blank	Total/NA	Water	9056A	
LCS 310-416333/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 416442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276844-2	MW28-GW-0324	Total/NA	Water	9056A	
310-276844-8	MW43-GW-0324	Total/NA	Water	9056A	
310-276844-9	MW49-GW-0324	Total/NA	Water	9056A	
310-276844-10	MW50-GW-0324	Total/NA	Water	9056A	
310-276844-11	MW51-GW-0324	Total/NA	Water	9056A	
310-276844-12	MW52-GW-0324	Total/NA	Water	9056A	
310-276844-13	MW53-GW-0324	Total/NA	Water	9056A	
310-276844-14	DP02-GW-0324	Total/NA	Water	9056A	
MB 310-416442/3	Method Blank	Total/NA	Water	9056A	
LCS 310-416442/4	Lab Control Sample	Total/NA	Water	9056A	
310-276844-11 MS	MW51-GW-0324	Total/NA	Water	9056A	
310-276844-11 MSD	MW51-GW-0324	Total/NA	Water	9056A	

Metals

Prep Batch: 416146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276844-1	MW26-GW-0324	Total/NA	Water	3005A	
310-276844-2	MW28-GW-0324	Total/NA	Water	3005A	
310-276844-3	MW30-GW-0324	Total/NA	Water	3005A	
310-276844-4	MW32-GW-0324	Total/NA	Water	3005A	
310-276844-5	MW33-GW-0324	Total/NA	Water	3005A	
310-276844-6	MW34-GW-0324	Total/NA	Water	3005A	
310-276844-7	MW36-GW-0324	Total/NA	Water	3005A	
310-276844-8	MW43-GW-0324	Total/NA	Water	3005A	
310-276844-9	MW49-GW-0324	Total/NA	Water	3005A	
310-276844-10	MW50-GW-0324	Total/NA	Water	3005A	
310-276844-11	MW51-GW-0324	Total/NA	Water	3005A	
310-276844-12	MW52-GW-0324	Total/NA	Water	3005A	
310-276844-13	MW53-GW-0324	Total/NA	Water	3005A	
310-276844-14	DP02-GW-0324	Total/NA	Water	3005A	
MB 310-416146/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-416146/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-276844-11 MS	MW51-GW-0324	Total/NA	Water	3005A	
310-276844-11 MSD	MW51-GW-0324	Total/NA	Water	3005A	
310-276844-1 DU	MW26-GW-0324	Total/NA	Water	3005A	

Analysis Batch: 416292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276844-1	MW26-GW-0324	Total/NA	Water	6020B	416146

Eurofins Cedar Falls

QC Association Summary

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
 SDG: 12576485-003.01

Metals (Continued)

Analysis Batch: 416292 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276844-2	MW28-GW-0324	Total/NA	Water	6020B	416146
310-276844-3	MW30-GW-0324	Total/NA	Water	6020B	416146
310-276844-4	MW32-GW-0324	Total/NA	Water	6020B	416146
310-276844-5	MW33-GW-0324	Total/NA	Water	6020B	416146
310-276844-6	MW34-GW-0324	Total/NA	Water	6020B	416146
310-276844-7	MW36-GW-0324	Total/NA	Water	6020B	416146
310-276844-8	MW43-GW-0324	Total/NA	Water	6020B	416146
310-276844-9	MW49-GW-0324	Total/NA	Water	6020B	416146
310-276844-10	MW50-GW-0324	Total/NA	Water	6020B	416146
310-276844-11	MW51-GW-0324	Total/NA	Water	6020B	416146
310-276844-12	MW52-GW-0324	Total/NA	Water	6020B	416146
310-276844-13	MW53-GW-0324	Total/NA	Water	6020B	416146
310-276844-14	DP02-GW-0324	Total/NA	Water	6020B	416146
MB 310-416146/1-A	Method Blank	Total/NA	Water	6020B	416146
LCS 310-416146/2-A	Lab Control Sample	Total/NA	Water	6020B	416146
310-276844-11 MS	MW51-GW-0324	Total/NA	Water	6020B	416146
310-276844-11 MSD	MW51-GW-0324	Total/NA	Water	6020B	416146
310-276844-1 DU	MW26-GW-0324	Total/NA	Water	6020B	416146

Analysis Batch: 416425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-276844-13	MW53-GW-0324	Total/NA	Water	6020B	416146
310-276844-14	DP02-GW-0324	Total/NA	Water	6020B	416146

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
SDG: 12576485-003.01

Client Sample ID: MW26-GW-0324

Lab Sample ID: 310-276844-1

Date Collected: 03/11/24 15:35

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416333	QTZ5	EET CF	03/15/24 21:48
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 20:46

Client Sample ID: MW28-GW-0324

Lab Sample ID: 310-276844-2

Date Collected: 03/12/24 18:15

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 16:38
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 20:51

Client Sample ID: MW30-GW-0324

Lab Sample ID: 310-276844-3

Date Collected: 03/11/24 18:55

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416333	QTZ5	EET CF	03/15/24 22:01
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 20:53

Client Sample ID: MW32-GW-0324

Lab Sample ID: 310-276844-4

Date Collected: 03/11/24 17:15

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416333	QTZ5	EET CF	03/15/24 22:14
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 20:55

Client Sample ID: MW33-GW-0324

Lab Sample ID: 310-276844-5

Date Collected: 03/11/24 15:00

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416333	QTZ5	EET CF	03/15/24 22:27
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 20:57

Client Sample ID: MW34-GW-0324

Lab Sample ID: 310-276844-6

Date Collected: 03/11/24 13:20

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416333	QTZ5	EET CF	03/15/24 22:40

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
SDG: 12576485-003.01

Client Sample ID: MW34-GW-0324

Lab Sample ID: 310-276844-6

Date Collected: 03/11/24 13:20

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 20:59

Client Sample ID: MW36-GW-0324

Lab Sample ID: 310-276844-7

Date Collected: 03/11/24 11:55

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416333	QTZ5	EET CF	03/15/24 22:53
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 21:10

Client Sample ID: MW43-GW-0324

Lab Sample ID: 310-276844-8

Date Collected: 03/12/24 16:40

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 16:52
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 21:12

Client Sample ID: MW49-GW-0324

Lab Sample ID: 310-276844-9

Date Collected: 03/12/24 13:15

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 17:06
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 21:14

Client Sample ID: MW50-GW-0324

Lab Sample ID: 310-276844-10

Date Collected: 03/12/24 11:25

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 17:20
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 21:17

Client Sample ID: MW51-GW-0324

Lab Sample ID: 310-276844-11

Date Collected: 03/12/24 09:20

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 17:34

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
SDG: 12576485-003.01

Client Sample ID: MW51-GW-0324

Lab Sample ID: 310-276844-11

Date Collected: 03/12/24 09:20

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 21:19

Client Sample ID: MW52-GW-0324

Lab Sample ID: 310-276844-12

Date Collected: 03/12/24 15:10

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 18:17
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 21:29

Client Sample ID: MW53-GW-0324

Lab Sample ID: 310-276844-13

Date Collected: 03/12/24 11:50

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 18:59
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 21:40
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 19:04

Client Sample ID: DP02-GW-0324

Lab Sample ID: 310-276844-14

Date Collected: 03/12/24 00:00

Matrix: Water

Date Received: 03/14/24 16:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	416442	QTZ5	EET CF	03/19/24 19:13
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416292	NFT2	EET CF	03/18/24 21:42
Total/NA	Prep	3005A			416146	QTZ5	EET CF	03/18/24 09:00
Total/NA	Analysis	6020B		1	416425	NFT2	EET CF	03/19/24 19:07

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
SDG: 12576485-003.01

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

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

Method Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-276844-1
SDG: 12576485-003.01

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

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

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401





Environment Testing
America



310-276844 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD</u>			
City/State:	CITY	STATE	Project:
		<u>IA</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>3-14-24</u>	<u>1655</u>	<u>MC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee			
<input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID:	<u>T</u>	Correction Factor (°C):	<u>0</u>
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>3.3</u>	Corrected Temp (°C):	<u>3.3</u>
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			





Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

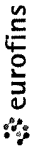
Client Information			
Client: <u>GHD</u>			
City/State:	CITY	STATE	Project:
		<u>IA</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>3-14-24</u>	<u>1655</u>	<u>MC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee			
<input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>2</u>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>T</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>2.3</u>		Corrected Temp (°C): <u>2.3</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Client Information		Sampler: THAO LAKSON		Lab P.M. Zach Bindert		Carrier Tracking No(s)		COC No:	
Client Contact: Kevin Armstrong		Phone: 515-491-7191		E-Mail: zach.bindert@et.eurofins.com		State of Origin: Iowa		Page: Page 1 of 2	
Company: GHD Services Inc.		PWSID:		Analysis Requested		Job #:		Preservation Codes	
Address: 11228 Aurora Avenue		Due Date Requested		Perform MS/MSD (Yes or No)		6020B - Arsenic and Calcium		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other	
City: Des Moines		TAT Requested (days) Standard		Field Filtered Sample (Yes or No)		9066A_ORGFM_28B - (MOD) Sulfate		A - HCl B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
State, Zip: IA, 50322-7905		Compliance Project: Δ Yes Δ No		Sample Date		Sample Time		Sample Type (C=comp, G=grab)	
Phone: 515-414-3935(Tel)		PO #: 340017051		Sample Date		Sample Time		Matrix (W=water, S=solid, O=wastefliq, B= tissue, A=air)	
Email: Kevin.Armstrong@ghd.com		WO #: 31017262		Sample Date		Sample Time		Preservation Code:	
Project Name: MEC Neal South PME Monitoring		Project #: 12576485-003 01		Sample Date		Sample Time		Special Instructions/Note.	
Site: Neal South CCR Monofill		SSOW#: 12576485-02		Sample Date		Sample Time		Total Number of Containers	
Sample Identification		Sample Date		Sample Time		Sample Type		Matrix	
MW26-GW-0324		3/11/24		1535		G		Water	
MW28-GW-0324		3/12/24		1815		G		Water	
MW30-GW-0324		3/11/24		1855		G		Water	
MW32-GW-0324		3/11/24		1715		G		Water	
MW33-GW-0324		3/11/24		1500		G		Water	
MW34-GW-0324		3/11/24		1320		G		Water	
MW36-GW-0324		3/11/24		1155		G		Water	
MW43-GW-0324		3/12/24		1040		G		Water	
MW49-GW-0324		3/12/24		1315		G		Water	
MW50-GW-0324		3/12/24		1125		G		Water	
MW51-GW-0324		3/12/24		0920		G		Water	
Possible Hazard Identification									
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological									
Deliverable Requested I, II, III, IV, Other (specify)									
Empty Kit Relinquished by									
Relinquished by Paula Pichardo Date/Time: 3/14/24 1100 Company: GHD									
Relinquished by Paula Pichardo Date/Time: 3/14/24 1655 Company: Me									
Relinquished by Paula Pichardo Date/Time: 3/14/24 1655 Company: Me									
Custody Seals Intact: Δ Yes Δ No Cooler Temperature(s) °C and Other Remarks:									



Chain of Custody Record



Client Information Client Contact: Kevin Armstrong Company: GHD Services Inc. Address: 11228 Aurora Avenue City: Des Moines State Zip: IA, 50322-7905 Phone: 515-414-3935(Tel) Email: Kevin.Armstrong@ghd.com Project Name: MEC Neal South PME Monitoring Site: Neal South CCR Monofill		Sampler: <i>THOM WILSON</i> Lab PM: Zach Bindert Phone: <i>515-491-7791</i> E-Mail: zach.bindert@et.eurofins.com PWSID:		Carrier Tracking No(s): State of Origin: Iowa Page: Page 2 of 2 Job #:		COC No Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SOS R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - PH 4-5 Y - Trizma Z - other (specify)	
Due Date Requested TAT Requested (days) Standard Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: 340017051 WO #: 31017262 Project #: 12576485-003 01 SSOW#: 12576485-02		Analysis Requested		Total Number of Containers		Special Instructions/Note:	
Sample Identification MW52-GW-0324 MW53-GW-0324 DP02-GW-0324		Sample Date 3/12/24 3/12/24 3/12/24		Sample Time 1510 1150 —		Sample Type (C=comp, G=grab) G G G	
Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) Water Water Water		Field Filtered Sample (Yes or No) N N N		Perform MS/MSD (Yes or No) N N N		9056A_ORGM_28D - (MOD) Sulfate 9020B - Arsenic and Calcium	
Preservation Code: G G G		D D D		X X X		PR PR PR	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant Deliverable Requested I II III IV Other (specify)		<input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements Database Facility Code 11114654-GD-MigAmer	
Empty Kit Relinquished by:		Date:		Method of Shipment:		Company:	
Relinquished by: <i>Paige Richards</i>		Date/Time: 3/14/24 1150		Received by: <i>MW</i>		Date/Time: 3-14-24 1655	
Relinquished by:		Date/Time:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Received by:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks:		Company:	



Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-276844-1
SDG Number: 12576485-003.01

Login Number: 276844

List Number: 1

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	





ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 7/2/2024 3:28:11 PM

JOB DESCRIPTION

MEC Neal South - Additional June 2024

JOB NUMBER

310-282730-1

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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7/2/2024 3:28:11 PM

Authorized for release by
Zach Bindert, Senior Project Manager
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(319)277-2401



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Case Narrative

Client: GHD Services Inc.
Project: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Job ID: 310-282730-1

Eurofins Cedar Falls

Job Narrative 310-282730-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 6/5/2024 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.4°C.

Metals

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

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Case Narrative

Client: GHD Services Inc.
Project: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Job ID: 310-282730-2

Eurofins Cedar Falls

Job Narrative 310-282730-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 6/5/2024 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.4°C.

Gas Flow Proportional Counter

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

Rad

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

Eurofins Cedar Falls

Sample Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-282730-1	MW12-GW-0624	Water	06/03/24 16:10	06/05/24 16:00
310-282730-2	MW08-GW-0624	Water	06/03/24 15:40	06/05/24 16:00
310-282730-3	MW15-GW-0624	Water	06/03/24 14:35	06/05/24 16:00
310-282730-4	MW14-GW-0624	Water	06/03/24 16:45	06/05/24 16:00
310-282730-5	DP02-GW-0624	Water	06/03/24 00:00	06/05/24 16:00

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Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Client Sample ID: MW12-GW-0624

Lab Sample ID: 310-282730-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.144		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.00672		0.00500		mg/L	1		6020B	Total/NA

Client Sample ID: MW08-GW-0624

Lab Sample ID: 310-282730-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.0809		0.00500		mg/L	1		6020B	Total/NA

Client Sample ID: MW15-GW-0624

Lab Sample ID: 310-282730-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.0227		0.00500		mg/L	1		6020B	Total/NA

Client Sample ID: MW14-GW-0624

Lab Sample ID: 310-282730-4

No Detections.

Client Sample ID: DP02-GW-0624

Lab Sample ID: 310-282730-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	0.141		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.00617		0.00500		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Client Sample ID: MW12-GW-0624

Lab Sample ID: 310-282730-1

Date Collected: 06/03/24 16:10

Matrix: Water

Date Received: 06/05/24 16:00

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.144		0.0100		mg/L		06/06/24 09:30	06/07/24 16:10	1
Selenium	0.00672		0.00500		mg/L		06/06/24 09:30	06/07/24 16:10	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Client Sample ID: MW08-GW-0624

Lab Sample ID: 310-282730-2

Date Collected: 06/03/24 15:40

Matrix: Water

Date Received: 06/05/24 16:00

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.0809		0.00500		mg/L		06/06/24 09:30	06/07/24 16:21	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Client Sample ID: MW15-GW-0624

Lab Sample ID: 310-282730-3

Date Collected: 06/03/24 14:35

Matrix: Water

Date Received: 06/05/24 16:00

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.0227		0.00500		mg/L		06/06/24 09:30	06/07/24 16:32	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Client Sample ID: MW14-GW-0624

Lab Sample ID: 310-282730-4

Date Collected: 06/03/24 16:45

Matrix: Water

Date Received: 06/05/24 16:00

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.270	U	0.135	0.135	1.00	0.270	pCi/L	06/07/24 08:02	07/01/24 23:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	91.3		30 - 110					06/07/24 08:02	07/01/24 23:18	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.597	U	0.353	0.354	1.00	0.597	pCi/L	06/07/24 08:08	07/01/24 12:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	91.3		30 - 110					06/07/24 08:08	07/01/24 12:48	1
Y Carrier	81.5		30 - 110					06/07/24 08:08	07/01/24 12:48	1

Method: TAL-STL 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	<0.597	U	0.378	0.379	5.00	0.597	pCi/L		07/02/24 14:30	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Client Sample ID: DP02-GW-0624

Lab Sample ID: 310-282730-5

Date Collected: 06/03/24 00:00

Matrix: Water

Date Received: 06/05/24 16:00

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.141		0.0100		mg/L		06/06/24 09:30	06/07/24 16:34	1
Selenium	0.00617		0.00500		mg/L		06/06/24 09:30	06/07/24 16:34	1

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Definitions/Glossary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

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.
α	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

QC Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-423677/1-A
Matrix: Water
Analysis Batch: 424025

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 423677

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<0.0100		0.0100		mg/L		06/06/24 09:30	06/07/24 16:06	1
Selenium	<0.00500		0.00500		mg/L		06/06/24 09:30	06/07/24 16:06	1

Lab Sample ID: LCS 310-423677/2-A
Matrix: Water
Analysis Batch: 424025

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 423677

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	0.200	0.2010		mg/L		100	80 - 120
Selenium	0.400	0.3875		mg/L		97	80 - 120

Lab Sample ID: 310-282730-2 MS
Matrix: Water
Analysis Batch: 424025

Client Sample ID: MW08-GW-0624
Prep Type: Total/NA
Prep Batch: 423677

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Selenium	0.0809		0.400	0.4829		mg/L		100	75 - 125

Lab Sample ID: 310-282730-2 MSD
Matrix: Water
Analysis Batch: 424025

Client Sample ID: MW08-GW-0624
Prep Type: Total/NA
Prep Batch: 423677

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Selenium	0.0809		0.400	0.4891		mg/L		102	75 - 125	1	20

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-665103/1-A
Matrix: Water
Analysis Batch: 668815

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665103

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.284	U	0.157	0.157	1.00	0.284	pCi/L	06/07/24 08:02	07/01/24 23:16	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Barium	94.3		30 - 110	06/07/24 08:02	07/01/24 23:16	1

Lab Sample ID: LCS 160-665103/2-A
Matrix: Water
Analysis Batch: 668815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665103

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	10.51		1.32	1.00	0.308	pCi/L	93	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Barium	97.5		30 - 110

Eurofins Cedar Falls

QC Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-665104/1-A
Matrix: Water
Analysis Batch: 668815

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665104

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	<0.557	U	0.245	0.247	1.00	0.557	pCi/L	06/07/24 08:08	07/01/24 12:47	1
Carrier	MB %Yield	MB Qualifier	Limits				Prepared		Analyzed	
Barium	94.3		30 - 110				06/07/24 08:08		07/01/24 12:47	
Y Carrier	86.7		30 - 110				06/07/24 08:08		07/01/24 12:47	

Lab Sample ID: LCS 160-665104/2-A
Matrix: Water
Analysis Batch: 668815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665104

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-228	8.80	9.902		1.33	1.00	0.531	pCi/L	112	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Barium	97.5		30 - 110						
Y Carrier	83.7		30 - 110						

QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Metals

Prep Batch: 423677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282730-1	MW12-GW-0624	Total/NA	Water	3005A	
310-282730-2	MW08-GW-0624	Total/NA	Water	3005A	
310-282730-3	MW15-GW-0624	Total/NA	Water	3005A	
310-282730-5	DP02-GW-0624	Total/NA	Water	3005A	
MB 310-423677/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-423677/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-282730-2 MS	MW08-GW-0624	Total/NA	Water	3005A	
310-282730-2 MSD	MW08-GW-0624	Total/NA	Water	3005A	

Analysis Batch: 424025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282730-1	MW12-GW-0624	Total/NA	Water	6020B	423677
310-282730-2	MW08-GW-0624	Total/NA	Water	6020B	423677
310-282730-3	MW15-GW-0624	Total/NA	Water	6020B	423677
310-282730-5	DP02-GW-0624	Total/NA	Water	6020B	423677
MB 310-423677/1-A	Method Blank	Total/NA	Water	6020B	423677
LCS 310-423677/2-A	Lab Control Sample	Total/NA	Water	6020B	423677
310-282730-2 MS	MW08-GW-0624	Total/NA	Water	6020B	423677
310-282730-2 MSD	MW08-GW-0624	Total/NA	Water	6020B	423677

Rad

Prep Batch: 665103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282730-4	MW14-GW-0624	Total/NA	Water	PrecSep-21	
MB 160-665103/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-665103/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 665104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282730-4	MW14-GW-0624	Total/NA	Water	PrecSep_0	
MB 160-665104/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-665104/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Client Sample ID: MW12-GW-0624

Lab Sample ID: 310-282730-1

Date Collected: 06/03/24 16:10

Matrix: Water

Date Received: 06/05/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			423677	KM3E	EET CF	06/06/24 09:30
Total/NA	Analysis	6020B		1	424025	DHM5	EET CF	06/07/24 16:10

Client Sample ID: MW08-GW-0624

Lab Sample ID: 310-282730-2

Date Collected: 06/03/24 15:40

Matrix: Water

Date Received: 06/05/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			423677	KM3E	EET CF	06/06/24 09:30
Total/NA	Analysis	6020B		1	424025	DHM5	EET CF	06/07/24 16:21

Client Sample ID: MW15-GW-0624

Lab Sample ID: 310-282730-3

Date Collected: 06/03/24 14:35

Matrix: Water

Date Received: 06/05/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			423677	KM3E	EET CF	06/06/24 09:30
Total/NA	Analysis	6020B		1	424025	DHM5	EET CF	06/07/24 16:32

Client Sample ID: MW14-GW-0624

Lab Sample ID: 310-282730-4

Date Collected: 06/03/24 16:45

Matrix: Water

Date Received: 06/05/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			665103	MLT	EET SL	06/07/24 08:02
Total/NA	Analysis	9315		1	668815	SCB	EET SL	07/01/24 23:18
Total/NA	Prep	PrecSep_0			665104	MLT	EET SL	06/07/24 08:08
Total/NA	Analysis	9320		1	668815	SCB	EET SL	07/01/24 12:48
Total/NA	Analysis	Ra226_Ra228		1	669087	FLC	EET SL	07/02/24 14:30

Client Sample ID: DP02-GW-0624

Lab Sample ID: 310-282730-5

Date Collected: 06/03/24 00:00

Matrix: Water

Date Received: 06/05/24 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			423677	KM3E	EET CF	06/06/24 09:30
Total/NA	Analysis	6020B		1	424025	DHM5	EET CF	06/07/24 16:34

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
 EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Lithium

Laboratory: Eurofins St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	373	12-01-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9315	PrecSep-21	Water	Radium-226
9320	PrecSep_0	Water	Radium-228
Ra226_Ra228		Water	Combined Radium 226 + 228

Method Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Metals	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET 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:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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



Environment Testing
America



Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>6-5-24</u>	<u>1600</u>	<u>CC</u>
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID:	<u>9</u>	Correction Factor (°C):	<u>0</u>
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>5.4</u>	Corrected Temp (°C):	<u>5.4</u>
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Client Information		Sampler: <u>Paul Richards</u>		Lab P#: Bindert, Zach T		Carrier Tracking No(s):		COC No: 310-93797-25747 1	
Client Contact: Kevin Armstrong		Phone: 712-898-0681		E-Mail: Zach.Bindert@et.eurofins.com		State of Origin: IA		Page: Page 1 of 1	
Company: GHD Services Inc.		PWSID:		Analysis Requested		Total Number of Containers		Job #:	
Address: 11228 Aurora Avenue		Due Date Requested:		Perform MS/MSD (Yes or No)		9620B - Selenium and Lithium		Preservation Codes: D - HNO3	
City: Des Moines		TAT Requested (days): <u>Standard</u>		Field Filtered Sample (Yes or No)		9620B - Selenium		Other:	
State, Zip: IA, 50322-7905		Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Matrix (W=water, S=solid, O=water/soil, BT=Tissue, A=air)		9316_Ra226 - Standard Target List		Special Instructions/Note:	
Phone: 515-414-3935(Tel)		PO #: 340-017051		Sample Type (C=Comp, G=grab)		9320_Ra228 - Standard Target List		Total Number of Containers	
Email: Kevin.Armstrong@ghd.com		WO #:		Preservation Code:		6020B - Selenium		Other:	
Project Name: MIEC Neal South - Additional June 2024		Project #: 31017262		Sample Date		6020B - Selenium and Lithium		Special Instructions/Note:	
Site: Iowa		SSOW#: 12574485-02		Sample Time		9620B - Selenium and Lithium		Total Number of Containers	
Sample Identification		Sample Date		Sample Time		9620B - Selenium and Lithium		Special Instructions/Note:	
MW12-GW-0624	01/31/24	1010	6	Water	2	X	9620B - Selenium and Lithium	1	
MW08-GW-0624	01/31/24	1546	6	Water	2	X	9620B - Selenium and Lithium	3	
MW15-GW-0624	01/31/24	1435	6	Water	2	X	9620B - Selenium and Lithium	1	
MW14-GW-0624	01/31/24	11045	6	Water	2	X	9620B - Selenium and Lithium	2	
DP02-GW-0624	01/31/24	-	6	Water	2	X	9620B - Selenium and Lithium	1	
<p>Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I, II, III, IV, Other (specify)</p>									
<p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements: <u>SAFETY DATA SHEET 1114954-60 - NICKEL</u></p>									
<p>Empty Kit Relinquished by: <u>Paul Richards</u> Date: <u>01/31/24</u> Time: <u>1730</u> Company: <u>GHG</u></p>									
<p>Relinquished by: <u>Paul Richards</u> Date/Time: <u>01/31/24 1730</u> Company: <u>GHG</u></p>									
<p>Relinquished by: <u>Paul Richards</u> Date/Time: <u>01/31/24 1000</u> Company: <u>GHG</u></p>									
<p>Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Cooler Temperature(s) °C and Other Remarks:</p>									



Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-282730-1

SDG Number:

Login Number: 282730

List Number: 1

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Tracer/Carrier Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Additional June 2024

Job ID: 310-282730-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)							
310-282730-4	MW14-GW-0624	91.3							
LCS 160-665103/2-A	Lab Control Sample	97.5							
MB 160-665103/1-A	Method Blank	94.3							

Tracer/Carrier Legend

Ba = Barium

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)						
310-282730-4	MW14-GW-0624	91.3	81.5						
LCS 160-665104/2-A	Lab Control Sample	97.5	83.7						
MB 160-665104/1-A	Method Blank	94.3	86.7						

Tracer/Carrier Legend

Ba = Barium

Y = Y Carrier



ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 10/16/2024 1:30:48 PM

JOB DESCRIPTION

MEC Neal South - Semiannual CCR
12576485-003.01

JOB NUMBER

310-290943-1

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016



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Case Narrative

Client: GHD Services Inc.
Project: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1

Job ID: 310-290943-1

Eurofins Cedar Falls

Job Narrative 310-290943-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 9/19/2024 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C.

HPLC/IC

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW08-GW-0924 (310-290943-1), MW10-GW-0924 (310-290943-2), MW11-GW-0924 (310-290943-3), MW12-GW-0924 (310-290943-4), MW13-GW-0924 (310-290943-5), MW14-GW-0924 (310-290943-6) and MW21-GW-0924 (310-290943-7). Elevated reporting limits (RLs) are provided.

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

Metals

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

General Chemistry

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

Eurofins Cedar Falls

Case Narrative

Client: GHD Services Inc.
Project: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1

Job ID: 310-290943-2

Eurofins Cedar Falls

Job Narrative 310-290943-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 9/19/2024 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C.

Gas Flow Proportional Counter

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

Rad

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

Eurofins Cedar Falls

Sample Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-290943-1	MW08-GW-0924	Water	09/17/24 15:30	09/19/24 09:40
310-290943-2	MW10-GW-0924	Water	09/17/24 17:30	09/19/24 09:40
310-290943-3	MW11-GW-0924	Water	09/17/24 18:35	09/19/24 09:40
310-290943-4	MW12-GW-0924	Water	09/17/24 16:15	09/19/24 09:40
310-290943-5	MW13-GW-0924	Water	09/17/24 18:05	09/19/24 09:40
310-290943-6	MW14-GW-0924	Water	09/17/24 18:30	09/19/24 09:40
310-290943-7	MW21-GW-0924	Water	09/17/24 16:55	09/19/24 09:40

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Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Client Sample ID: MW08-GW-0924

Lab Sample ID: 310-290943-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.60		5.00		mg/L	5		9056A	Total/NA
Sulfate	186		5.00		mg/L	5		9056A	Total/NA
Barium	0.0965		0.00200		mg/L	1		6020B	Total/NA
Boron	2.05		0.100		mg/L	1		6020B	Total/NA
Calcium	186		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00154		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.117		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.0153		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.0134		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	956		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.2	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW10-GW-0924

Lab Sample ID: 310-290943-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.45		5.00		mg/L	5		9056A	Total/NA
Sulfate	101		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0446		0.00200		mg/L	1		6020B	Total/NA
Barium	0.343		0.00200		mg/L	1		6020B	Total/NA
Boron	0.486		0.100		mg/L	1		6020B	Total/NA
Calcium	160		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00133		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0904		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00443		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	748		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.2	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW11-GW-0924

Lab Sample ID: 310-290943-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	136		5.00		mg/L	5		9056A	Total/NA
Sulfate	322		5.00		mg/L	5		9056A	Total/NA
Barium	0.0442		0.00200		mg/L	1		6020B	Total/NA
Boron	0.505		0.100		mg/L	1		6020B	Total/NA
Calcium	265		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00446		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.109		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.00976		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1140		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW12-GW-0924

Lab Sample ID: 310-290943-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	76.2		5.00		mg/L	5		9056A	Total/NA
Sulfate	406		5.00		mg/L	5		9056A	Total/NA
Barium	0.0596		0.00200		mg/L	1		6020B	Total/NA
Boron	1.44		0.100		mg/L	1		6020B	Total/NA
Calcium	263		0.500		mg/L	1		6020B	Total/NA
Lithium	0.133		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.193		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1230		50.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Client Sample ID: MW12-GW-0924 (Continued)

Lab Sample ID: 310-290943-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	7.0	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW13-GW-0924

Lab Sample ID: 310-290943-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11.0		5.00		mg/L	5		9056A	Total/NA
Sulfate	473		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00215		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0420		0.00200		mg/L	1		6020B	Total/NA
Boron	1.31		0.100		mg/L	1		6020B	Total/NA
Calcium	283		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00179		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.138		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.0760		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1300		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.9	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW14-GW-0924

Lab Sample ID: 310-290943-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17.8		5.00		mg/L	5		9056A	Total/NA
Sulfate	202		5.00		mg/L	5		9056A	Total/NA
Barium	0.0637		0.00200		mg/L	1		6020B	Total/NA
Boron	0.755		0.100		mg/L	1		6020B	Total/NA
Calcium	214		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000640		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.137		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.0264		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	990		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.9	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW21-GW-0924

Lab Sample ID: 310-290943-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	14.5		5.00		mg/L	5		9056A	Total/NA
Sulfate	79.7		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00210		0.00200		mg/L	1		6020B	Total/NA
Barium	0.254		0.00200		mg/L	1		6020B	Total/NA
Boron	0.180		0.100		mg/L	1		6020B	Total/NA
Calcium	169		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000951		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0677		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	594		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.9	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Client Sample ID: MW08-GW-0924

Lab Sample ID: 310-290943-1

Date Collected: 09/17/24 15:30

Matrix: Water

Date Received: 09/19/24 09:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.60		5.00		mg/L			09/26/24 13:37	5
Sulfate	186		5.00		mg/L			09/26/24 13:37	5
Fluoride	<1.00		1.00		mg/L			09/26/24 13:37	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:43	1
Arsenic	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:43	1
Barium	0.0965		0.00200		mg/L		09/20/24 09:00	10/03/24 14:43	1
Beryllium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 14:43	1
Boron	2.05		0.100		mg/L		09/20/24 09:00	10/03/24 14:43	1
Cadmium	<0.000200		0.000200		mg/L		09/20/24 09:00	10/03/24 14:43	1
Calcium	186		0.500		mg/L		09/20/24 09:00	10/03/24 14:43	1
Chromium	<0.00500		0.00500		mg/L		09/20/24 09:00	10/03/24 14:43	1
Cobalt	0.00154		0.000500		mg/L		09/20/24 09:00	10/03/24 14:43	1
Lead	<0.000500		0.000500		mg/L		09/20/24 09:00	10/03/24 14:43	1
Lithium	0.117		0.0100		mg/L		09/20/24 09:00	10/03/24 14:43	1
Molybdenum	0.0153		0.00200		mg/L		09/20/24 09:00	10/03/24 14:43	1
Selenium	0.0134		0.00500		mg/L		09/20/24 09:00	10/03/24 14:43	1
Thallium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 14:43	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	956		50.0		mg/L			09/19/24 20:37	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.2	HF	1.0		SU			09/19/24 10:33	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.157	U	0.0999	0.100	1.00	0.157	pCi/L	09/23/24 08:15	10/15/24 07:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	78.7		30 - 110					09/23/24 08:15	10/15/24 07:28	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.639	U	0.370	0.371	1.00	0.639	pCi/L	09/23/24 08:33	10/10/24 11:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	78.7		30 - 110					09/23/24 08:33	10/10/24 11:35	1
Y Carrier	80.7		30 - 110					09/23/24 08:33	10/10/24 11:35	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Client Sample ID: MW08-GW-0924

Lab Sample ID: 310-290943-1

Date Collected: 09/17/24 15:30

Matrix: Water

Date Received: 09/19/24 09:40

Method: TAL-STL 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	<0.639	U	0.383	0.384	5.00	0.639	pCi/L		10/16/24 13:17	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Client Sample ID: MW10-GW-0924

Lab Sample ID: 310-290943-2

Date Collected: 09/17/24 17:30

Matrix: Water

Date Received: 09/19/24 09:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.45		5.00		mg/L			09/26/24 13:49	5
Sulfate	101		5.00		mg/L			09/26/24 13:49	5
Fluoride	<1.00		1.00		mg/L			09/26/24 13:49	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:54	1
Arsenic	0.0446		0.00200		mg/L		09/20/24 09:00	10/03/24 14:54	1
Barium	0.343		0.00200		mg/L		09/20/24 09:00	10/03/24 14:54	1
Beryllium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 14:54	1
Boron	0.486		0.100		mg/L		09/20/24 09:00	10/03/24 14:54	1
Cadmium	<0.000200		0.000200		mg/L		09/20/24 09:00	10/03/24 14:54	1
Calcium	160		0.500		mg/L		09/20/24 09:00	10/03/24 14:54	1
Chromium	<0.00500		0.00500		mg/L		09/20/24 09:00	10/03/24 14:54	1
Cobalt	0.00133		0.000500		mg/L		09/20/24 09:00	10/03/24 14:54	1
Lead	<0.000500		0.000500		mg/L		09/20/24 09:00	10/03/24 14:54	1
Lithium	0.0904		0.0100		mg/L		09/20/24 09:00	10/03/24 14:54	1
Molybdenum	0.00443		0.00200		mg/L		09/20/24 09:00	10/03/24 14:54	1
Selenium	<0.00500		0.00500		mg/L		09/20/24 09:00	10/03/24 14:54	1
Thallium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 14:54	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	748		50.0		mg/L			09/19/24 20:37	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.2	HF	1.0		SU			09/19/24 10:34	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.192		0.127	0.128	1.00	0.169	pCi/L	09/23/24 08:15	10/15/24 07:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	91.1		30 - 110					09/23/24 08:15	10/15/24 07:28	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.900		0.495	0.501	1.00	0.678	pCi/L	09/23/24 08:33	10/10/24 11:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	91.1		30 - 110					09/23/24 08:33	10/10/24 11:35	1
Y Carrier	71.0		30 - 110					09/23/24 08:33	10/10/24 11:35	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Client Sample ID: MW10-GW-0924

Lab Sample ID: 310-290943-2

Date Collected: 09/17/24 17:30

Matrix: Water

Date Received: 09/19/24 09:40

Method: TAL-STL 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	1.09		0.511	0.517	5.00	0.678	pCi/L		10/16/24 13:17	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Client Sample ID: MW11-GW-0924

Lab Sample ID: 310-290943-3

Date Collected: 09/17/24 18:35

Matrix: Water

Date Received: 09/19/24 09:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	136		5.00		mg/L			09/26/24 14:01	5
Sulfate	322		5.00		mg/L			09/26/24 14:01	5
Fluoride	<1.00		1.00		mg/L			09/26/24 14:01	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:56	1
Arsenic	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:56	1
Barium	0.0442		0.00200		mg/L		09/20/24 09:00	10/03/24 14:56	1
Beryllium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 14:56	1
Boron	0.505		0.100		mg/L		09/20/24 09:00	10/03/24 14:56	1
Cadmium	<0.000200		0.000200		mg/L		09/20/24 09:00	10/03/24 14:56	1
Calcium	265		0.500		mg/L		09/20/24 09:00	10/03/24 14:56	1
Chromium	<0.00500		0.00500		mg/L		09/20/24 09:00	10/03/24 14:56	1
Cobalt	0.00446		0.000500		mg/L		09/20/24 09:00	10/03/24 14:56	1
Lead	<0.000500		0.000500		mg/L		09/20/24 09:00	10/03/24 14:56	1
Lithium	0.109		0.0100		mg/L		09/20/24 09:00	10/03/24 14:56	1
Molybdenum	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:56	1
Selenium	0.00976		0.00500		mg/L		09/20/24 09:00	10/03/24 14:56	1
Thallium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 14:56	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1140		50.0		mg/L			09/19/24 20:47	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.0	HF	1.0		SU			09/19/24 10:35	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	<0.124	U	0.0734	0.0736	1.00	0.124	pCi/L	09/23/24 08:15	10/15/24 07:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	83.9		30 - 110					09/23/24 08:15	10/15/24 07:28	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	<0.703	U	0.466	0.470	1.00	0.703	pCi/L	09/23/24 08:33	10/10/24 11:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	83.9		30 - 110					09/23/24 08:33	10/10/24 11:35	1
Y Carrier	74.8		30 - 110					09/23/24 08:33	10/10/24 11:35	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Client Sample ID: MW11-GW-0924

Lab Sample ID: 310-290943-3

Date Collected: 09/17/24 18:35

Matrix: Water

Date Received: 09/19/24 09:40

Method: TAL-STL 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	0.741		0.472	0.476	5.00	0.703	pCi/L		10/16/24 13:17	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Client Sample ID: MW12-GW-0924

Lab Sample ID: 310-290943-4

Date Collected: 09/17/24 16:15

Matrix: Water

Date Received: 09/19/24 09:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	76.2		5.00		mg/L			09/26/24 14:13	5
Sulfate	406		5.00		mg/L			09/26/24 14:13	5
Fluoride	<1.00		1.00		mg/L			09/26/24 14:13	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:58	1
Arsenic	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:58	1
Barium	0.0596		0.00200		mg/L		09/20/24 09:00	10/03/24 14:58	1
Beryllium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 14:58	1
Boron	1.44		0.100		mg/L		09/20/24 09:00	10/03/24 14:58	1
Cadmium	<0.000200		0.000200		mg/L		09/20/24 09:00	10/03/24 14:58	1
Calcium	263		0.500		mg/L		09/20/24 09:00	10/03/24 14:58	1
Chromium	<0.00500		0.00500		mg/L		09/20/24 09:00	10/03/24 14:58	1
Cobalt	<0.000500		0.000500		mg/L		09/20/24 09:00	10/03/24 14:58	1
Lead	<0.000500		0.000500		mg/L		09/20/24 09:00	10/03/24 14:58	1
Lithium	0.133		0.0100		mg/L		09/20/24 09:00	10/03/24 14:58	1
Molybdenum	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:58	1
Selenium	0.193		0.00500		mg/L		09/20/24 09:00	10/03/24 14:58	1
Thallium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 14:58	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1230		50.0		mg/L			09/19/24 20:47	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.0	HF	1.0		SU			09/19/24 10:36	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	<0.138	U	0.0811	0.0813	1.00	0.138	pCi/L	09/23/24 08:15	10/15/24 07:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	88.6		30 - 110					09/23/24 08:15	10/15/24 07:28	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	0.956		0.411	0.420	1.00	0.545	pCi/L	09/23/24 08:33	10/10/24 11:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	88.6		30 - 110					09/23/24 08:33	10/10/24 11:40	1
Y Carrier	84.9		30 - 110					09/23/24 08:33	10/10/24 11:40	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Client Sample ID: MW12-GW-0924

Lab Sample ID: 310-290943-4

Date Collected: 09/17/24 16:15

Matrix: Water

Date Received: 09/19/24 09:40

Method: TAL-STL 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	1.01		0.419	0.428	5.00	0.545	pCi/L		10/16/24 13:17	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Client Sample ID: MW13-GW-0924

Lab Sample ID: 310-290943-5

Date Collected: 09/17/24 18:05

Matrix: Water

Date Received: 09/19/24 09:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.0		5.00		mg/L			09/26/24 14:37	5
Sulfate	473		5.00		mg/L			09/26/24 14:37	5
Fluoride	<1.00		1.00		mg/L			09/26/24 14:37	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 15:00	1
Arsenic	0.00215		0.00200		mg/L		09/20/24 09:00	10/03/24 15:00	1
Barium	0.0420		0.00200		mg/L		09/20/24 09:00	10/03/24 15:00	1
Beryllium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 15:00	1
Boron	1.31		0.100		mg/L		09/20/24 09:00	10/03/24 15:00	1
Cadmium	<0.000200		0.000200		mg/L		09/20/24 09:00	10/03/24 15:00	1
Calcium	283		0.500		mg/L		09/20/24 09:00	10/03/24 15:00	1
Chromium	<0.00500		0.00500		mg/L		09/20/24 09:00	10/03/24 15:00	1
Cobalt	0.00179		0.000500		mg/L		09/20/24 09:00	10/03/24 15:00	1
Lead	<0.000500		0.000500		mg/L		09/20/24 09:00	10/03/24 15:00	1
Lithium	0.138		0.0100		mg/L		09/20/24 09:00	10/03/24 15:00	1
Molybdenum	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 15:00	1
Selenium	0.0760		0.00500		mg/L		09/20/24 09:00	10/03/24 15:00	1
Thallium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 15:00	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1300		50.0		mg/L			09/19/24 20:47	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	6.9	HF	1.0		SU			09/19/24 10:37	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	0.216		0.134	0.135	1.00	0.186	pCi/L	09/23/24 08:15	10/15/24 07:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	88.1		30 - 110					09/23/24 08:15	10/15/24 07:28	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	1.38		0.453	0.471	1.00	0.530	pCi/L	09/23/24 08:33	10/10/24 11:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	88.1		30 - 110					09/23/24 08:33	10/10/24 11:40	1
Y Carrier	83.4		30 - 110					09/23/24 08:33	10/10/24 11:40	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Client Sample ID: MW13-GW-0924

Lab Sample ID: 310-290943-5

Date Collected: 09/17/24 18:05

Matrix: Water

Date Received: 09/19/24 09:40

Method: TAL-STL 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	1.60		0.472	0.490	5.00	0.530	pCi/L		10/16/24 13:17	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Client Sample ID: MW14-GW-0924

Lab Sample ID: 310-290943-6

Date Collected: 09/17/24 18:30

Matrix: Water

Date Received: 09/19/24 09:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17.8		5.00		mg/L			09/26/24 15:02	5
Sulfate	202		5.00		mg/L			09/26/24 15:02	5
Fluoride	<1.00		1.00		mg/L			09/26/24 15:02	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 15:03	1
Arsenic	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 15:03	1
Barium	0.0637		0.00200		mg/L		09/20/24 09:00	10/03/24 15:03	1
Beryllium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 15:03	1
Boron	0.755		0.100		mg/L		09/20/24 09:00	10/03/24 15:03	1
Cadmium	<0.000200		0.000200		mg/L		09/20/24 09:00	10/03/24 15:03	1
Calcium	214		0.500		mg/L		09/20/24 09:00	10/03/24 15:03	1
Chromium	<0.00500		0.00500		mg/L		09/20/24 09:00	10/03/24 15:03	1
Cobalt	0.000640		0.000500		mg/L		09/20/24 09:00	10/03/24 15:03	1
Lead	<0.000500		0.000500		mg/L		09/20/24 09:00	10/03/24 15:03	1
Lithium	0.137		0.0100		mg/L		09/20/24 09:00	10/03/24 15:03	1
Molybdenum	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 15:03	1
Selenium	0.0264		0.00500		mg/L		09/20/24 09:00	10/03/24 15:03	1
Thallium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 15:03	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	990		50.0		mg/L			09/19/24 20:47	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	6.9	HF	1.0		SU			09/19/24 10:38	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	<0.130	U	0.0933	0.0940	1.00	0.130	pCi/L	09/23/24 08:15	10/15/24 07:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	84.9		30 - 110					09/23/24 08:15	10/15/24 07:29	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	<0.610	U	0.400	0.403	1.00	0.610	pCi/L	09/23/24 08:33	10/10/24 11:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	84.9		30 - 110					09/23/24 08:33	10/10/24 11:40	1
Y Carrier	82.2		30 - 110					09/23/24 08:33	10/10/24 11:40	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Client Sample ID: MW14-GW-0924

Lab Sample ID: 310-290943-6

Date Collected: 09/17/24 18:30

Matrix: Water

Date Received: 09/19/24 09:40

Method: TAL-STL 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	0.684		0.411	0.414	5.00	0.610	pCi/L		10/16/24 13:17	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Client Sample ID: MW21-GW-0924

Lab Sample ID: 310-290943-7

Date Collected: 09/17/24 16:55

Matrix: Water

Date Received: 09/19/24 09:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14.5		5.00		mg/L			09/26/24 15:14	5
Sulfate	79.7		5.00		mg/L			09/26/24 15:14	5
Fluoride	<1.00		1.00		mg/L			09/26/24 15:14	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 15:05	1
Arsenic	0.00210		0.00200		mg/L		09/20/24 09:00	10/03/24 15:05	1
Barium	0.254		0.00200		mg/L		09/20/24 09:00	10/03/24 15:05	1
Beryllium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 15:05	1
Boron	0.180		0.100		mg/L		09/20/24 09:00	10/03/24 15:05	1
Cadmium	<0.000200		0.000200		mg/L		09/20/24 09:00	10/03/24 15:05	1
Calcium	169		0.500		mg/L		09/20/24 09:00	10/03/24 15:05	1
Chromium	<0.00500		0.00500		mg/L		09/20/24 09:00	10/03/24 15:05	1
Cobalt	0.000951		0.000500		mg/L		09/20/24 09:00	10/03/24 15:05	1
Lead	<0.000500		0.000500		mg/L		09/20/24 09:00	10/03/24 15:05	1
Lithium	0.0677		0.0100		mg/L		09/20/24 09:00	10/03/24 15:05	1
Molybdenum	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 15:05	1
Selenium	<0.00500		0.00500		mg/L		09/20/24 09:00	10/03/24 15:05	1
Thallium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 15:05	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	594		50.0		mg/L			09/19/24 20:47	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	6.9	HF	1.0		SU			09/19/24 10:39	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	0.175		0.115	0.116	1.00	0.157	pCi/L	09/23/24 08:15	10/15/24 07:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	88.1		30 - 110					09/23/24 08:15	10/15/24 07:29	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	1.50		0.513	0.532	1.00	0.647	pCi/L	09/23/24 08:33	10/10/24 11:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	88.1		30 - 110					09/23/24 08:33	10/10/24 11:40	1
Y Carrier	82.2		30 - 110					09/23/24 08:33	10/10/24 11:40	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Client Sample ID: MW21-GW-0924

Lab Sample ID: 310-290943-7

Date Collected: 09/17/24 16:55

Matrix: Water

Date Received: 09/19/24 09:40

Method: TAL-STL 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	1.67		0.526	0.544	5.00	0.647	pCi/L		10/16/24 13:17	1

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Definitions/Glossary

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Qualifiers

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

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

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-434607/3
Matrix: Water
Analysis Batch: 434607

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			09/26/24 09:36	1
Sulfate	<1.00		1.00		mg/L			09/26/24 09:36	1
Fluoride	<0.200		0.200		mg/L			09/26/24 09:36	1

Lab Sample ID: LCS 310-434607/4
Matrix: Water
Analysis Batch: 434607

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.933		mg/L		99	90 - 110
Sulfate	10.0	10.11		mg/L		101	90 - 110
Fluoride	2.00	1.899		mg/L		95	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-433736/1-A
Matrix: Water
Analysis Batch: 435214

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 433736

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:07	1
Arsenic	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:07	1
Barium	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:07	1
Beryllium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 14:07	1
Boron	<0.100		0.100		mg/L		09/20/24 09:00	10/03/24 14:07	1
Cadmium	<0.000200		0.000200		mg/L		09/20/24 09:00	10/03/24 14:07	1
Calcium	<0.500		0.500		mg/L		09/20/24 09:00	10/03/24 14:07	1
Chromium	<0.00500		0.00500		mg/L		09/20/24 09:00	10/03/24 14:07	1
Cobalt	<0.000500		0.000500		mg/L		09/20/24 09:00	10/03/24 14:07	1
Lead	<0.000500		0.000500		mg/L		09/20/24 09:00	10/03/24 14:07	1
Lithium	<0.0100		0.0100		mg/L		09/20/24 09:00	10/03/24 14:07	1
Molybdenum	<0.00200		0.00200		mg/L		09/20/24 09:00	10/03/24 14:07	1
Selenium	<0.00500		0.00500		mg/L		09/20/24 09:00	10/03/24 14:07	1
Thallium	<0.00100		0.00100		mg/L		09/20/24 09:00	10/03/24 14:07	1

Lab Sample ID: LCS 310-433736/2-A
Matrix: Water
Analysis Batch: 435214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 433736

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2251		mg/L		113	80 - 120
Arsenic	0.200	0.2179		mg/L		109	80 - 120
Barium	0.100	0.1042		mg/L		104	80 - 120
Beryllium	0.100	0.1022		mg/L		102	80 - 120
Boron	0.200	0.2047		mg/L		102	80 - 120
Cadmium	0.100	0.1043		mg/L		104	80 - 120
Calcium	2.00	2.011		mg/L		101	80 - 120
Chromium	0.100	0.09842		mg/L		98	80 - 120
Cobalt	0.100	0.1126		mg/L		113	80 - 120

Eurofins Cedar Falls

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

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

Lab Sample ID: LCS 310-433736/2-A
Matrix: Water
Analysis Batch: 435214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 433736

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	0.200	0.2134		mg/L		107	80 - 120
Lithium	0.200	0.2096		mg/L		105	80 - 120
Molybdenum	0.200	0.1995		mg/L		100	80 - 120
Selenium	0.400	0.4083		mg/L		102	80 - 120
Thallium	0.100	0.09716		mg/L		97	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-435005/1-A
Matrix: Water
Analysis Batch: 435443

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435005

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:13	1

Lab Sample ID: LCS 310-435005/2-A
Matrix: Water
Analysis Batch: 435443

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435005

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001785		mg/L		107	80 - 120

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

Lab Sample ID: MB 310-433742/1
Matrix: Water
Analysis Batch: 433742

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	<50.0		50.0		mg/L			09/19/24 20:37	1

Lab Sample ID: LCS 310-433742/2
Matrix: Water
Analysis Batch: 433742

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	1000	1028		mg/L		103	88 - 110

Lab Sample ID: MB 310-433743/1
Matrix: Water
Analysis Batch: 433743

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	<50.0		50.0		mg/L			09/19/24 20:47	1

Lab Sample ID: LCS 310-433743/2
Matrix: Water
Analysis Batch: 433743

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	1000	1010		mg/L		101	88 - 110

Eurofins Cedar Falls

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-433664/1
Matrix: Water
Analysis Batch: 433664

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.1		SU		101	98 - 102

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-680560/1-A
Matrix: Water
Analysis Batch: 683558

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 680560

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.128	U	0.0420	0.0422	1.00	0.128	pCi/L	09/23/24 08:15	10/15/24 07:22	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	85.9		30 - 110					09/23/24 08:15	10/15/24 07:22	1

Lab Sample ID: LCS 160-680560/2-A
Matrix: Water
Analysis Batch: 683558

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 680560

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	9.58	9.841		1.09	1.00	0.144	pCi/L	103	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Barium	82.6		30 - 110						

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-680561/1-A
Matrix: Water
Analysis Batch: 682913

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 680561

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.937	U	0.442	0.443	1.00	0.937	pCi/L	09/23/24 08:33	10/10/24 16:06	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	85.9		30 - 110					09/23/24 08:33	10/10/24 16:06	1
Y Carrier	84.5		30 - 110					09/23/24 08:33	10/10/24 16:06	1

Lab Sample ID: LCS 160-680561/2-A
Matrix: Water
Analysis Batch: 683026

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 680561

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.44	10.13		1.39	1.00	0.550	pCi/L	120	75 - 125

Eurofins Cedar Falls

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

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

Lab Sample ID: LCS 160-680561/2-A
Matrix: Water
Analysis Batch: 683026

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 680561

<i>Carrier</i>	<i>LCS</i> <i>%Yield</i>	<i>LCS</i> <i>Qualifier</i>	<i>Limits</i>
Barium	82.6		30 - 110
Y Carrier	84.9		30 - 110

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QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

HPLC/IC

Analysis Batch: 434607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290943-1	MW08-GW-0924	Total/NA	Water	9056A	
310-290943-2	MW10-GW-0924	Total/NA	Water	9056A	
310-290943-3	MW11-GW-0924	Total/NA	Water	9056A	
310-290943-4	MW12-GW-0924	Total/NA	Water	9056A	
310-290943-5	MW13-GW-0924	Total/NA	Water	9056A	
310-290943-6	MW14-GW-0924	Total/NA	Water	9056A	
310-290943-7	MW21-GW-0924	Total/NA	Water	9056A	
MB 310-434607/3	Method Blank	Total/NA	Water	9056A	
LCS 310-434607/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 433736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290943-1	MW08-GW-0924	Total/NA	Water	3005A	
310-290943-2	MW10-GW-0924	Total/NA	Water	3005A	
310-290943-3	MW11-GW-0924	Total/NA	Water	3005A	
310-290943-4	MW12-GW-0924	Total/NA	Water	3005A	
310-290943-5	MW13-GW-0924	Total/NA	Water	3005A	
310-290943-6	MW14-GW-0924	Total/NA	Water	3005A	
310-290943-7	MW21-GW-0924	Total/NA	Water	3005A	
MB 310-433736/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-433736/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 435005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290943-1	MW08-GW-0924	Total/NA	Water	7470A	
310-290943-2	MW10-GW-0924	Total/NA	Water	7470A	
310-290943-3	MW11-GW-0924	Total/NA	Water	7470A	
310-290943-4	MW12-GW-0924	Total/NA	Water	7470A	
310-290943-5	MW13-GW-0924	Total/NA	Water	7470A	
310-290943-6	MW14-GW-0924	Total/NA	Water	7470A	
310-290943-7	MW21-GW-0924	Total/NA	Water	7470A	
MB 310-435005/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-435005/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 435214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290943-1	MW08-GW-0924	Total/NA	Water	6020B	433736
310-290943-2	MW10-GW-0924	Total/NA	Water	6020B	433736
310-290943-3	MW11-GW-0924	Total/NA	Water	6020B	433736
310-290943-4	MW12-GW-0924	Total/NA	Water	6020B	433736
310-290943-5	MW13-GW-0924	Total/NA	Water	6020B	433736
310-290943-6	MW14-GW-0924	Total/NA	Water	6020B	433736
310-290943-7	MW21-GW-0924	Total/NA	Water	6020B	433736
MB 310-433736/1-A	Method Blank	Total/NA	Water	6020B	433736
LCS 310-433736/2-A	Lab Control Sample	Total/NA	Water	6020B	433736

Analysis Batch: 435443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290943-1	MW08-GW-0924	Total/NA	Water	7470A	435005

QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Metals (Continued)

Analysis Batch: 435443 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290943-2	MW10-GW-0924	Total/NA	Water	7470A	435005
310-290943-3	MW11-GW-0924	Total/NA	Water	7470A	435005
310-290943-4	MW12-GW-0924	Total/NA	Water	7470A	435005
310-290943-5	MW13-GW-0924	Total/NA	Water	7470A	435005
310-290943-6	MW14-GW-0924	Total/NA	Water	7470A	435005
310-290943-7	MW21-GW-0924	Total/NA	Water	7470A	435005
MB 310-435005/1-A	Method Blank	Total/NA	Water	7470A	435005
LCS 310-435005/2-A	Lab Control Sample	Total/NA	Water	7470A	435005

General Chemistry

Analysis Batch: 433664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290943-1	MW08-GW-0924	Total/NA	Water	SM 4500 H+ B	
310-290943-2	MW10-GW-0924	Total/NA	Water	SM 4500 H+ B	
310-290943-3	MW11-GW-0924	Total/NA	Water	SM 4500 H+ B	
310-290943-4	MW12-GW-0924	Total/NA	Water	SM 4500 H+ B	
310-290943-5	MW13-GW-0924	Total/NA	Water	SM 4500 H+ B	
310-290943-6	MW14-GW-0924	Total/NA	Water	SM 4500 H+ B	
310-290943-7	MW21-GW-0924	Total/NA	Water	SM 4500 H+ B	
LCS 310-433664/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 433742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290943-1	MW08-GW-0924	Total/NA	Water	SM 2540C	
310-290943-2	MW10-GW-0924	Total/NA	Water	SM 2540C	
MB 310-433742/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-433742/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 433743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290943-3	MW11-GW-0924	Total/NA	Water	SM 2540C	
310-290943-4	MW12-GW-0924	Total/NA	Water	SM 2540C	
310-290943-5	MW13-GW-0924	Total/NA	Water	SM 2540C	
310-290943-6	MW14-GW-0924	Total/NA	Water	SM 2540C	
310-290943-7	MW21-GW-0924	Total/NA	Water	SM 2540C	
MB 310-433743/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-433743/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 680560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290943-1	MW08-GW-0924	Total/NA	Water	PrecSep-21	
310-290943-2	MW10-GW-0924	Total/NA	Water	PrecSep-21	
310-290943-3	MW11-GW-0924	Total/NA	Water	PrecSep-21	
310-290943-4	MW12-GW-0924	Total/NA	Water	PrecSep-21	
310-290943-5	MW13-GW-0924	Total/NA	Water	PrecSep-21	
310-290943-6	MW14-GW-0924	Total/NA	Water	PrecSep-21	
310-290943-7	MW21-GW-0924	Total/NA	Water	PrecSep-21	
MB 160-680560/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-680560/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Eurofins Cedar Falls

QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Rad

Prep Batch: 680561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290943-1	MW08-GW-0924	Total/NA	Water	PrecSep_0	
310-290943-2	MW10-GW-0924	Total/NA	Water	PrecSep_0	
310-290943-3	MW11-GW-0924	Total/NA	Water	PrecSep_0	
310-290943-4	MW12-GW-0924	Total/NA	Water	PrecSep_0	
310-290943-5	MW13-GW-0924	Total/NA	Water	PrecSep_0	
310-290943-6	MW14-GW-0924	Total/NA	Water	PrecSep_0	
310-290943-7	MW21-GW-0924	Total/NA	Water	PrecSep_0	
MB 160-680561/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-680561/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

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Lab Chronicle

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Client Sample ID: MW08-GW-0924

Lab Sample ID: 310-290943-1

Date Collected: 09/17/24 15:30

Matrix: Water

Date Received: 09/19/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434607	WZC8	EET CF	09/26/24 13:37
Total/NA	Prep	3005A			433736	F5MW	EET CF	09/20/24 09:00
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 14:43
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:17
Total/NA	Analysis	SM 2540C		1	433742	MDU9	EET CF	09/19/24 20:37
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 10:33
Total/NA	Prep	PrecSep-21			680560	BCE	EET SL	09/23/24 08:15
Total/NA	Analysis	9315		1	683563	FLC	EET SL	10/15/24 07:28
Total/NA	Prep	PrecSep_0			680561	BCE	EET SL	09/23/24 08:33
Total/NA	Analysis	9320		1	683028	FLC	EET SL	10/10/24 11:35
Total/NA	Analysis	Ra226_Ra228		1	683888	SCB	EET SL	10/16/24 13:17

Client Sample ID: MW10-GW-0924

Lab Sample ID: 310-290943-2

Date Collected: 09/17/24 17:30

Matrix: Water

Date Received: 09/19/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434607	WZC8	EET CF	09/26/24 13:49
Total/NA	Prep	3005A			433736	F5MW	EET CF	09/20/24 09:00
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 14:54
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:20
Total/NA	Analysis	SM 2540C		1	433742	MDU9	EET CF	09/19/24 20:37
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 10:34
Total/NA	Prep	PrecSep-21			680560	BCE	EET SL	09/23/24 08:15
Total/NA	Analysis	9315		1	683563	FLC	EET SL	10/15/24 07:28
Total/NA	Prep	PrecSep_0			680561	BCE	EET SL	09/23/24 08:33
Total/NA	Analysis	9320		1	683028	FLC	EET SL	10/10/24 11:35
Total/NA	Analysis	Ra226_Ra228		1	683888	SCB	EET SL	10/16/24 13:17

Client Sample ID: MW11-GW-0924

Lab Sample ID: 310-290943-3

Date Collected: 09/17/24 18:35

Matrix: Water

Date Received: 09/19/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434607	WZC8	EET CF	09/26/24 14:01
Total/NA	Prep	3005A			433736	F5MW	EET CF	09/20/24 09:00
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 14:56
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:22
Total/NA	Analysis	SM 2540C		1	433743	MDU9	EET CF	09/19/24 20:47
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 10:35

Lab Chronicle

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Client Sample ID: MW11-GW-0924

Lab Sample ID: 310-290943-3

Date Collected: 09/17/24 18:35

Matrix: Water

Date Received: 09/19/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			680560	BCE	EET SL	09/23/24 08:15
Total/NA	Analysis	9315		1	683563	FLC	EET SL	10/15/24 07:28
Total/NA	Prep	PrecSep_0			680561	BCE	EET SL	09/23/24 08:33
Total/NA	Analysis	9320		1	683028	FLC	EET SL	10/10/24 11:35
Total/NA	Analysis	Ra226_Ra228		1	683888	SCB	EET SL	10/16/24 13:17

Client Sample ID: MW12-GW-0924

Lab Sample ID: 310-290943-4

Date Collected: 09/17/24 16:15

Matrix: Water

Date Received: 09/19/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434607	WZC8	EET CF	09/26/24 14:13
Total/NA	Prep	3005A			433736	F5MW	EET CF	09/20/24 09:00
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 14:58
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:24
Total/NA	Analysis	SM 2540C		1	433743	MDU9	EET CF	09/19/24 20:47
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 10:36
Total/NA	Prep	PrecSep-21			680560	BCE	EET SL	09/23/24 08:15
Total/NA	Analysis	9315		1	683563	FLC	EET SL	10/15/24 07:28
Total/NA	Prep	PrecSep_0			680561	BCE	EET SL	09/23/24 08:33
Total/NA	Analysis	9320		1	682913	SWS	EET SL	10/10/24 11:40
Total/NA	Analysis	Ra226_Ra228		1	683888	SCB	EET SL	10/16/24 13:17

Client Sample ID: MW13-GW-0924

Lab Sample ID: 310-290943-5

Date Collected: 09/17/24 18:05

Matrix: Water

Date Received: 09/19/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434607	WZC8	EET CF	09/26/24 14:37
Total/NA	Prep	3005A			433736	F5MW	EET CF	09/20/24 09:00
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 15:00
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:26
Total/NA	Analysis	SM 2540C		1	433743	MDU9	EET CF	09/19/24 20:47
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 10:37
Total/NA	Prep	PrecSep-21			680560	BCE	EET SL	09/23/24 08:15
Total/NA	Analysis	9315		1	683563	FLC	EET SL	10/15/24 07:28
Total/NA	Prep	PrecSep_0			680561	BCE	EET SL	09/23/24 08:33
Total/NA	Analysis	9320		1	682913	SWS	EET SL	10/10/24 11:40
Total/NA	Analysis	Ra226_Ra228		1	683888	SCB	EET SL	10/16/24 13:17

Lab Chronicle

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Client Sample ID: MW14-GW-0924

Lab Sample ID: 310-290943-6

Date Collected: 09/17/24 18:30

Matrix: Water

Date Received: 09/19/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434607	WZC8	EET CF	09/26/24 15:02
Total/NA	Prep	3005A			433736	F5MW	EET CF	09/20/24 09:00
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 15:03
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:28
Total/NA	Analysis	SM 2540C		1	433743	MDU9	EET CF	09/19/24 20:47
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 10:38
Total/NA	Prep	PrecSep-21			680560	BCE	EET SL	09/23/24 08:15
Total/NA	Analysis	9315		1	683563	FLC	EET SL	10/15/24 07:29
Total/NA	Prep	PrecSep_0			680561	BCE	EET SL	09/23/24 08:33
Total/NA	Analysis	9320		1	682913	SWS	EET SL	10/10/24 11:40
Total/NA	Analysis	Ra226_Ra228		1	683888	SCB	EET SL	10/16/24 13:17

Client Sample ID: MW21-GW-0924

Lab Sample ID: 310-290943-7

Date Collected: 09/17/24 16:55

Matrix: Water

Date Received: 09/19/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434607	WZC8	EET CF	09/26/24 15:14
Total/NA	Prep	3005A			433736	F5MW	EET CF	09/20/24 09:00
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 15:05
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:35
Total/NA	Analysis	SM 2540C		1	433743	MDU9	EET CF	09/19/24 20:47
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 10:39
Total/NA	Prep	PrecSep-21			680560	BCE	EET SL	09/23/24 08:15
Total/NA	Analysis	9315		1	683563	FLC	EET SL	10/15/24 07:29
Total/NA	Prep	PrecSep_0			680561	BCE	EET SL	09/23/24 08:33
Total/NA	Analysis	9320		1	682913	SWS	EET SL	10/10/24 11:40
Total/NA	Analysis	Ra226_Ra228		1	683888	SCB	EET SL	10/16/24 13:17

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
 EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
SDG: 12576485-003.01

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Lithium

Laboratory: Eurofins St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	373	12-01-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9315	PrecSep-21	Water	Radium-226
9320	PrecSep_0	Water	Radium-228
Ra226_Ra228		Water	Combined Radium 226 + 228

Method Summary

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET 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.

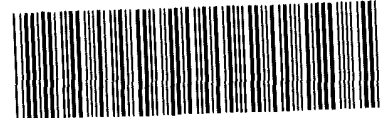
Laboratory References:

- EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
- EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566





Environment Testing
America



310-290943 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHP Services Inc</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE	TIME	Received By
	<u>9/18/24</u>	<u>0935</u>	<u>JW</u>
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>P</u>	Correction Factor (°C):	<u>0</u>
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>2.2</u>	Corrected Temp (°C):	<u>2.2</u>
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD SERVICES</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>9/19/24</u>	<u>0935</u>	<u>JW</u>
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>2</u>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____	<input type="checkbox"/> NONE	
Thermometer ID:	<u>JW2.2 P</u>	Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>2.2</u>	Corrected Temp (°C): <u>2.2</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			



Chain of Custody Record

TestAmerica Des Moines SC
214

eurofins

Sampler: **Paul Richards** Lab PW: **Zach Bindert**
Phone: **72-308-9031** E-Mail: **zach.bindert@eu.com**

Client Information
Company: **Kevin Armstrong**
Company: **GHD Services Inc.**

Address: **11228 Aurora Avenue**
City: **Des Moines**
State, Zip: **IA, 50322-7905**
Phone: **515-414-3935(Tel)**
Email: **Kevin.Armstrong@ghd.com**

Project Name: **MIEC Neal South - Semiannual CCR**
Site: **Neal South CCR Monofill**

Due Date Requested: _____
TAT Requested (days): **Standard**

Compliance Project: Yes No

PO #: **340017051**
WG #: **31017262**
Project #: **12576485-003 01**
SSOW#: **12576485-02**

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastefoil, BT=titration, A=air)	Preservation Code:		Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested							Total Number of Containers	Special Instructions/Note:
					G	W			9316_Ra228 - Standard Target List	9320_Ra228 - Standard Target List	9056A_ORGM_28D - (MOD) Chloride, Fluoride, Sulfate	6020B_7470A - CCR Metals list	TDS 2540C_Calcd, SM4500_H+				
MW02-GW-0924			G	Water			X	X	D	N	D	N	X	X			
MW04-GW-0924			G	Water			N	X	X	X	X	X	X	X			
MW08-GW-0924	9/17/24	1530	G	Water			N	X	X	X	X	X	X	X	5		
MW10-GW-0924	9/17/24	1730	G	Water			N	X	X	X	X	X	X	X	5		
MW11-GW-0924	9/17/24	1935	G	Water			N	X	X	X	X	X	X	X	5		
MW12-GW-0924	9/17/24	1015	G	Water			N	X	X	X	X	X	X	X	5		
MW13-GW-0924	9/17/24	1805	G	Water			N	X	X	X	X	X	X	X	5		
MW14-GW-0924	9/17/24	1830	G	Water			N	X	X	X	X	X	X	X	5		
MW15-GW-0924			G	Water			N	X	X	X	X	X	X	X			
MW46-GW-0924			G	Water			N	X	X	X	X	X	X	X			
MW47-GW-0924			G	Water			N	X	X	X	X	X	X	X			

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

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

Empty Kit Relinquished by _____ Date: _____

Relinquished by: **Paul Richards** Date/Time: **9/18/24 1300** Company: **GHD**

Relinquished by: _____ Date/Time: _____ Company: _____

Relinquished by: _____ Date/Time: _____ Company: _____

Custody Seals Intact: Yes No
Custody Seal No. _____

Received by: _____ Date/Time: _____ Company: _____

Received by: _____ Date/Time: _____ Company: _____

Received by: _____ Date/Time: **9/19/24** Company: **GHDI**

Special Instructions/QC Requirements: All Appendix III and Appendix IV constituents.
Database Facility Code: 11114654-GD-MidAmer

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

Chain of Custody Record

Client Information Client Contact: Kevin Armstrong Company: GHD Services Inc. Address: 11228 Aurora Avenue City: Des Moines State Zip: IA, 50322-7905 Phone: 515-414-3935(Tel) Email: Kevin.Armstrong@ghd.com Project Name: MEC Neal South - Semiannual CCR Site: Neal South CCR Monofill		Lab P/N: Richard's Handwritten E-Mail: 712-898-0103 PWSID:		Carrier Tracking No(s): State of Origin: Iowa Page: Page 2 of 2 Job #:		COC No: Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Due Date Requested: TAT Requested (days): Standard Compliance Project: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> 9315_Ra226 - Standard Target List 9320_Ra228 - Standard Target List 9066A_ORGM_28D - (MOD) Chloride, Fluoride, Sulfate 6020B_7470A - CCR Metals list TDS 2540C_Calc'd, SM4500_H+		Analysis Requested		Special Instructions/Note: Total Number of containers: 5	
Sample Identification MW148-GW-0924 MW149-GW-0924 MW120-GW-0924 MW21-GW-0924 DP04-GW-0924	Sample Date 9/17/24 10/5/24	Sample Type (C=Comp, G=grab) G G G G G	Matrix (Water, Sewage, Other) Water Water Water Water Water	Preservation Code: G G G G G	9200_Ra226 - Standard Target List 9200_Ra228 - Standard Target List 9066A_ORGM_28D - (MOD) Chloride, Fluoride, Sulfate 6020B_7470A - CCR Metals list TDS 2540C_Calc'd, SM4500_H+	Special Instructions/Note: Total Number of containers: 5	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested I, II, III, IV, Other (specify)		Empty Kit Relinquished by		Sample Disposal (A Fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Relinquished by: Kevin Armstrong Date/Time: 9/14/24 1300 Company: GHD		Relinquished by: Kevin Armstrong Date/Time: 9/14/24 1300 Company: GHD		Relinquished by: Kevin Armstrong Date/Time: 9/19/24 1300 Company: GHD		Special Instructions/QC Requirements. All Appendix III and Appendix IV constituents. Database Facility Code: 11114654-GD-MidAmer	
Relinquished by: Kevin Armstrong Date/Time: 9/14/24 1300 Company: GHD		Relinquished by: Kevin Armstrong Date/Time: 9/14/24 1300 Company: GHD		Relinquished by: Kevin Armstrong Date/Time: 9/19/24 1300 Company: GHD		Method of Shipment:	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.		Cooler Temperature(s) °C and Other Remarks:		Ver 01/16/2019	

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-290943-1
SDG Number: 12576485-003.01

Login Number: 290943

List Number: 1

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Tracer/Carrier Summary

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-290943-1
 SDG: 12576485-003.01

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	
310-290943-1	MW08-GW-0924	78.7	
310-290943-2	MW10-GW-0924	91.1	
310-290943-3	MW11-GW-0924	83.9	
310-290943-4	MW12-GW-0924	88.6	
310-290943-5	MW13-GW-0924	88.1	
310-290943-6	MW14-GW-0924	84.9	
310-290943-7	MW21-GW-0924	88.1	
LCS 160-680560/2-A	Lab Control Sample	82.6	
MB 160-680560/1-A	Method Blank	85.9	
Tracer/Carrier Legend			
Ba = Barium			

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
310-290943-1	MW08-GW-0924	78.7	80.7
310-290943-2	MW10-GW-0924	91.1	71.0
310-290943-3	MW11-GW-0924	83.9	74.8
310-290943-4	MW12-GW-0924	88.6	84.9
310-290943-5	MW13-GW-0924	88.1	83.4
310-290943-6	MW14-GW-0924	84.9	82.2
310-290943-7	MW21-GW-0924	88.1	82.2
LCS 160-680561/2-A	Lab Control Sample	82.6	84.9
MB 160-680561/1-A	Method Blank	85.9	84.5
Tracer/Carrier Legend			
Ba = Barium			
Y = Y Carrier			



ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 10/4/2024 12:31:16 PM

JOB DESCRIPTION

MEC Neal South PME Monitoring
Neal South PME Monitoring

JOB NUMBER

310-290959-1

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016



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Case Narrative

Client: GHD Services Inc.
Project: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Job ID: 310-290959-1

Eurofins Cedar Falls

Job Narrative 310-290959-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 9/19/2024 9:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C.

HPLC/IC

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

Metals

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

Eurofins Cedar Falls

Sample Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-290959-1	MW26-GW-0924	Ground Water	09/17/24 08:15	09/19/24 09:35
310-290959-2	MW28-GW-0924	Ground Water	09/17/24 13:50	09/19/24 09:35
310-290959-3	MW30-GW-0924	Ground Water	09/17/24 12:45	09/19/24 09:35
310-290959-4	MW32-GW-0924	Ground Water	09/17/24 11:30	09/19/24 09:35
310-290959-5	MW33-GW-0924	Ground Water	09/17/24 10:25	09/19/24 09:35
310-290959-6	MW34-GW-0924	Ground Water	09/17/24 09:50	09/19/24 09:35
310-290959-7	MW36-GW-0924	Ground Water	09/17/24 08:50	09/19/24 09:35
310-290959-8	MW43-GW-0924	Ground Water	09/17/24 14:20	09/19/24 09:35
310-290959-9	MW49-GW-0924	Ground Water	09/17/24 16:40	09/19/24 09:35
310-290959-10	MW50-GW-0924	Ground Water	09/17/24 14:55	09/19/24 09:35
310-290959-11	MW51-GW-0924	Ground Water	09/17/24 15:55	09/19/24 09:35
310-290959-12	MW52-GW-0924	Ground Water	09/17/24 17:15	09/19/24 09:35
310-290959-13	MW53-GW-0924	Ground Water	09/17/24 17:50	09/19/24 09:35
310-290959-14	DP02-GW-0924	Ground Water	09/17/24 00:00	09/19/24 09:35



Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW26-GW-0924

Lab Sample ID: 310-290959-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	54.4		5.00		mg/L	5		9056A	Total/NA
Calcium	163		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW28-GW-0924

Lab Sample ID: 310-290959-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	174		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0274		0.00200		mg/L	1		6020B	Total/NA
Calcium	230		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW30-GW-0924

Lab Sample ID: 310-290959-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	66.3		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0599		0.00200		mg/L	1		6020B	Total/NA
Calcium	205		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW32-GW-0924

Lab Sample ID: 310-290959-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	213		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0256		0.00200		mg/L	1		6020B	Total/NA
Calcium	216		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW33-GW-0924

Lab Sample ID: 310-290959-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	239		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0149		0.00200		mg/L	1		6020B	Total/NA
Calcium	203		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW34-GW-0924

Lab Sample ID: 310-290959-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	179		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0157		0.00200		mg/L	1		6020B	Total/NA
Calcium	210		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW36-GW-0924

Lab Sample ID: 310-290959-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	151		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0102		0.00200		mg/L	1		6020B	Total/NA
Calcium	189		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW43-GW-0924

Lab Sample ID: 310-290959-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	123		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0896		0.00200		mg/L	1		6020B	Total/NA
Calcium	197		0.500		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW49-GW-0924

Lab Sample ID: 310-290959-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	49.3		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0443		0.00200		mg/L	1		6020B	Total/NA
Calcium	79.7		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW50-GW-0924

Lab Sample ID: 310-290959-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	318		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00900		0.00200		mg/L	1		6020B	Total/NA
Calcium	220		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW51-GW-0924

Lab Sample ID: 310-290959-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	239		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00250		0.00200		mg/L	1		6020B	Total/NA
Calcium	180		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW52-GW-0924

Lab Sample ID: 310-290959-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	81.7		5.00		mg/L	5		9056A	Total/NA
Calcium	181		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: MW53-GW-0924

Lab Sample ID: 310-290959-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	77.9		5.00		mg/L	5		9056A	Total/NA
Calcium	136		0.500		mg/L	1		6020B	Total/NA

Client Sample ID: DP02-GW-0924

Lab Sample ID: 310-290959-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	317		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00835		0.00200		mg/L	1		6020B	Total/NA
Calcium	222		0.500		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW26-GW-0924

Lab Sample ID: 310-290959-1

Date Collected: 09/17/24 08:15

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	54.4		5.00		mg/L			09/25/24 11:38	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 16:40	1
Calcium	163		0.500		mg/L		09/23/24 09:30	10/03/24 16:40	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW28-GW-0924

Lab Sample ID: 310-290959-2

Date Collected: 09/17/24 13:50

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	174		5.00		mg/L			09/25/24 11:51	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0274		0.00200		mg/L		09/23/24 09:30	10/03/24 16:44	1
Calcium	230		0.500		mg/L		09/23/24 09:30	10/03/24 16:44	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW30-GW-0924

Lab Sample ID: 310-290959-3

Date Collected: 09/17/24 12:45

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	66.3		5.00		mg/L			09/25/24 12:27	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0599		0.00200		mg/L		09/23/24 09:30	10/03/24 16:46	1
Calcium	205		0.500		mg/L		09/23/24 09:30	10/03/24 16:46	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW32-GW-0924

Lab Sample ID: 310-290959-4

Date Collected: 09/17/24 11:30

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	213		5.00		mg/L			09/25/24 12:39	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0256		0.00200		mg/L		09/23/24 09:30	10/03/24 16:49	1
Calcium	216		0.500		mg/L		09/23/24 09:30	10/03/24 16:49	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW33-GW-0924

Lab Sample ID: 310-290959-5

Date Collected: 09/17/24 10:25

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	239		5.00		mg/L			09/25/24 12:51	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0149		0.00200		mg/L		09/23/24 09:30	10/03/24 16:59	1
Calcium	203		0.500		mg/L		09/23/24 09:30	10/03/24 16:59	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW34-GW-0924

Lab Sample ID: 310-290959-6

Date Collected: 09/17/24 09:50

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	179		5.00		mg/L			09/25/24 13:03	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0157		0.00200		mg/L		09/23/24 09:30	10/03/24 17:02	1
Calcium	210		0.500		mg/L		09/23/24 09:30	10/03/24 17:02	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW36-GW-0924

Lab Sample ID: 310-290959-7

Date Collected: 09/17/24 08:50

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	151		5.00		mg/L			09/25/24 13:15	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0102		0.00200		mg/L		09/23/24 09:30	10/03/24 17:04	1
Calcium	189		0.500		mg/L		09/23/24 09:30	10/03/24 17:04	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW43-GW-0924

Lab Sample ID: 310-290959-8

Date Collected: 09/17/24 14:20

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	123		5.00		mg/L			09/25/24 13:27	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0896		0.00200		mg/L		09/23/24 09:30	10/03/24 17:06	1
Calcium	197		0.500		mg/L		09/23/24 09:30	10/03/24 17:06	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW49-GW-0924

Lab Sample ID: 310-290959-9

Date Collected: 09/17/24 16:40

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	49.3		5.00		mg/L			09/25/24 13:39	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0443		0.00200		mg/L		09/23/24 09:30	10/03/24 17:08	1
Calcium	79.7		0.500		mg/L		09/23/24 09:30	10/03/24 17:08	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW50-GW-0924

Lab Sample ID: 310-290959-10

Date Collected: 09/17/24 14:55

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	318		5.00		mg/L			09/25/24 13:51	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00900		0.00200		mg/L		09/23/24 09:30	10/03/24 17:10	1
Calcium	220		0.500		mg/L		09/23/24 09:30	10/03/24 17:10	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW51-GW-0924

Lab Sample ID: 310-290959-11

Date Collected: 09/17/24 15:55

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	239		5.00		mg/L			09/25/24 14:04	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00250		0.00200		mg/L		09/23/24 09:30	10/03/24 17:12	1
Calcium	180		0.500		mg/L		09/23/24 09:30	10/03/24 17:12	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW52-GW-0924

Lab Sample ID: 310-290959-12

Date Collected: 09/17/24 17:15

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	81.7		5.00		mg/L			09/25/24 15:04	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 17:29	1
Calcium	181		0.500		mg/L		09/23/24 09:30	10/03/24 17:29	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW53-GW-0924

Lab Sample ID: 310-290959-13

Date Collected: 09/17/24 17:50

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	77.9		5.00		mg/L			09/25/24 15:16	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 17:32	1
Calcium	136		0.500		mg/L		09/23/24 09:30	10/03/24 17:32	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: DP02-GW-0924

Lab Sample ID: 310-290959-14

Date Collected: 09/17/24 00:00

Matrix: Ground Water

Date Received: 09/19/24 09:35

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	317		5.00		mg/L			09/25/24 15:28	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00835		0.00200		mg/L		09/23/24 09:30	10/03/24 17:34	1
Calcium	222		0.500		mg/L		09/23/24 09:30	10/03/24 17:34	1

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Definitions/Glossary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-434545/3
Matrix: Water
Analysis Batch: 434545

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.00		1.00		mg/L			09/25/24 10:02	1

Lab Sample ID: LCS 310-434545/4
Matrix: Water
Analysis Batch: 434545

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	10.31		mg/L		103	90 - 110

Lab Sample ID: 310-290959-11 MS
Matrix: Ground Water
Analysis Batch: 434545

Client Sample ID: MW51-GW-0924
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	239		25.0	265.3	4	mg/L		103	80 - 120

Lab Sample ID: 310-290959-11 MSD
Matrix: Ground Water
Analysis Batch: 434545

Client Sample ID: MW51-GW-0924
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Sulfate	239		25.0	270.5	4	mg/L		124	80 - 120	2	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-433837/1-A
Matrix: Water
Analysis Batch: 435214

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 433837

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 16:36	1
Calcium	<0.500		0.500		mg/L		09/23/24 09:30	10/03/24 16:36	1

Lab Sample ID: LCS 310-433837/2-A
Matrix: Water
Analysis Batch: 435214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 433837

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.2284		mg/L		114	80 - 120
Calcium	2.00	2.183		mg/L		109	80 - 120

Lab Sample ID: 310-290959-11 MS
Matrix: Ground Water
Analysis Batch: 435214

Client Sample ID: MW51-GW-0924
Prep Type: Total/NA
Prep Batch: 433837

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.00250		0.200	0.2354		mg/L		116	75 - 125
Calcium	180		2.00	185.3	4	mg/L		290	75 - 125

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QC Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

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

Lab Sample ID: 310-290959-11 MSD
Matrix: Ground Water
Analysis Batch: 435214

Client Sample ID: MW51-GW-0924
Prep Type: Total/NA
Prep Batch: 433837

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits	Limit	
Arsenic	0.00250		0.200	0.2333		mg/L		115	75 - 125	1	20
Calcium	180		2.00	179.8	4	mg/L		13	75 - 125	3	20

Lab Sample ID: 310-290959-1 DU
Matrix: Ground Water
Analysis Batch: 435214

Client Sample ID: MW26-GW-0924
Prep Type: Total/NA
Prep Batch: 433837

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier	Result	Qualifier				Limit
Arsenic	<0.00200		<0.00200		mg/L		NC	20
Calcium	163		168.1		mg/L		3	20



QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

HPLC/IC

Analysis Batch: 434545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290959-1	MW26-GW-0924	Total/NA	Ground Water	9056A	
310-290959-2	MW28-GW-0924	Total/NA	Ground Water	9056A	
310-290959-3	MW30-GW-0924	Total/NA	Ground Water	9056A	
310-290959-4	MW32-GW-0924	Total/NA	Ground Water	9056A	
310-290959-5	MW33-GW-0924	Total/NA	Ground Water	9056A	
310-290959-6	MW34-GW-0924	Total/NA	Ground Water	9056A	
310-290959-7	MW36-GW-0924	Total/NA	Ground Water	9056A	
310-290959-8	MW43-GW-0924	Total/NA	Ground Water	9056A	
310-290959-9	MW49-GW-0924	Total/NA	Ground Water	9056A	
310-290959-10	MW50-GW-0924	Total/NA	Ground Water	9056A	
310-290959-11	MW51-GW-0924	Total/NA	Ground Water	9056A	
310-290959-12	MW52-GW-0924	Total/NA	Ground Water	9056A	
310-290959-13	MW53-GW-0924	Total/NA	Ground Water	9056A	
310-290959-14	DP02-GW-0924	Total/NA	Ground Water	9056A	
MB 310-434545/3	Method Blank	Total/NA	Water	9056A	
LCS 310-434545/4	Lab Control Sample	Total/NA	Water	9056A	
310-290959-11 MS	MW51-GW-0924	Total/NA	Ground Water	9056A	
310-290959-11 MSD	MW51-GW-0924	Total/NA	Ground Water	9056A	

Metals

Prep Batch: 433837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290959-1	MW26-GW-0924	Total/NA	Ground Water	3005A	
310-290959-2	MW28-GW-0924	Total/NA	Ground Water	3005A	
310-290959-3	MW30-GW-0924	Total/NA	Ground Water	3005A	
310-290959-4	MW32-GW-0924	Total/NA	Ground Water	3005A	
310-290959-5	MW33-GW-0924	Total/NA	Ground Water	3005A	
310-290959-6	MW34-GW-0924	Total/NA	Ground Water	3005A	
310-290959-7	MW36-GW-0924	Total/NA	Ground Water	3005A	
310-290959-8	MW43-GW-0924	Total/NA	Ground Water	3005A	
310-290959-9	MW49-GW-0924	Total/NA	Ground Water	3005A	
310-290959-10	MW50-GW-0924	Total/NA	Ground Water	3005A	
310-290959-11	MW51-GW-0924	Total/NA	Ground Water	3005A	
310-290959-12	MW52-GW-0924	Total/NA	Ground Water	3005A	
310-290959-13	MW53-GW-0924	Total/NA	Ground Water	3005A	
310-290959-14	DP02-GW-0924	Total/NA	Ground Water	3005A	
MB 310-433837/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-433837/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-290959-11 MS	MW51-GW-0924	Total/NA	Ground Water	3005A	
310-290959-11 MSD	MW51-GW-0924	Total/NA	Ground Water	3005A	
310-290959-1 DU	MW26-GW-0924	Total/NA	Ground Water	3005A	

Analysis Batch: 435214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290959-1	MW26-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-2	MW28-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-3	MW30-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-4	MW32-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-5	MW33-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-6	MW34-GW-0924	Total/NA	Ground Water	6020B	433837

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QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Metals (Continued)

Analysis Batch: 435214 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-290959-7	MW36-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-8	MW43-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-9	MW49-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-10	MW50-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-11	MW51-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-12	MW52-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-13	MW53-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-14	DP02-GW-0924	Total/NA	Ground Water	6020B	433837
MB 310-433837/1-A	Method Blank	Total/NA	Water	6020B	433837
LCS 310-433837/2-A	Lab Control Sample	Total/NA	Water	6020B	433837
310-290959-11 MS	MW51-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-11 MSD	MW51-GW-0924	Total/NA	Ground Water	6020B	433837
310-290959-1 DU	MW26-GW-0924	Total/NA	Ground Water	6020B	433837

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW26-GW-0924

Date Collected: 09/17/24 08:15

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 11:38
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 16:40

Client Sample ID: MW28-GW-0924

Date Collected: 09/17/24 13:50

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 11:51
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 16:44

Client Sample ID: MW30-GW-0924

Date Collected: 09/17/24 12:45

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 12:27
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 16:46

Client Sample ID: MW32-GW-0924

Date Collected: 09/17/24 11:30

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 12:39
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 16:49

Client Sample ID: MW33-GW-0924

Date Collected: 09/17/24 10:25

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 12:51
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 16:59

Client Sample ID: MW34-GW-0924

Date Collected: 09/17/24 09:50

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-6

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 13:03

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Lab Chronicle

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW34-GW-0924

Date Collected: 09/17/24 09:50

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-6

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 17:02

Client Sample ID: MW36-GW-0924

Date Collected: 09/17/24 08:50

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-7

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 13:15
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 17:04

Client Sample ID: MW43-GW-0924

Date Collected: 09/17/24 14:20

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-8

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 13:27
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 17:06

Client Sample ID: MW49-GW-0924

Date Collected: 09/17/24 16:40

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-9

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 13:39
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 17:08

Client Sample ID: MW50-GW-0924

Date Collected: 09/17/24 14:55

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-10

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 13:51
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 17:10

Client Sample ID: MW51-GW-0924

Date Collected: 09/17/24 15:55

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-11

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 14:04

Lab Chronicle

Client: GHD Services Inc.
 Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Client Sample ID: MW51-GW-0924

Date Collected: 09/17/24 15:55

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-11

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 17:12

Client Sample ID: MW52-GW-0924

Date Collected: 09/17/24 17:15

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-12

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 15:04
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 17:29

Client Sample ID: MW53-GW-0924

Date Collected: 09/17/24 17:50

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-13

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 15:16
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 17:32

Client Sample ID: DP02-GW-0924

Date Collected: 09/17/24 00:00

Date Received: 09/19/24 09:35

Lab Sample ID: 310-290959-14

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434545	HE7K	EET CF	09/25/24 15:28
Total/NA	Prep	3005A			433837	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 17:34

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

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

Method Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South PME Monitoring

Job ID: 310-290959-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

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

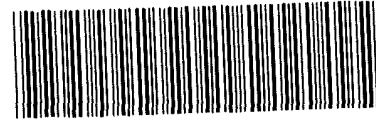
Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401





Environment Testing
America



310-290959 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: GMD			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE: 9/19/24	TIME: 4:35	Received By: XB
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # ____ of ____	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other _____ <input type="checkbox"/> NONE		
Thermometer ID:	2	Correction Factor (°C):	0
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	1.8	Corrected Temp (°C)	1.8
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			



Chain of Custody Record

TestAmerica Des Moines SC

eurofins

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Client Information		Lab Pmt: Zach Bindert		Carrier Tracking No(s):		COC No:																												
Client Contact: Kevin Armstrong		E-Mail: zach.bindert@ta-us.com		State of Origin: Iowa		Page: Page 1 of 2																												
Company: GHD Services Inc.		PWSID:		Job #:																														
Address: 11228 Aurora Avenue		Due Date Requested:		Analysis Requested		Preservation Codes:																												
City: Des Moines		TAT Requested (days): Standard				A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:																												
State, Zip: IA, 50322-7905		Compliance Project: Δ Yes Δ No				M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Y - Trizma Z - other (specify)																												
Phone: 515-414-3935(Tel)		PO #: 340017051				Total Number of containers																												
Email: Kevin.Armstrong@ghd.com		WO #: 31017262				X																												
Project Name: MEC Neal South PME Monitoring		Project #: 12576485-003 01				Special Instructions/Note:																												
Site: Neal South CCR Monofill		SSOW#: 12576485-02																																
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Tissue, Air)	Field Filtered Sample (Yes or No)	Perform (MS/MSD) (Yes or No)	6020B - Arsenic and Calcium	9069A_ORP_M_28D - (MOD) Sulfate	9069B - Arsenic and Calcium	Field Filtered Sample (Yes or No)	Perform (MS/MSD) (Yes or No)	6020B - Arsenic and Calcium	9069A_ORP_M_28D - (MOD) Sulfate	9069B - Arsenic and Calcium	Field Filtered Sample (Yes or No)	Perform (MS/MSD) (Yes or No)	6020B - Arsenic and Calcium	9069A_ORP_M_28D - (MOD) Sulfate	9069B - Arsenic and Calcium															
MW26-GW-0924	9/17/24	0815	G	Water	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X
MW28-GW-0924	9/17/24	1250	G	Water	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X
MW30-GW-0924	9/17/24	1245	G	Water	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X
MW32-GW-0924	9/17/24	1130	G	Water	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X
MW33-GW-0924	9/17/24	1025	G	Water	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X
MW34-GW-0924	9/17/24	0950	G	Water	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X
MW36-GW-0924	9/17/24	0850	G	Water	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X
MW43-GW-0924	9/17/24	1420	G	Water	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X
MW49-GW-0924	9/17/24	1040	G	Water	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X
MW50-GW-0924	9/17/24	1455	G	Water	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X
MW51-GW-0924	9/17/24	1555	G	Water	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X	N	N	X	X	X
Possible Hazard Identification		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																		
<input type="checkbox"/> Non-Hazard		<input type="checkbox"/> Flammable		<input type="checkbox"/> Skin Irritant		<input type="checkbox"/> Deliverable Requested I, II, III, IV, Other (specify)		Special Instructions/QC Requirements: Database Facility Code 1114654-GD-MidAmer																										
Empty Kit Relinquished by		Date:		Time:		Method of Shipment:																												
Relinquished by: <i>Steve Alexander</i>		Date/Time: 9/18/24 1360		Company: GHD		Received by:																												
Relinquished by:		Date/Time:		Company:		Received by:																												
Relinquished by:		Date/Time:		Company:		Received by:																												
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks:																														



Eurofins Cedar Falls
 3019 Venture Way
 Cedar Falls, IA 50613
 Phone (319) 277-2401 Phone (319) 277-2425

Chain of Custody Record

Client Information Client Contact: Kevin Armstrong Company: GHD Services Inc. Address: 11228 Aurora Avenue City: Des Moines State Zip: IA, 50322-7905 Phone: 515-414-3935(Tel) Email: Kevin.Armstrong@ghd.com Project Name: MEC Neal South PME Monitoring Site: Neal South CCR Monofill		Lab P#: Zach Bindert E-Mail: zach.bindert@eurofins-us.com PWSID:		Carrier Tracking No(s): State of Origin: Iowa Page: Page 2 of 2 Job #:		COC No:	
Due Date Requested: TAT Requested (days): Standard Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: 340017051 WO #: 31017262 Project #: 12576485-003 01 SOW#: 12576485-02		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 Other:		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
Sample Identification Sample Date: 9/17/24 Sample Time: 1756 Sample Type (C=Comp, G=grab): G Matrix (W=water, S=solid, O=wastewater, BT=tissue, A=air): Water Preservation Code:		Field Filtered Sample (Yes or No): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Perform MS/MSD (Yes or No): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 906A_ORGFM_28D - (MOD) Sulfate 602B - Arsenic and Calcium		Total Number of Containers: 2 Special Instructions/Note:		Special Instructions/Note:	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant Deliverable Requested I, II, III, IV, Other (specify)		<input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements: Database Facility Code 1114664-GD-MidAmer		Empty Kit Relinquished by:	
Relinquished by: <i>Paula Puchado</i> Date/Time: 9/18/24 1300 Company: GHD		Received by:		Date/Time:		Company:	
Relinquished by:		Received by:		Date/Time:		Company:	
Relinquished by:		Received by: <i>MS</i> Date/Time: 9/19/24 935 Company:		Date/Time:		Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No:		Cooler Temperature(s) °C and Other Remarks:		Method of Shipment:		Date:	

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-290959-1

Login Number: 290959

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Bunker, Xavier M

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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 <math><6\text{mm}</math> (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

PREPARED FOR

Attn: Kevin Armstrong
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 10/17/2024 3:41:56 PM

JOB DESCRIPTION

MEC Neal South - Semiannual CCR
Neal South - Semiannual CCR

JOB NUMBER

310-291015-1

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Zach Bindert, Senior Project Manager
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(319)595-2016



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Case Narrative

Client: GHD Services Inc.
Project: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Job ID: 310-291015-1

Eurofins Cedar Falls

Job Narrative 310-291015-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 9/19/2024 4:05 PM. 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 2.4°C, 2.9°C and 3.7°C.

HPLC/IC

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW15-GW-0924 (310-291015-1), DP01-GW-0924 (310-291015-2), MW02-GW-0924 (310-291015-3), MW04-GW-0924 (310-291015-4), MW16-GW-0924 (310-291015-5), MW17-GW-0924 (310-291015-6), MW18-GW-0924 (310-291015-7), MW19-GW-0924 (310-291015-8) and MW20-GW-0924 (310-291015-9). Elevated reporting limits (RLs) are provided.

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

Metals

Method 6020B: The laboratory control sample (LCS) for preparation batch 310-433838 and analytical batch 310-435214 recovered outside control limits for the following analytes: Antimony. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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

General Chemistry

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

Eurofins Cedar Falls

Case Narrative

Client: GHD Services Inc.
Project: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Job ID: 310-291015-2

Eurofins Cedar Falls

Job Narrative 310-291015-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 9/19/2024 4:05 PM. 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 2.4°C, 2.9°C and 3.7°C.

Gas Flow Proportional Counter

Method 9320_Ra228: Radium 228 Batch 680769

The Radium-228 laboratory control sample (LCS) associated with the following samples recovered at 127%: MW15-GW-0924 (310-291015-1), DP01-GW-0924 (310-291015-2), MW02-GW-0924 (310-291015-3), MW04-GW-0924 (310-291015-4), MW16-GW-0924 (310-291015-5), MW16-GW-0924 (310-291015-5[MS]), MW16-GW-0924 (310-291015-5[MSD]), MW17-GW-0924 (310-291015-6), MW18-GW-0924 (310-291015-7), MW19-GW-0924 (310-291015-8), MW20-GW-0924 (310-291015-9), (LCS 160-680769/2-A) and (MB 160-680769/1-A). 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 69%-145%. The LCS is within criteria and no further action is required.

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

Rad

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

Eurofins Cedar Falls

Sample Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-291015-1	MW15-GW-0924	Ground Water	09/18/24 09:00	09/19/24 16:05
310-291015-2	DP01-GW-0924	Ground Water	09/18/24 00:00	09/19/24 16:05
310-291015-3	MW02-GW-0924	Ground Water	09/18/24 09:35	09/19/24 16:05
310-291015-4	MW04-GW-0924	Ground Water	09/18/24 12:10	09/19/24 16:05
310-291015-5	MW16-GW-0924	Ground Water	09/18/24 08:20	09/19/24 16:05
310-291015-6	MW17-GW-0924	Ground Water	09/18/24 10:55	09/19/24 16:05
310-291015-7	MW18-GW-0924	Ground Water	09/18/24 12:15	09/19/24 16:05
310-291015-8	MW19-GW-0924	Ground Water	09/18/24 10:30	09/19/24 16:05
310-291015-9	MW20-GW-0924	Ground Water	09/18/24 10:00	09/19/24 16:05

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Detection Summary

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW15-GW-0924

Lab Sample ID: 310-291015-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16.9		5.00		mg/L	5		9056A	Total/NA
Sulfate	116		5.00		mg/L	5		9056A	Total/NA
Barium	0.110		0.00200		mg/L	1		6020B	Total/NA
Boron	0.785		0.100		mg/L	1		6020B	Total/NA
Calcium	129		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00241		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0578		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.00854		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	746		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: DP01-GW-0924

Lab Sample ID: 310-291015-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	208		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0173		0.00200		mg/L	1		6020B	Total/NA
Barium	0.258		0.00200		mg/L	1		6020B	Total/NA
Boron	0.551		0.100		mg/L	1		6020B	Total/NA
Calcium	222		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00407		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.133		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	872		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW02-GW-0924

Lab Sample ID: 310-291015-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	208		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0220		0.00200		mg/L	1		6020B	Total/NA
Barium	0.259		0.00200		mg/L	1		6020B	Total/NA
Boron	0.547		0.100		mg/L	1		6020B	Total/NA
Calcium	220		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00404		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.132		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	872		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW04-GW-0924

Lab Sample ID: 310-291015-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	32.6		5.00		mg/L	5		9056A	Total/NA
Sulfate	123		5.00		mg/L	5		9056A	Total/NA
Barium	0.0604		0.00200		mg/L	1		6020B	Total/NA
Boron	0.222		0.100		mg/L	1		6020B	Total/NA
Calcium	119		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00200		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0572		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	574		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW16-GW-0924

Lab Sample ID: 310-291015-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.86		5.00		mg/L	5		9056A	Total/NA
Sulfate	72.0		5.00		mg/L	5		9056A	Total/NA
Barium	0.350	F1	0.00200		mg/L	1		6020B	Total/NA
Boron	0.184		0.100		mg/L	1		6020B	Total/NA
Calcium	170		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00158		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0616		0.0100		mg/L	1		6020B	Total/NA
Selenium	0.118		0.00500		mg/L	1		6020B	Total/NA
Total Dissolved Solids	716		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW17-GW-0924

Lab Sample ID: 310-291015-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	23.9		5.00		mg/L	5		9056A	Total/NA
Sulfate	70.5		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0190		0.00200		mg/L	1		6020B	Total/NA
Barium	0.143		0.00200		mg/L	1		6020B	Total/NA
Boron	0.229		0.100		mg/L	1		6020B	Total/NA
Calcium	180		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00148		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0752		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00349		0.00200		mg/L	1		6020B	Total/NA
Total Dissolved Solids	712		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW18-GW-0924

Lab Sample ID: 310-291015-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	125		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0243		0.00200		mg/L	1		6020B	Total/NA
Barium	0.138		0.00200		mg/L	1		6020B	Total/NA
Boron	0.244		0.100		mg/L	1		6020B	Total/NA
Calcium	208		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00277		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.156		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	824		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW19-GW-0924

Lab Sample ID: 310-291015-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	62.6		5.00		mg/L	5		9056A	Total/NA
Sulfate	365		5.00		mg/L	5		9056A	Total/NA
Barium	0.0942		0.00200		mg/L	1		6020B	Total/NA
Boron	0.460		0.100		mg/L	1		6020B	Total/NA
Calcium	317		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00173		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.182		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1360		50.0		mg/L	1		SM 2540C	Total/NA
pH	6.7	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW20-GW-0924

Lab Sample ID: 310-291015-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	61.6		5.00		mg/L	5		9056A	Total/NA
Sulfate	398		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.0124		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0975		0.00200		mg/L	1		6020B	Total/NA
Boron	1.55		0.100		mg/L	1		6020B	Total/NA
Calcium	262		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00147		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.120		0.0100		mg/L	1		6020B	Total/NA
Total Dissolved Solids	1230		50.0		mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls



Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW15-GW-0924

Lab Sample ID: 310-291015-1

Date Collected: 09/18/24 09:00

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16.9		5.00		mg/L			09/26/24 12:27	5
Sulfate	116		5.00		mg/L			09/26/24 12:27	5
Fluoride	<1.00		1.00		mg/L			09/26/24 12:27	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200	*+	0.00200		mg/L		09/23/24 09:30	10/03/24 18:02	1
Arsenic	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 18:02	1
Barium	0.110		0.00200		mg/L		09/23/24 09:30	10/03/24 18:02	1
Beryllium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:02	1
Boron	0.785		0.100		mg/L		09/23/24 09:30	10/03/24 18:02	1
Cadmium	<0.000200		0.000200		mg/L		09/23/24 09:30	10/03/24 18:02	1
Calcium	129		0.500		mg/L		09/23/24 09:30	10/03/24 18:02	1
Chromium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:02	1
Cobalt	0.00241		0.000500		mg/L		09/23/24 09:30	10/03/24 18:02	1
Lead	<0.000500		0.000500		mg/L		09/23/24 09:30	10/03/24 18:02	1
Lithium	0.0578		0.0100		mg/L		09/23/24 09:30	10/03/24 18:02	1
Molybdenum	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 18:02	1
Selenium	0.00854		0.00500		mg/L		09/23/24 09:30	10/03/24 18:02	1
Thallium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:02	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	746		50.0		mg/L			09/24/24 16:03	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.1	HF	1.0		SU			09/19/24 16:47	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.156		0.0917	0.0928	1.00	0.114	pCi/L	09/24/24 08:30	10/16/24 10:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	85.4		30 - 110					09/24/24 08:30	10/16/24 10:17	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.612	U	0.334	0.334	1.00	0.612	pCi/L	09/24/24 08:33	10/10/24 13:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	85.4		30 - 110					09/24/24 08:33	10/10/24 13:56	1
Y Carrier	77.4		30 - 110					09/24/24 08:33	10/10/24 13:56	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW15-GW-0924

Lab Sample ID: 310-291015-1

Date Collected: 09/18/24 09:00

Matrix: Ground Water

Date Received: 09/19/24 16:05

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

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	<0.612	U	0.346	0.347	5.00	0.612	pCi/L		10/17/24 15:03	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: DP01-GW-0924

Lab Sample ID: 310-291015-2

Date Collected: 09/18/24 00:00

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			09/26/24 12:38	5
Sulfate	208		5.00		mg/L			09/26/24 12:38	5
Fluoride	<1.00		1.00		mg/L			09/26/24 12:38	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200	*+	0.00200		mg/L		09/23/24 09:30	10/03/24 18:07	1
Arsenic	0.0173		0.00200		mg/L		09/23/24 09:30	10/03/24 18:07	1
Barium	0.258		0.00200		mg/L		09/23/24 09:30	10/03/24 18:07	1
Beryllium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:07	1
Boron	0.551		0.100		mg/L		09/23/24 09:30	10/03/24 18:07	1
Cadmium	<0.000200		0.000200		mg/L		09/23/24 09:30	10/03/24 18:07	1
Calcium	222		0.500		mg/L		09/23/24 09:30	10/03/24 18:07	1
Chromium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:07	1
Cobalt	0.00407		0.000500		mg/L		09/23/24 09:30	10/03/24 18:07	1
Lead	<0.000500		0.000500		mg/L		09/23/24 09:30	10/03/24 18:07	1
Lithium	0.133		0.0100		mg/L		09/23/24 09:30	10/03/24 18:07	1
Molybdenum	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 18:07	1
Selenium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:07	1
Thallium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:07	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	872		50.0		mg/L			09/24/24 16:03	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.1	HF	1.0		SU			09/19/24 16:52	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.255		0.116	0.118	1.00	0.132	pCi/L	09/24/24 08:30	10/16/24 10:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	86.1		30 - 110					09/24/24 08:30	10/16/24 10:17	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.615	U	0.382	0.383	1.00	0.615	pCi/L	09/24/24 08:33	10/10/24 15:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	86.1		30 - 110					09/24/24 08:33	10/10/24 15:00	1
Y Carrier	78.1		30 - 110					09/24/24 08:33	10/10/24 15:00	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: DP01-GW-0924

Lab Sample ID: 310-291015-2

Date Collected: 09/18/24 00:00

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: TAL-STL 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	0.626		0.399	0.401	5.00	0.615	pCi/L		10/17/24 15:03	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW02-GW-0924

Lab Sample ID: 310-291015-3

Date Collected: 09/18/24 09:35

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			09/26/24 12:50	5
Sulfate	208		5.00		mg/L			09/26/24 12:50	5
Fluoride	<1.00		1.00		mg/L			09/26/24 12:50	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200	*+	0.00200		mg/L		09/23/24 09:30	10/03/24 18:09	1
Arsenic	0.0220		0.00200		mg/L		09/23/24 09:30	10/03/24 18:09	1
Barium	0.259		0.00200		mg/L		09/23/24 09:30	10/03/24 18:09	1
Beryllium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:09	1
Boron	0.547		0.100		mg/L		09/23/24 09:30	10/03/24 18:09	1
Cadmium	<0.000200		0.000200		mg/L		09/23/24 09:30	10/03/24 18:09	1
Calcium	220		0.500		mg/L		09/23/24 09:30	10/03/24 18:09	1
Chromium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:09	1
Cobalt	0.00404		0.000500		mg/L		09/23/24 09:30	10/03/24 18:09	1
Lead	<0.000500		0.000500		mg/L		09/23/24 09:30	10/03/24 18:09	1
Lithium	0.132		0.0100		mg/L		09/23/24 09:30	10/03/24 18:09	1
Molybdenum	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 18:09	1
Selenium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:09	1
Thallium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:09	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	872		50.0		mg/L			09/24/24 16:03	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.1	HF	1.0		SU			09/19/24 16:45	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.300		0.146	0.149	1.00	0.186	pCi/L	09/24/24 08:30	10/16/24 10:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	79.7		30 - 110					09/24/24 08:30	10/16/24 10:17	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.677	U	0.416	0.418	1.00	0.677	pCi/L	09/24/24 08:33	10/10/24 15:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	79.7		30 - 110					09/24/24 08:33	10/10/24 15:00	1
Y Carrier	76.3		30 - 110					09/24/24 08:33	10/10/24 15:00	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW02-GW-0924

Lab Sample ID: 310-291015-3

Date Collected: 09/18/24 09:35

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: TAL-STL 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	0.682		0.441	0.444	5.00	0.677	pCi/L		10/17/24 15:03	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW04-GW-0924

Lab Sample ID: 310-291015-4

Date Collected: 09/18/24 12:10

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.6		5.00		mg/L			09/26/24 13:02	5
Sulfate	123		5.00		mg/L			09/26/24 13:02	5
Fluoride	<1.00		1.00		mg/L			09/26/24 13:02	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200	*+	0.00200		mg/L		09/23/24 09:30	10/03/24 18:11	1
Arsenic	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 18:11	1
Barium	0.0604		0.00200		mg/L		09/23/24 09:30	10/03/24 18:11	1
Beryllium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:11	1
Boron	0.222		0.100		mg/L		09/23/24 09:30	10/03/24 18:11	1
Cadmium	<0.000200		0.000200		mg/L		09/23/24 09:30	10/03/24 18:11	1
Calcium	119		0.500		mg/L		09/23/24 09:30	10/03/24 18:11	1
Chromium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:11	1
Cobalt	0.00200		0.000500		mg/L		09/23/24 09:30	10/03/24 18:11	1
Lead	<0.000500		0.000500		mg/L		09/23/24 09:30	10/03/24 18:11	1
Lithium	0.0572		0.0100		mg/L		09/23/24 09:30	10/03/24 18:11	1
Molybdenum	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 18:11	1
Selenium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:11	1
Thallium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:11	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	574		50.0		mg/L			09/24/24 16:03	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.1	HF	1.0		SU			09/19/24 16:46	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.117	U	0.0802	0.0807	1.00	0.117	pCi/L	09/24/24 08:30	10/16/24 10:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	89.1		30 - 110					09/24/24 08:30	10/16/24 10:17	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.728	U	0.397	0.397	1.00	0.728	pCi/L	09/24/24 08:33	10/10/24 15:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	89.1		30 - 110					09/24/24 08:33	10/10/24 15:00	1
Y Carrier	77.0		30 - 110					09/24/24 08:33	10/10/24 15:00	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW04-GW-0924

Lab Sample ID: 310-291015-4

Date Collected: 09/18/24 12:10

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: TAL-STL 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	<0.728	U	0.405	0.405	5.00	0.728	pCi/L		10/17/24 15:03	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW16-GW-0924

Lab Sample ID: 310-291015-5

Date Collected: 09/18/24 08:20

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.86		5.00		mg/L			09/26/24 13:36	5
Sulfate	72.0		5.00		mg/L			09/26/24 13:36	5
Fluoride	<1.00		1.00		mg/L			09/26/24 13:36	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200	*+ F1	0.00200		mg/L		09/23/24 09:30	10/03/24 18:13	1
Arsenic	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 18:13	1
Barium	0.350	F1	0.00200		mg/L		09/23/24 09:30	10/03/24 18:13	1
Beryllium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:13	1
Boron	0.184		0.100		mg/L		09/23/24 09:30	10/03/24 18:13	1
Cadmium	<0.000200		0.000200		mg/L		09/23/24 09:30	10/03/24 18:13	1
Calcium	170		0.500		mg/L		09/23/24 09:30	10/03/24 18:13	1
Chromium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:13	1
Cobalt	0.00158		0.000500		mg/L		09/23/24 09:30	10/03/24 18:13	1
Lead	<0.000500		0.000500		mg/L		09/23/24 09:30	10/03/24 18:13	1
Lithium	0.0616		0.0100		mg/L		09/23/24 09:30	10/03/24 18:13	1
Molybdenum	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 18:13	1
Selenium	0.118		0.00500		mg/L		09/23/24 09:30	10/03/24 18:13	1
Thallium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:13	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	716		50.0		mg/L			09/24/24 16:03	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.0	HF	1.0		SU			09/19/24 16:43	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.145	U	0.0929	0.0932	1.00	0.145	pCi/L	09/24/24 08:30	10/16/24 10:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	88.1		30 - 110					09/24/24 08:30	10/16/24 10:17	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.673	U	0.441	0.444	1.00	0.673	pCi/L	09/24/24 08:33	10/10/24 15:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	88.1		30 - 110					09/24/24 08:33	10/10/24 15:00	1
Y Carrier	78.9		30 - 110					09/24/24 08:33	10/10/24 15:00	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW16-GW-0924

Lab Sample ID: 310-291015-5

Date Collected: 09/18/24 08:20

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: TAL-STL 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	0.691		0.451	0.454	5.00	0.673	pCi/L		10/17/24 15:03	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW17-GW-0924

Lab Sample ID: 310-291015-6

Date Collected: 09/18/24 10:55

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23.9		5.00		mg/L			09/26/24 14:11	5
Sulfate	70.5		5.00		mg/L			09/26/24 14:11	5
Fluoride	<1.00		1.00		mg/L			09/26/24 14:11	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200	*+	0.00200		mg/L		09/23/24 09:30	10/03/24 18:21	1
Arsenic	0.0190		0.00200		mg/L		09/23/24 09:30	10/03/24 18:21	1
Barium	0.143		0.00200		mg/L		09/23/24 09:30	10/03/24 18:21	1
Beryllium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:21	1
Boron	0.229		0.100		mg/L		09/23/24 09:30	10/03/24 18:21	1
Cadmium	<0.000200		0.000200		mg/L		09/23/24 09:30	10/03/24 18:21	1
Calcium	180		0.500		mg/L		09/23/24 09:30	10/03/24 18:21	1
Chromium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:21	1
Cobalt	0.00148		0.000500		mg/L		09/23/24 09:30	10/03/24 18:21	1
Lead	<0.000500		0.000500		mg/L		09/23/24 09:30	10/03/24 18:21	1
Lithium	0.0752		0.0100		mg/L		09/23/24 09:30	10/03/24 18:21	1
Molybdenum	0.00349		0.00200		mg/L		09/23/24 09:30	10/03/24 18:21	1
Selenium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:21	1
Thallium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:21	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	712		50.0		mg/L			09/24/24 16:03	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.0	HF	1.0		SU			09/19/24 16:48	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.227		0.122	0.124	1.00	0.164	pCi/L	09/24/24 08:30	10/16/24 10:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	90.8		30 - 110					09/24/24 08:30	10/16/24 10:17	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.938		0.470	0.478	1.00	0.652	pCi/L	09/24/24 08:33	10/10/24 15:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	90.8		30 - 110					09/24/24 08:33	10/10/24 15:00	1
Y Carrier	78.1		30 - 110					09/24/24 08:33	10/10/24 15:00	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW17-GW-0924

Lab Sample ID: 310-291015-6

Date Collected: 09/18/24 10:55

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: TAL-STL 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	1.16		0.486	0.494	5.00	0.652	pCi/L		10/17/24 15:03	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW18-GW-0924

Lab Sample ID: 310-291015-7

Date Collected: 09/18/24 12:15

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			09/26/24 14:23	5
Sulfate	125		5.00		mg/L			09/26/24 14:23	5
Fluoride	<1.00		1.00		mg/L			09/26/24 14:23	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200	*+	0.00200		mg/L		09/23/24 09:30	10/03/24 18:32	1
Arsenic	0.0243		0.00200		mg/L		09/23/24 09:30	10/03/24 18:32	1
Barium	0.138		0.00200		mg/L		09/23/24 09:30	10/03/24 18:32	1
Beryllium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:32	1
Boron	0.244		0.100		mg/L		09/23/24 09:30	10/03/24 18:32	1
Cadmium	<0.000200		0.000200		mg/L		09/23/24 09:30	10/03/24 18:32	1
Calcium	208		0.500		mg/L		09/23/24 09:30	10/03/24 18:32	1
Chromium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:32	1
Cobalt	0.00277		0.000500		mg/L		09/23/24 09:30	10/03/24 18:32	1
Lead	<0.000500		0.000500		mg/L		09/23/24 09:30	10/03/24 18:32	1
Lithium	0.156		0.0100		mg/L		09/23/24 09:30	10/03/24 18:32	1
Molybdenum	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 18:32	1
Selenium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:32	1
Thallium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:32	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	824		50.0		mg/L			09/24/24 16:03	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.0	HF	1.0		SU			09/19/24 16:49	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.343		0.140	0.144	1.00	0.167	pCi/L	09/24/24 08:30	10/16/24 10:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	92.8		30 - 110					09/24/24 08:30	10/16/24 10:17	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.572	U	0.377	0.380	1.00	0.572	pCi/L	09/24/24 08:33	10/10/24 15:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	92.8		30 - 110					09/24/24 08:33	10/10/24 15:00	1
Y Carrier	81.9		30 - 110					09/24/24 08:33	10/10/24 15:00	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW18-GW-0924

Lab Sample ID: 310-291015-7

Date Collected: 09/18/24 12:15

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: TAL-STL 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	0.854		0.402	0.406	5.00	0.572	pCi/L		10/17/24 15:03	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW19-GW-0924

Lab Sample ID: 310-291015-8

Date Collected: 09/18/24 10:30

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	62.6		5.00		mg/L			09/26/24 14:34	5
Sulfate	365		5.00		mg/L			09/26/24 14:34	5
Fluoride	<1.00		1.00		mg/L			09/26/24 14:34	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200	*+	0.00200		mg/L		09/23/24 09:30	10/03/24 18:34	1
Arsenic	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 18:34	1
Barium	0.0942		0.00200		mg/L		09/23/24 09:30	10/03/24 18:34	1
Beryllium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:34	1
Boron	0.460		0.100		mg/L		09/23/24 09:30	10/03/24 18:34	1
Cadmium	<0.000200		0.000200		mg/L		09/23/24 09:30	10/03/24 18:34	1
Calcium	317		0.500		mg/L		09/23/24 09:30	10/03/24 18:34	1
Chromium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:34	1
Cobalt	0.00173		0.000500		mg/L		09/23/24 09:30	10/03/24 18:34	1
Lead	<0.000500		0.000500		mg/L		09/23/24 09:30	10/03/24 18:34	1
Lithium	0.182		0.0100		mg/L		09/23/24 09:30	10/03/24 18:34	1
Molybdenum	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 18:34	1
Selenium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:34	1
Thallium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:34	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 11:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1360		50.0		mg/L			09/24/24 16:03	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	6.7	HF	1.0		SU			09/19/24 16:50	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.231		0.101	0.103	1.00	0.110	pCi/L	09/24/24 08:30	10/16/24 23:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	93.8		30 - 110					09/24/24 08:30	10/16/24 23:19	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.613		0.406	0.410	1.00	0.598	pCi/L	09/24/24 08:33	10/10/24 15:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	93.8		30 - 110					09/24/24 08:33	10/10/24 15:00	1
Y Carrier	75.1		30 - 110					09/24/24 08:33	10/10/24 15:00	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW19-GW-0924

Lab Sample ID: 310-291015-8

Date Collected: 09/18/24 10:30

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: TAL-STL 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	0.843		0.418	0.423	5.00	0.598	pCi/L		10/17/24 15:03	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW20-GW-0924

Lab Sample ID: 310-291015-9

Date Collected: 09/18/24 10:00

Matrix: Ground Water

Date Received: 09/19/24 16:05

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	61.6		5.00		mg/L			09/26/24 14:46	5
Sulfate	398		5.00		mg/L			09/26/24 14:46	5
Fluoride	<1.00		1.00		mg/L			09/26/24 14:46	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200	*+	0.00200		mg/L		09/23/24 09:30	10/03/24 18:36	1
Arsenic	0.0124		0.00200		mg/L		09/23/24 09:30	10/03/24 18:36	1
Barium	0.0975		0.00200		mg/L		09/23/24 09:30	10/03/24 18:36	1
Beryllium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:36	1
Boron	1.55		0.100		mg/L		09/23/24 09:30	10/03/24 18:36	1
Cadmium	<0.000200		0.000200		mg/L		09/23/24 09:30	10/03/24 18:36	1
Calcium	262		0.500		mg/L		09/23/24 09:30	10/03/24 18:36	1
Chromium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:36	1
Cobalt	0.00147		0.000500		mg/L		09/23/24 09:30	10/03/24 18:36	1
Lead	<0.000500		0.000500		mg/L		09/23/24 09:30	10/03/24 18:36	1
Lithium	0.120		0.0100		mg/L		09/23/24 09:30	10/03/24 18:36	1
Molybdenum	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 18:36	1
Selenium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 18:36	1
Thallium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 18:36	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 11:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1230		50.0		mg/L			09/24/24 16:03	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	7.1	HF	1.0		SU			09/19/24 16:51	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.224		0.0984	0.100	1.00	0.109	pCi/L	09/24/24 08:30	10/16/24 23:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	98.3		30 - 110					09/24/24 08:30	10/16/24 23:19	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.554	U	0.305	0.305	1.00	0.554	pCi/L	09/24/24 08:33	10/10/24 15:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	98.3		30 - 110					09/24/24 08:33	10/10/24 15:00	1
Y Carrier	81.5		30 - 110					09/24/24 08:33	10/10/24 15:00	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW20-GW-0924

Lab Sample ID: 310-291015-9

Date Collected: 09/18/24 10:00

Matrix: Ground Water

Date Received: 09/19/24 16:05

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

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	<0.554	U	0.320	0.321	5.00	0.554	pCi/L		10/17/24 15:03	1

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Definitions/Glossary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Qualifiers

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

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

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-434581/3
Matrix: Water
Analysis Batch: 434581

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			09/26/24 09:36	1
Sulfate	<1.00		1.00		mg/L			09/26/24 09:36	1
Fluoride	<0.200		0.200		mg/L			09/26/24 09:36	1

Lab Sample ID: LCS 310-434581/4
Matrix: Water
Analysis Batch: 434581

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.933		mg/L		99	90 - 110
Sulfate	10.0	10.20		mg/L		102	90 - 110
Fluoride	2.00	1.966		mg/L		98	90 - 110

Lab Sample ID: 310-291015-5 MS
Matrix: Ground Water
Analysis Batch: 434581

Client Sample ID: MW16-GW-0924
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.86		25.0	29.36		mg/L		94	80 - 120
Sulfate	72.0		25.0	97.03		mg/L		100	80 - 120
Fluoride	<1.00		5.00	5.112		mg/L		102	80 - 120

Lab Sample ID: 310-291015-5 MSD
Matrix: Ground Water
Analysis Batch: 434581

Client Sample ID: MW16-GW-0924
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	5.86		25.0	29.26		mg/L		94	80 - 120	0	15
Sulfate	72.0		25.0	97.41		mg/L		102	80 - 120	0	15
Fluoride	<1.00		5.00	5.124		mg/L		102	80 - 120	0	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-433838/1-A
Matrix: Water
Analysis Batch: 435214

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 433838

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 17:49	1
Arsenic	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 17:49	1
Barium	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 17:49	1
Beryllium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 17:49	1
Boron	<0.100		0.100		mg/L		09/23/24 09:30	10/03/24 17:49	1
Cadmium	<0.000200		0.000200		mg/L		09/23/24 09:30	10/03/24 17:49	1
Calcium	<0.500		0.500		mg/L		09/23/24 09:30	10/03/24 17:49	1
Chromium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 17:49	1
Cobalt	<0.000500		0.000500		mg/L		09/23/24 09:30	10/03/24 17:49	1
Lead	<0.000500		0.000500		mg/L		09/23/24 09:30	10/03/24 17:49	1
Lithium	<0.0100		0.0100		mg/L		09/23/24 09:30	10/03/24 17:49	1
Molybdenum	<0.00200		0.00200		mg/L		09/23/24 09:30	10/03/24 17:49	1

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QC Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

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

Lab Sample ID: MB 310-433838/1-A
Matrix: Water
Analysis Batch: 435214

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 433838

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.00500		0.00500		mg/L		09/23/24 09:30	10/03/24 17:49	1
Thallium	<0.00100		0.00100		mg/L		09/23/24 09:30	10/03/24 17:49	1

Lab Sample ID: LCS 310-433838/2-A
Matrix: Water
Analysis Batch: 435214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 433838

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2484	*+	mg/L		124	80 - 120
Arsenic	0.200	0.2249		mg/L		112	80 - 120
Barium	0.100	0.1098		mg/L		110	80 - 120
Beryllium	0.100	0.1022		mg/L		102	80 - 120
Boron	0.200	0.2130		mg/L		106	80 - 120
Cadmium	0.100	0.1075		mg/L		108	80 - 120
Calcium	2.00	2.079		mg/L		104	80 - 120
Chromium	0.100	0.09956		mg/L		100	80 - 120
Cobalt	0.100	0.1154		mg/L		115	80 - 120
Lead	0.200	0.2185		mg/L		109	80 - 120
Lithium	0.200	0.2125		mg/L		106	80 - 120
Molybdenum	0.200	0.2049		mg/L		102	80 - 120
Selenium	0.400	0.4239		mg/L		106	80 - 120
Thallium	0.100	0.1019		mg/L		102	80 - 120

Lab Sample ID: 310-291015-5 MS
Matrix: Ground Water
Analysis Batch: 435214

Client Sample ID: MW16-GW-0924
Prep Type: Total/NA
Prep Batch: 433838

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<0.00200	*+ F1	0.200	0.2543	F1	mg/L		127	75 - 125
Arsenic	<0.00200		0.200	0.2289		mg/L		114	75 - 125
Barium	0.350	F1	0.100	0.5250	F1	mg/L		175	75 - 125
Beryllium	<0.00100		0.100	0.1087		mg/L		109	75 - 125
Boron	0.184		0.200	0.3984		mg/L		107	75 - 125
Cadmium	<0.000200		0.100	0.1064		mg/L		106	75 - 125
Calcium	170		2.00	174.4	4	mg/L		208	75 - 125
Chromium	<0.00500		0.100	0.09672		mg/L		97	75 - 125
Cobalt	0.00158		0.100	0.1103		mg/L		109	75 - 125
Lead	<0.000500		0.200	0.2139		mg/L		107	75 - 125
Lithium	0.0616		0.200	0.2788		mg/L		109	75 - 125
Molybdenum	<0.00200		0.200	0.2162		mg/L		108	75 - 125
Selenium	0.118		0.400	0.5523		mg/L		109	75 - 125
Thallium	<0.00100		0.100	0.09594		mg/L		96	75 - 125

Lab Sample ID: 310-291015-5 MSD
Matrix: Ground Water
Analysis Batch: 435214

Client Sample ID: MW16-GW-0924
Prep Type: Total/NA
Prep Batch: 433838

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	<0.00200	*+ F1	0.200	0.2468		mg/L		123	75 - 125	3	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

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

Lab Sample ID: 310-291015-5 MSD
Matrix: Ground Water
Analysis Batch: 435214

Client Sample ID: MW16-GW-0924
Prep Type: Total/NA
Prep Batch: 433838

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
Arsenic	<0.00200		0.200	0.2215		mg/L		110	75 - 125	3	20
Barium	0.350	F1	0.100	0.5111	F1	mg/L		161	75 - 125	3	20
Beryllium	<0.00100		0.100	0.1055		mg/L		106	75 - 125	3	20
Boron	0.184		0.200	0.4020		mg/L		109	75 - 125	1	20
Cadmium	<0.000200		0.100	0.1041		mg/L		104	75 - 125	2	20
Calcium	170		2.00	171.0	4	mg/L		39	75 - 125	2	20
Chromium	<0.00500		0.100	0.09470		mg/L		95	75 - 125	2	20
Cobalt	0.00158		0.100	0.1087		mg/L		107	75 - 125	1	20
Lead	<0.000500		0.200	0.2071		mg/L		104	75 - 125	3	20
Lithium	0.0616		0.200	0.2704		mg/L		104	75 - 125	3	20
Molybdenum	<0.00200		0.200	0.2091		mg/L		105	75 - 125	3	20
Selenium	0.118		0.400	0.5399		mg/L		105	75 - 125	2	20
Thallium	<0.00100		0.100	0.09617		mg/L		96	75 - 125	0	20

Lab Sample ID: 310-291015-1 DU
Matrix: Ground Water
Analysis Batch: 435214

Client Sample ID: MW15-GW-0924
Prep Type: Total/NA
Prep Batch: 433838

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	RPD
	Result	Qualifier	Result	Qualifier				Limit
Antimony	<0.00200	*+	<0.00200	*+	mg/L		NC	20
Arsenic	<0.00200		<0.00200		mg/L		NC	20
Barium	0.110		0.1129		mg/L		2	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Boron	0.785		0.8126		mg/L		3	20
Cadmium	<0.000200		<0.000200		mg/L		NC	20
Calcium	129		134.1		mg/L		4	20
Chromium	<0.00500		<0.00500		mg/L		NC	20
Cobalt	0.00241		0.002809		mg/L		15	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Lithium	0.0578		0.05908		mg/L		2	20
Molybdenum	<0.00200		<0.00200		mg/L		NC	20
Selenium	0.00854		0.008998		mg/L		5	20
Thallium	<0.00100		<0.00100		mg/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-435005/1-A
Matrix: Water
Analysis Batch: 435443

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 435005

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	<0.000200		0.000200		mg/L		10/04/24 14:05	10/07/24 10:13	1

Lab Sample ID: LCS 310-435005/2-A
Matrix: Water
Analysis Batch: 435443

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 435005

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
	Added	Result	Qualifier				Limits
Mercury	0.00167	0.001785		mg/L		107	80 - 120

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QC Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 310-291015-5 MS
 Matrix: Ground Water
 Analysis Batch: 435443

Client Sample ID: MW16-GW-0924
 Prep Type: Total/NA
 Prep Batch: 435005

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.000200		0.00167	0.001787		mg/L		107	80 - 120

Lab Sample ID: 310-291015-5 MSD
 Matrix: Ground Water
 Analysis Batch: 435443

Client Sample ID: MW16-GW-0924
 Prep Type: Total/NA
 Prep Batch: 435005

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.000200		0.00167	0.001811		mg/L		109	80 - 120	1	20

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

Lab Sample ID: MB 310-434170/1
 Matrix: Water
 Analysis Batch: 434170

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	<50.0		50.0		mg/L			09/24/24 16:03	1

Lab Sample ID: LCS 310-434170/2
 Matrix: Water
 Analysis Batch: 434170

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	1000	1038		mg/L		104	88 - 110

Lab Sample ID: 310-291015-4 DU
 Matrix: Ground Water
 Analysis Batch: 434170

Client Sample ID: MW04-GW-0924
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	574		570.0		mg/L		0.7	16

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-433664/26
 Matrix: Water
 Analysis Batch: 433664

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		99	98 - 102

Lab Sample ID: 310-291015-5 DU
 Matrix: Ground Water
 Analysis Batch: 433664

Client Sample ID: MW16-GW-0924
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.0	HF	7.1		SU		0.1	20

QC Sample Results

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-680768/1-A
Matrix: Water
Analysis Batch: 683842

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 680768

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	<0.135	U	0.0649	0.0649	1.00	0.135	pCi/L	09/24/24 08:30	10/16/24 10:16	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Barium	94.8		30 - 110			09/24/24 08:30	10/16/24 10:16	1		

Lab Sample ID: LCS 160-680768/2-A
Matrix: Water
Analysis Batch: 683842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 680768

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
				Uncert. (2σ+/-)					
Radium-226	9.58	9.392		1.04	1.00	0.145	pCi/L	98	75 - 125
Carrier	LCS LCS		Limits			Prepared	Analyzed	Dil Fac	
	%Yield	Qualifier							
Barium	78.9		30 - 110						

Lab Sample ID: 310-291015-5 MS
Matrix: Ground Water
Analysis Batch: 683842

Client Sample ID: MW16-GW-0924
Prep Type: Total/NA
Prep Batch: 680768

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits
						Uncert. (2σ+/-)					
Radium-226	<0.145	U	9.53	9.084		0.992	1.00	0.122	pCi/L	94	60 - 140
Carrier	MS MS		Limits			Prepared	Analyzed	Dil Fac			
	%Yield	Qualifier									
Barium	91.6		30 - 110								

Lab Sample ID: 310-291015-5 MSD
Matrix: Ground Water
Analysis Batch: 683842

Client Sample ID: MW16-GW-0924
Prep Type: Total/NA
Prep Batch: 680768

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
						Uncert. (2σ+/-)							
Radium-226	<0.145	U	9.61	10.79		1.16	1.00	0.145	pCi/L	111	60 - 140	0.79	1
Carrier	MSD MSD		Limits			Prepared	Analyzed	Dil Fac					
	%Yield	Qualifier											
Barium	85.9		30 - 110										

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-680769/1-A
Matrix: Water
Analysis Batch: 682913

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 680769

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	<0.542	U	0.316	0.317	1.00	0.542	pCi/L	09/24/24 08:33	10/10/24 13:56	1

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QC Sample Results

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

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

Carrier	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Yield	Qualifier				
Barium	94.8		30 - 110	09/24/24 08:33	10/10/24 13:56	1
Y Carrier	80.7		30 - 110	09/24/24 08:33	10/10/24 13:56	1

Lab Sample ID: LCS 160-680769/2-A
Matrix: Water
Analysis Batch: 682913

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 680769

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits

Carrier	LCS LCS		Limits
	%Yield	Qualifier	
Barium	78.9		30 - 110
Y Carrier	75.5		30 - 110

Lab Sample ID: 310-291015-5 MS
Matrix: Ground Water
Analysis Batch: 683027

Client Sample ID: MW16-GW-0924
Prep Type: Total/NA
Prep Batch: 680769

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits

Carrier	MS MS		Limits
	%Yield	Qualifier	
Barium	91.6		30 - 110
Y Carrier	78.5		30 - 110

Lab Sample ID: 310-291015-5 MSD
Matrix: Ground Water
Analysis Batch: 683027

Client Sample ID: MW16-GW-0924
Prep Type: Total/NA
Prep Batch: 680769

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit

Carrier	MSD MSD		Limits
	%Yield	Qualifier	
Barium	85.9		30 - 110
Y Carrier	78.5		30 - 110

QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

HPLC/IC

Analysis Batch: 434581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291015-1	MW15-GW-0924	Total/NA	Ground Water	9056A	
310-291015-2	DP01-GW-0924	Total/NA	Ground Water	9056A	
310-291015-3	MW02-GW-0924	Total/NA	Ground Water	9056A	
310-291015-4	MW04-GW-0924	Total/NA	Ground Water	9056A	
310-291015-5	MW16-GW-0924	Total/NA	Ground Water	9056A	
310-291015-6	MW17-GW-0924	Total/NA	Ground Water	9056A	
310-291015-7	MW18-GW-0924	Total/NA	Ground Water	9056A	
310-291015-8	MW19-GW-0924	Total/NA	Ground Water	9056A	
310-291015-9	MW20-GW-0924	Total/NA	Ground Water	9056A	
MB 310-434581/3	Method Blank	Total/NA	Water	9056A	
LCS 310-434581/4	Lab Control Sample	Total/NA	Water	9056A	
310-291015-5 MS	MW16-GW-0924	Total/NA	Ground Water	9056A	
310-291015-5 MSD	MW16-GW-0924	Total/NA	Ground Water	9056A	

Metals

Prep Batch: 433838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291015-1	MW15-GW-0924	Total/NA	Ground Water	3005A	
310-291015-2	DP01-GW-0924	Total/NA	Ground Water	3005A	
310-291015-3	MW02-GW-0924	Total/NA	Ground Water	3005A	
310-291015-4	MW04-GW-0924	Total/NA	Ground Water	3005A	
310-291015-5	MW16-GW-0924	Total/NA	Ground Water	3005A	
310-291015-6	MW17-GW-0924	Total/NA	Ground Water	3005A	
310-291015-7	MW18-GW-0924	Total/NA	Ground Water	3005A	
310-291015-8	MW19-GW-0924	Total/NA	Ground Water	3005A	
310-291015-9	MW20-GW-0924	Total/NA	Ground Water	3005A	
MB 310-433838/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-433838/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-291015-5 MS	MW16-GW-0924	Total/NA	Ground Water	3005A	
310-291015-5 MSD	MW16-GW-0924	Total/NA	Ground Water	3005A	
310-291015-1 DU	MW15-GW-0924	Total/NA	Ground Water	3005A	

Prep Batch: 435005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291015-1	MW15-GW-0924	Total/NA	Ground Water	7470A	
310-291015-2	DP01-GW-0924	Total/NA	Ground Water	7470A	
310-291015-3	MW02-GW-0924	Total/NA	Ground Water	7470A	
310-291015-4	MW04-GW-0924	Total/NA	Ground Water	7470A	
310-291015-5	MW16-GW-0924	Total/NA	Ground Water	7470A	
310-291015-6	MW17-GW-0924	Total/NA	Ground Water	7470A	
310-291015-7	MW18-GW-0924	Total/NA	Ground Water	7470A	
310-291015-8	MW19-GW-0924	Total/NA	Ground Water	7470A	
310-291015-9	MW20-GW-0924	Total/NA	Ground Water	7470A	
MB 310-435005/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-435005/2-A	Lab Control Sample	Total/NA	Water	7470A	
310-291015-5 MS	MW16-GW-0924	Total/NA	Ground Water	7470A	
310-291015-5 MSD	MW16-GW-0924	Total/NA	Ground Water	7470A	

QC Association Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Metals

Analysis Batch: 435214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291015-1	MW15-GW-0924	Total/NA	Ground Water	6020B	433838
310-291015-2	DP01-GW-0924	Total/NA	Ground Water	6020B	433838
310-291015-3	MW02-GW-0924	Total/NA	Ground Water	6020B	433838
310-291015-4	MW04-GW-0924	Total/NA	Ground Water	6020B	433838
310-291015-5	MW16-GW-0924	Total/NA	Ground Water	6020B	433838
310-291015-6	MW17-GW-0924	Total/NA	Ground Water	6020B	433838
310-291015-7	MW18-GW-0924	Total/NA	Ground Water	6020B	433838
310-291015-8	MW19-GW-0924	Total/NA	Ground Water	6020B	433838
310-291015-9	MW20-GW-0924	Total/NA	Ground Water	6020B	433838
MB 310-433838/1-A	Method Blank	Total/NA	Water	6020B	433838
LCS 310-433838/2-A	Lab Control Sample	Total/NA	Water	6020B	433838
310-291015-5 MS	MW16-GW-0924	Total/NA	Ground Water	6020B	433838
310-291015-5 MSD	MW16-GW-0924	Total/NA	Ground Water	6020B	433838
310-291015-1 DU	MW15-GW-0924	Total/NA	Ground Water	6020B	433838

Analysis Batch: 435443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291015-1	MW15-GW-0924	Total/NA	Ground Water	7470A	435005
310-291015-2	DP01-GW-0924	Total/NA	Ground Water	7470A	435005
310-291015-3	MW02-GW-0924	Total/NA	Ground Water	7470A	435005
310-291015-4	MW04-GW-0924	Total/NA	Ground Water	7470A	435005
310-291015-5	MW16-GW-0924	Total/NA	Ground Water	7470A	435005
310-291015-6	MW17-GW-0924	Total/NA	Ground Water	7470A	435005
310-291015-7	MW18-GW-0924	Total/NA	Ground Water	7470A	435005
310-291015-8	MW19-GW-0924	Total/NA	Ground Water	7470A	435005
310-291015-9	MW20-GW-0924	Total/NA	Ground Water	7470A	435005
MB 310-435005/1-A	Method Blank	Total/NA	Water	7470A	435005
LCS 310-435005/2-A	Lab Control Sample	Total/NA	Water	7470A	435005
310-291015-5 MS	MW16-GW-0924	Total/NA	Ground Water	7470A	435005
310-291015-5 MSD	MW16-GW-0924	Total/NA	Ground Water	7470A	435005

General Chemistry

Analysis Batch: 433664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291015-1	MW15-GW-0924	Total/NA	Ground Water	SM 4500 H+ B	
310-291015-2	DP01-GW-0924	Total/NA	Ground Water	SM 4500 H+ B	
310-291015-3	MW02-GW-0924	Total/NA	Ground Water	SM 4500 H+ B	
310-291015-4	MW04-GW-0924	Total/NA	Ground Water	SM 4500 H+ B	
310-291015-5	MW16-GW-0924	Total/NA	Ground Water	SM 4500 H+ B	
310-291015-6	MW17-GW-0924	Total/NA	Ground Water	SM 4500 H+ B	
310-291015-7	MW18-GW-0924	Total/NA	Ground Water	SM 4500 H+ B	
310-291015-8	MW19-GW-0924	Total/NA	Ground Water	SM 4500 H+ B	
310-291015-9	MW20-GW-0924	Total/NA	Ground Water	SM 4500 H+ B	
LCS 310-433664/26	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-291015-5 DU	MW16-GW-0924	Total/NA	Ground Water	SM 4500 H+ B	

Analysis Batch: 434170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291015-1	MW15-GW-0924	Total/NA	Ground Water	SM 2540C	
310-291015-2	DP01-GW-0924	Total/NA	Ground Water	SM 2540C	

Eurofins Cedar Falls

QC Association Summary

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

General Chemistry (Continued)

Analysis Batch: 434170 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291015-3	MW02-GW-0924	Total/NA	Ground Water	SM 2540C	
310-291015-4	MW04-GW-0924	Total/NA	Ground Water	SM 2540C	
310-291015-5	MW16-GW-0924	Total/NA	Ground Water	SM 2540C	
310-291015-6	MW17-GW-0924	Total/NA	Ground Water	SM 2540C	
310-291015-7	MW18-GW-0924	Total/NA	Ground Water	SM 2540C	
310-291015-8	MW19-GW-0924	Total/NA	Ground Water	SM 2540C	
310-291015-9	MW20-GW-0924	Total/NA	Ground Water	SM 2540C	
MB 310-434170/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-434170/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-291015-4 DU	MW04-GW-0924	Total/NA	Ground Water	SM 2540C	

Rad

Prep Batch: 680768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291015-1	MW15-GW-0924	Total/NA	Ground Water	PrecSep-21	
310-291015-2	DP01-GW-0924	Total/NA	Ground Water	PrecSep-21	
310-291015-3	MW02-GW-0924	Total/NA	Ground Water	PrecSep-21	
310-291015-4	MW04-GW-0924	Total/NA	Ground Water	PrecSep-21	
310-291015-5	MW16-GW-0924	Total/NA	Ground Water	PrecSep-21	
310-291015-6	MW17-GW-0924	Total/NA	Ground Water	PrecSep-21	
310-291015-7	MW18-GW-0924	Total/NA	Ground Water	PrecSep-21	
310-291015-8	MW19-GW-0924	Total/NA	Ground Water	PrecSep-21	
310-291015-9	MW20-GW-0924	Total/NA	Ground Water	PrecSep-21	
MB 160-680768/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-680768/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
310-291015-5 MS	MW16-GW-0924	Total/NA	Ground Water	PrecSep-21	
310-291015-5 MSD	MW16-GW-0924	Total/NA	Ground Water	PrecSep-21	

Prep Batch: 680769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-291015-1	MW15-GW-0924	Total/NA	Ground Water	PrecSep_0	
310-291015-2	DP01-GW-0924	Total/NA	Ground Water	PrecSep_0	
310-291015-3	MW02-GW-0924	Total/NA	Ground Water	PrecSep_0	
310-291015-4	MW04-GW-0924	Total/NA	Ground Water	PrecSep_0	
310-291015-5	MW16-GW-0924	Total/NA	Ground Water	PrecSep_0	
310-291015-6	MW17-GW-0924	Total/NA	Ground Water	PrecSep_0	
310-291015-7	MW18-GW-0924	Total/NA	Ground Water	PrecSep_0	
310-291015-8	MW19-GW-0924	Total/NA	Ground Water	PrecSep_0	
310-291015-9	MW20-GW-0924	Total/NA	Ground Water	PrecSep_0	
MB 160-680769/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-680769/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
310-291015-5 MS	MW16-GW-0924	Total/NA	Ground Water	PrecSep_0	
310-291015-5 MSD	MW16-GW-0924	Total/NA	Ground Water	PrecSep_0	

Lab Chronicle

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW15-GW-0924

Date Collected: 09/18/24 09:00

Date Received: 09/19/24 16:05

Lab Sample ID: 310-291015-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434581	HE7K	EET CF	09/26/24 12:27
Total/NA	Prep	3005A			433838	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 18:02
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:37
Total/NA	Analysis	SM 2540C		1	434170	MDU9	EET CF	09/24/24 16:03
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 16:47
Total/NA	Prep	PrecSep-21			680768	MLT	EET SL	09/24/24 08:30
Total/NA	Analysis	9315		1	683842	SCB	EET SL	10/16/24 10:17
Total/NA	Prep	PrecSep_0			680769	MLT	EET SL	09/24/24 08:33
Total/NA	Analysis	9320		1	682913	SWS	EET SL	10/10/24 13:56
Total/NA	Analysis	Ra226_Ra228		1	684094	SCB	EET SL	10/17/24 15:03

Client Sample ID: DP01-GW-0924

Date Collected: 09/18/24 00:00

Date Received: 09/19/24 16:05

Lab Sample ID: 310-291015-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434581	HE7K	EET CF	09/26/24 12:38
Total/NA	Prep	3005A			433838	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 18:07
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:39
Total/NA	Analysis	SM 2540C		1	434170	MDU9	EET CF	09/24/24 16:03
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 16:52
Total/NA	Prep	PrecSep-21			680768	MLT	EET SL	09/24/24 08:30
Total/NA	Analysis	9315		1	683842	SCB	EET SL	10/16/24 10:17
Total/NA	Prep	PrecSep_0			680769	MLT	EET SL	09/24/24 08:33
Total/NA	Analysis	9320		1	683027	FLC	EET SL	10/10/24 15:00
Total/NA	Analysis	Ra226_Ra228		1	684094	SCB	EET SL	10/17/24 15:03

Client Sample ID: MW02-GW-0924

Date Collected: 09/18/24 09:35

Date Received: 09/19/24 16:05

Lab Sample ID: 310-291015-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434581	HE7K	EET CF	09/26/24 12:50
Total/NA	Prep	3005A			433838	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 18:09
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:41
Total/NA	Analysis	SM 2540C		1	434170	MDU9	EET CF	09/24/24 16:03
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 16:45

Lab Chronicle

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW02-GW-0924

Lab Sample ID: 310-291015-3

Date Collected: 09/18/24 09:35

Matrix: Ground Water

Date Received: 09/19/24 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			680768	MLT	EET SL	09/24/24 08:30
Total/NA	Analysis	9315		1	683842	SCB	EET SL	10/16/24 10:17
Total/NA	Prep	PrecSep_0			680769	MLT	EET SL	09/24/24 08:33
Total/NA	Analysis	9320		1	683027	FLC	EET SL	10/10/24 15:00
Total/NA	Analysis	Ra226_Ra228		1	684094	SCB	EET SL	10/17/24 15:03

Client Sample ID: MW04-GW-0924

Lab Sample ID: 310-291015-4

Date Collected: 09/18/24 12:10

Matrix: Ground Water

Date Received: 09/19/24 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434581	HE7K	EET CF	09/26/24 13:02
Total/NA	Prep	3005A			433838	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 18:11
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:43
Total/NA	Analysis	SM 2540C		1	434170	MDU9	EET CF	09/24/24 16:03
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 16:46
Total/NA	Prep	PrecSep-21			680768	MLT	EET SL	09/24/24 08:30
Total/NA	Analysis	9315		1	683842	SCB	EET SL	10/16/24 10:17
Total/NA	Prep	PrecSep_0			680769	MLT	EET SL	09/24/24 08:33
Total/NA	Analysis	9320		1	683027	FLC	EET SL	10/10/24 15:00
Total/NA	Analysis	Ra226_Ra228		1	684094	SCB	EET SL	10/17/24 15:03

Client Sample ID: MW16-GW-0924

Lab Sample ID: 310-291015-5

Date Collected: 09/18/24 08:20

Matrix: Ground Water

Date Received: 09/19/24 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434581	HE7K	EET CF	09/26/24 13:36
Total/NA	Prep	3005A			433838	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 18:13
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:45
Total/NA	Analysis	SM 2540C		1	434170	MDU9	EET CF	09/24/24 16:03
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 16:43
Total/NA	Prep	PrecSep-21			680768	MLT	EET SL	09/24/24 08:30
Total/NA	Analysis	9315		1	683842	SCB	EET SL	10/16/24 10:17
Total/NA	Prep	PrecSep_0			680769	MLT	EET SL	09/24/24 08:33
Total/NA	Analysis	9320		1	683027	FLC	EET SL	10/10/24 15:00
Total/NA	Analysis	Ra226_Ra228		1	684094	SCB	EET SL	10/17/24 15:03

Lab Chronicle

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW17-GW-0924

Date Collected: 09/18/24 10:55

Date Received: 09/19/24 16:05

Lab Sample ID: 310-291015-6

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434581	HE7K	EET CF	09/26/24 14:11
Total/NA	Prep	3005A			433838	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 18:21
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:51
Total/NA	Analysis	SM 2540C		1	434170	MDU9	EET CF	09/24/24 16:03
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 16:48
Total/NA	Prep	PrecSep-21			680768	MLT	EET SL	09/24/24 08:30
Total/NA	Analysis	9315		1	683842	SCB	EET SL	10/16/24 10:17
Total/NA	Prep	PrecSep_0			680769	MLT	EET SL	09/24/24 08:33
Total/NA	Analysis	9320		1	683027	FLC	EET SL	10/10/24 15:00
Total/NA	Analysis	Ra226_Ra228		1	684094	SCB	EET SL	10/17/24 15:03

Client Sample ID: MW18-GW-0924

Date Collected: 09/18/24 12:15

Date Received: 09/19/24 16:05

Lab Sample ID: 310-291015-7

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434581	HE7K	EET CF	09/26/24 14:23
Total/NA	Prep	3005A			433838	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 18:32
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 10:54
Total/NA	Analysis	SM 2540C		1	434170	MDU9	EET CF	09/24/24 16:03
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 16:49
Total/NA	Prep	PrecSep-21			680768	MLT	EET SL	09/24/24 08:30
Total/NA	Analysis	9315		1	683842	SCB	EET SL	10/16/24 10:17
Total/NA	Prep	PrecSep_0			680769	MLT	EET SL	09/24/24 08:33
Total/NA	Analysis	9320		1	683027	FLC	EET SL	10/10/24 15:00
Total/NA	Analysis	Ra226_Ra228		1	684094	SCB	EET SL	10/17/24 15:03

Client Sample ID: MW19-GW-0924

Date Collected: 09/18/24 10:30

Date Received: 09/19/24 16:05

Lab Sample ID: 310-291015-8

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434581	HE7K	EET CF	09/26/24 14:34
Total/NA	Prep	3005A			433838	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 18:34
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 11:00
Total/NA	Analysis	SM 2540C		1	434170	MDU9	EET CF	09/24/24 16:03
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 16:50

Lab Chronicle

Client: GHD Services Inc.
 Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Client Sample ID: MW19-GW-0924

Lab Sample ID: 310-291015-8

Date Collected: 09/18/24 10:30

Matrix: Ground Water

Date Received: 09/19/24 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			680768	MLT	EET SL	09/24/24 08:30
Total/NA	Analysis	9315		1	683772	FLC	EET SL	10/16/24 23:19
Total/NA	Prep	PrecSep_0			680769	MLT	EET SL	09/24/24 08:33
Total/NA	Analysis	9320		1	683027	FLC	EET SL	10/10/24 15:00
Total/NA	Analysis	Ra226_Ra228		1	684094	SCB	EET SL	10/17/24 15:03

Client Sample ID: MW20-GW-0924

Lab Sample ID: 310-291015-9

Date Collected: 09/18/24 10:00

Matrix: Ground Water

Date Received: 09/19/24 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	434581	HE7K	EET CF	09/26/24 14:46
Total/NA	Prep	3005A			433838	F5MW	EET CF	09/23/24 09:30
Total/NA	Analysis	6020B		1	435214	NFT2	EET CF	10/03/24 18:36
Total/NA	Prep	7470A			435005	QTZ5	EET CF	10/04/24 14:05
Total/NA	Analysis	7470A		1	435443	QTZ5	EET CF	10/07/24 11:02
Total/NA	Analysis	SM 2540C		1	434170	MDU9	EET CF	09/24/24 16:03
Total/NA	Analysis	SM 4500 H+ B		1	433664	W9YR	EET CF	09/19/24 16:51
Total/NA	Prep	PrecSep-21			680768	MLT	EET SL	09/24/24 08:30
Total/NA	Analysis	9315		1	683772	FLC	EET SL	10/16/24 23:19
Total/NA	Prep	PrecSep_0			680769	MLT	EET SL	09/24/24 08:33
Total/NA	Analysis	9320		1	683027	FLC	EET SL	10/10/24 15:00
Total/NA	Analysis	Ra226_Ra228		1	684094	SCB	EET SL	10/17/24 15:03

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Ground Water	Lithium

Laboratory: Eurofins St. Louis

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	373	12-01-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9315	PrecSep-21	Ground Water	Radium-226
9320	PrecSep_0	Ground Water	Radium-228
Ra226_Ra228		Ground Water	Combined Radium 226 + 228



Method Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET 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:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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



Environment Testing
America



310-291015 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHP</u>			
City/State:	CITY: <u>Des Moines</u>	STATE: <u>IA</u>	Project:
Receipt Information			
Date/Time Received:	DATE: <u>9/19/24</u>	TIME: <u>1606</u>	Received By: <u>PH</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>3</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID: <u>Y</u>	Correction Factor (°C): <u>0</u>		
• Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>2.4</u>	Corrected Temp (°C): <u>2.4</u>		
• Sample Container Temperature			
Container(s) used	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login.			
Additional Comments			





Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client <u>GHD</u>			
City/State	CITY <u>Des Moines</u>	STATE <u>IA</u>	Project
Receipt Information			
Date/Time Received	DATE <u>9/19/24</u>	TIME <u>1605</u>	Received By <u>PH</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID
Multiple Coolers?		<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>3</u>
Cooler Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID <u>Y</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>2.9 3.7</u>		Corrected Temp (°C): <u>2.9 3.7</u>	
• Sample Container Temperature			
Container(s) used	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C)			
Corrected Temp (°C)			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login.			
Additional Comments			



Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client <u>GHD</u>			
City/State:	CITY <u>Des Moines</u>	STATE <u>IA</u>	Project
Receipt Information			
Date/Time Received	DATE <u>9/19/24</u>	TIME <u>1605</u>	Received By. <u>PH</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID.	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # <u>3</u> of <u>3</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID <u>y</u>	Correction Factor (°C): <u>0</u>		
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>2.9</u>	Corrected Temp (°C): <u>2.9</u>		
• Sample Container Temperature			
Container(s) used	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			



Chain of Custody Record

Client Information
 Company: GHD Services Inc.
 Address: 11228 Aurora Avenue
 City: Des Moines
 State: IA, Zip: 50322-7905
 Phone: 515-414-3935(Tel)
 Email: Kevin.Armstrong@ghd.com
 Project Name: MEC Neal South - Semiannual CCR
 Site: Neal South CCR Monofill

Sampler: *Paula Richards (IAD)*
 Lab PM: Zach Bindert
 Phone: 712-808-9121
 E-Mail: zach.bindert@euofins.com

Carrier Tracking No(s):
 State of Origin: Iowa

Analysis Requested

Sample ID	Sample Date	Sample Time	Sample Type (G=grab)	Matrix (W=water, S=solid, O=waste/oil, ST=trace, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested										Special Instructions/Note
							9316_Ra228 - Standard Target List	9320_Ra228 - Standard Target List	9056A_ORGFM_28D - (MOD) Chloride, Fluoride, Sulfate	6020B_7470A - CCR Metals list	TDS 2640C_Calcd, SM4500_H+	Total Number of containers					
MW02-GW-0924	9/18/24	0935	G	Water	N	N	D	N	D	N	X	X	X	X	X		
MW04-GW-0924	9/18/24	1210	G	Water	N	N	X	X	X	X	X	X	X	X	X		
MW08-GW-0924			G	Water	N	N	X	X	X	X	X	X	X	X	X		
MW10-GW-0924			G	Water	N	N	X	X	X	X	X	X	X	X	X		
MW11-GW-0924			G	Water	N	N	X	X	X	X	X	X	X	X	X		
MW12-GW-0924			G	Water	N	N	X	X	X	X	X	X	X	X	X		
MW13-GW-0924			G	Water	N	N	X	X	X	X	X	X	X	X	X		
MW14-GW-0924			G	Water	N	N	X	X	X	X	X	X	X	X	X		
MW15-GW-0924	9/18/24	0900	G	Water	N	N	X	X	X	X	X	X	X	X	X		
MW16-GW-0924	9/18/24	0820	G	Water	N	N	X	X	X	X	X	X	X	X	X		
MW17-GW-0924	9/18/24	1055	G	Water	N	N	X	X	X	X	X	X	X	X	X		

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 - Na2OAS, Q - Na2SO3, R - Na2SO4, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4.5, Y - Trizma, Z - other (specify)

Special Instructions/Note:

Due Date Requested:
 TAT Requested (days): Standard
 Compliance Project: Yes No
 PO #: 340017051
 WO #: 31017262
 Project #: 12576485-003 01
 SSOW#: 12576485-02

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months
 Special Instructions/QC Requirements: All Appendix III and Appendix IV constituents.
 Database Facility Code: 11114654-GD-MidAmer

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

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

Empty Kit Reinquished by: Date: _____

Relinquished by: Paula Richards
 Date/Time: 9/19/24 1100
 Company: GHD

Received by: _____
 Date/Time: 9/19/24 1605
 Company: _____

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



Chain of Custody Record

Client Information Client Contact: Kevin Armstrong Company: GHD Services Inc. Address: 11228 Aurora Avenue City: Des Moines State, Zip: IA, 50322-7905 Phone: 515-414-3935(Tel) Email: Kevin.Armstrong@ghd.com Project Name: MEC Neal South - Semiannual CCR Site: Neal South CCR Monofill		Lab P.M.: Zach Bindert E-Mail: zach_bindert@eurofins.com Carrier Tracking No(s): State of Origin: Iowa Page: Page 2 of 2 Job #:	
Due Date Requested: TAT Requested (days): Standard Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No PO #: 340017051 WO #: 31017262 Project #: 12576485-003.01 SSO#: 12576485-02		Analysis Requested Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> 9316_Ra226 - Standard Target List <input checked="" type="checkbox"/> 9320_Ra228 - Standard Target List <input checked="" type="checkbox"/> 9058A_ORGM_28D - (MOD) Chloride, Fluoride, Sulfate <input checked="" type="checkbox"/> 6020B_7470A - CCR Metals list <input checked="" type="checkbox"/> TDS 2840C_Calcd, SM4500_H+ <input checked="" type="checkbox"/> Total Number of Containers: 5	
Sample Identification MW18-GW-0924 MW19-GW-0924 MW20-GW-0924 MW21-GW-0924 DP01-GW-0924		Matrix (W=water, S=solid, O=wastewater) Sample Type (C=comp, G=grab) Sample Time Sample Date Preservation Code: Special Instructions/Note: PR	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements: All Appendix III and Appendix IV constituents. Database Facility Code 11114654-GD-MidAmer	
Relinquished by: Kevin Armstrong Date/Time: 9/19/24 1100 Relinquished by: Zach Bindert Date/Time: _____ Relinquished by: _____ Date/Time: _____		Empty Kit Relinquished by: _____ Date: _____ Received by: _____ Date/Time: _____ Received by: _____ Date/Time: _____ Received by: _____ Date/Time: _____	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No: _____		Cooler Temperature(s) °C and Other Remarks:	



Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-291015-1

Login Number: 291015

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Hirsch, Preston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	

Tracer/Carrier Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Ground Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)
310-291015-1	MW15-GW-0924	85.4
310-291015-2	DP01-GW-0924	86.1
310-291015-3	MW02-GW-0924	79.7
310-291015-4	MW04-GW-0924	89.1
310-291015-5	MW16-GW-0924	88.1
310-291015-5 MS	MW16-GW-0924	91.6
310-291015-5 MSD	MW16-GW-0924	85.9
310-291015-6	MW17-GW-0924	90.8
310-291015-7	MW18-GW-0924	92.8
310-291015-8	MW19-GW-0924	93.8
310-291015-9	MW20-GW-0924	98.3

Tracer/Carrier Legend

Ba = Barium

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)
LCS 160-680768/2-A	Lab Control Sample	78.9
MB 160-680768/1-A	Method Blank	94.8

Tracer/Carrier Legend

Ba = Barium

Method: 9320 - Radium-228 (GFPC)

Matrix: Ground Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
310-291015-1	MW15-GW-0924	85.4	77.4
310-291015-2	DP01-GW-0924	86.1	78.1
310-291015-3	MW02-GW-0924	79.7	76.3
310-291015-4	MW04-GW-0924	89.1	77.0
310-291015-5	MW16-GW-0924	88.1	78.9
310-291015-5 MS	MW16-GW-0924	91.6	78.5
310-291015-5 MSD	MW16-GW-0924	85.9	78.5
310-291015-6	MW17-GW-0924	90.8	78.1
310-291015-7	MW18-GW-0924	92.8	81.9
310-291015-8	MW19-GW-0924	93.8	75.1
310-291015-9	MW20-GW-0924	98.3	81.5

Tracer/Carrier Legend

Ba = Barium

Y = Y Carrier

Tracer/Carrier Summary

Client: GHD Services Inc.
Project/Site: MEC Neal South - Semiannual CCR

Job ID: 310-291015-1

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
LCS 160-680769/2-A	Lab Control Sample	78.9	75.5
MB 160-680769/1-A	Method Blank	94.8	80.7

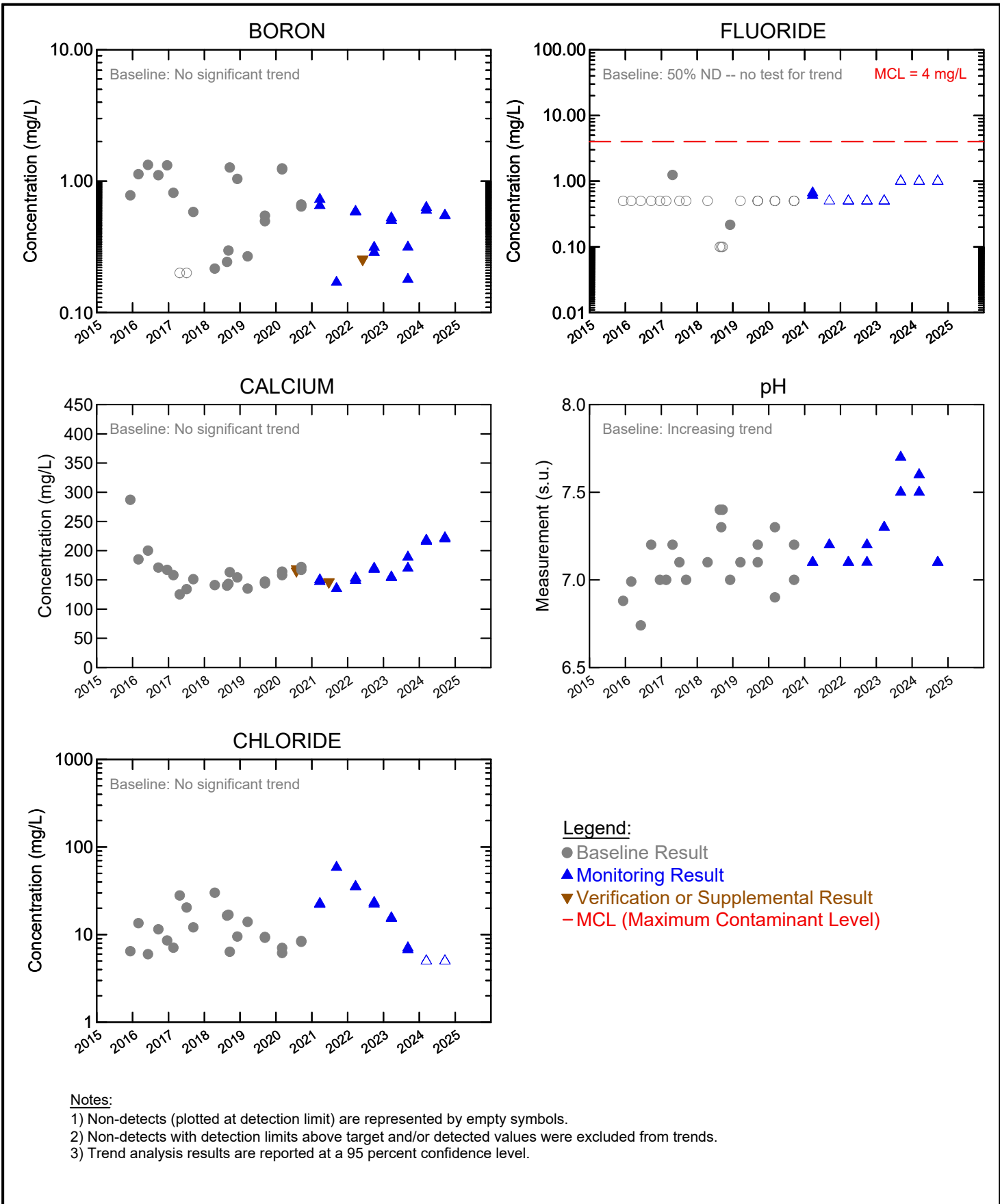
Tracer/Carrier Legend

Ba = Barium
Y = Y Carrier

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Appendix D

**Time Series Graphs for Assessment
Monitoring Wells**

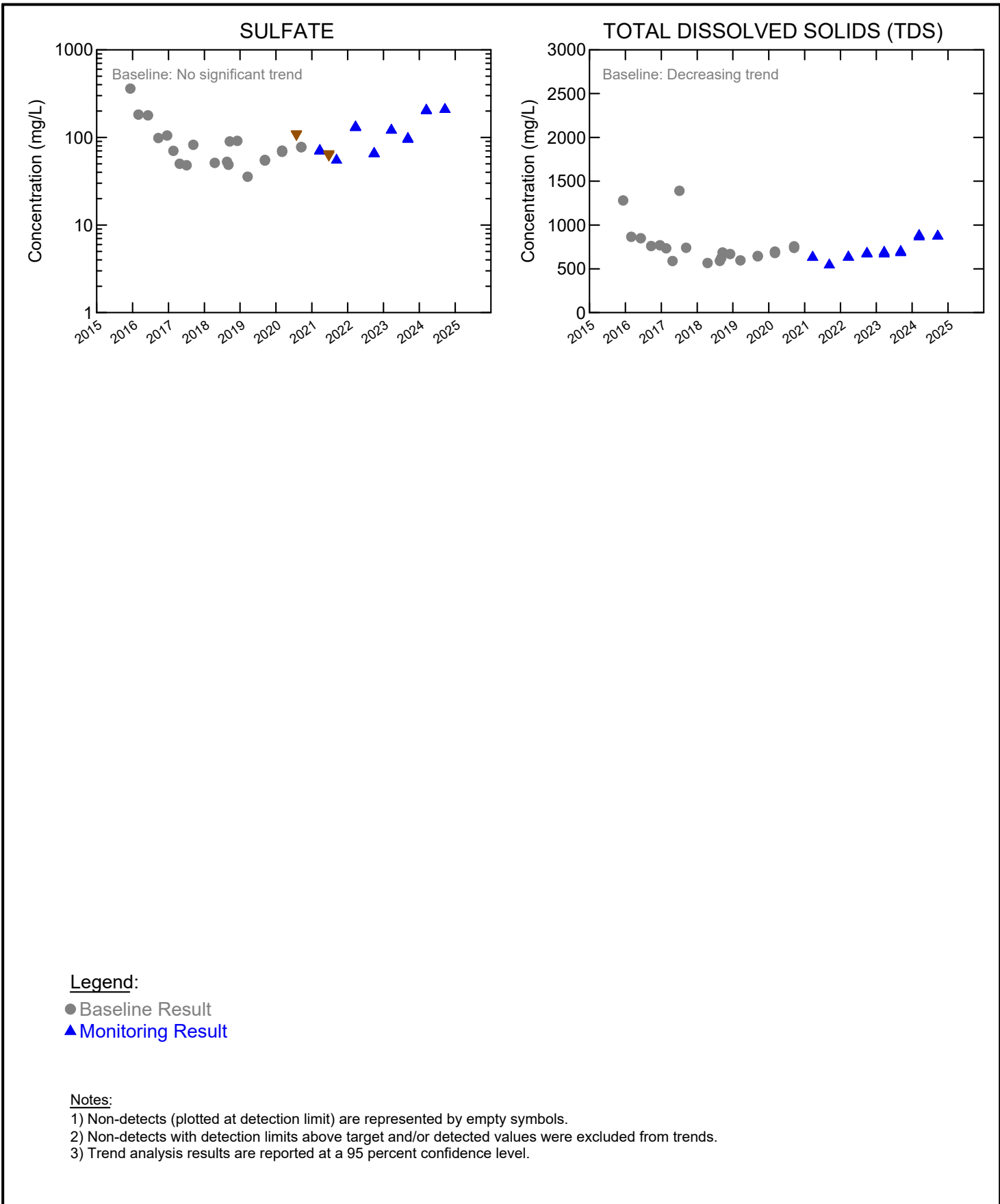


MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Project No. 12576485
 Date: Nov 14, 2024

**MW-2 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 1.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

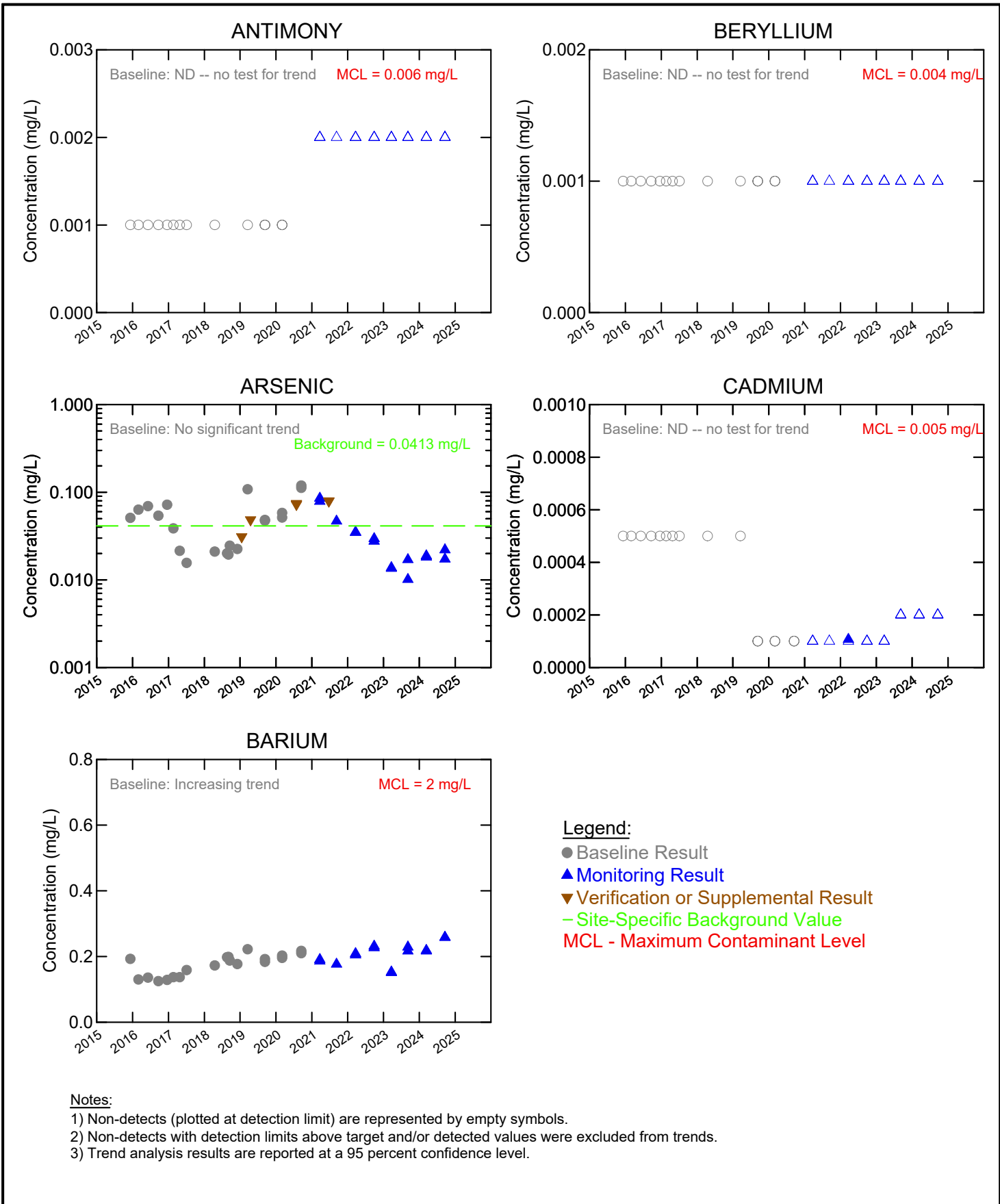


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Salix, Iowa

Project No. 12576485
Date: Nov 13, 2024

**MW-2 -- APPENDIX III PARAMETERS
ANALYTE CONCENTRATION vs. TIME**

FIGURE 1.b



Notes:
 1) Non-detects (plotted at detection limit) are represented by empty symbols.
 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
 3) Trend analysis results are reported at a 95 percent confidence level.

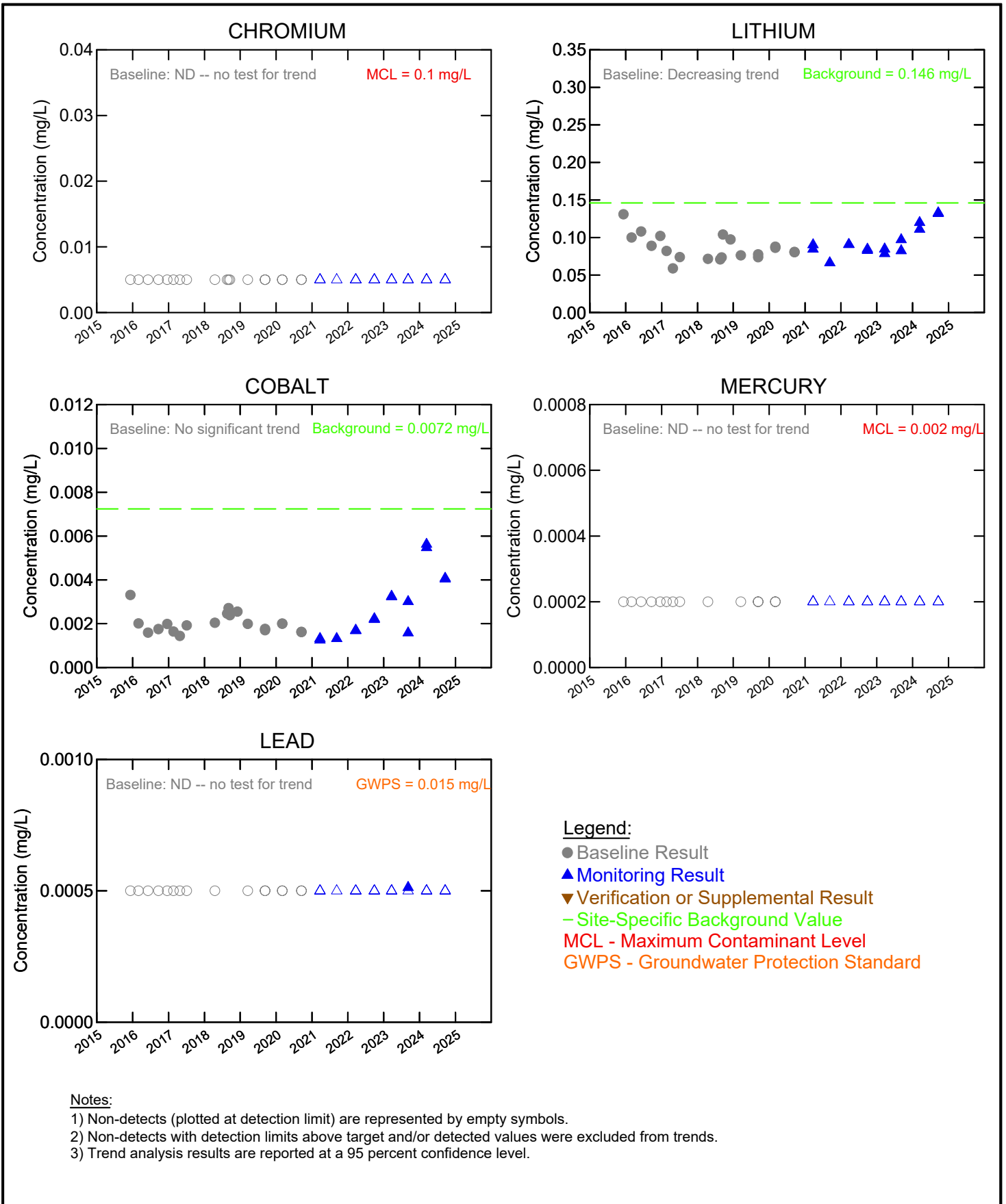


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Project No. 12576485
 Date: Nov 28, 2024

**MW-2 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 1.c



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

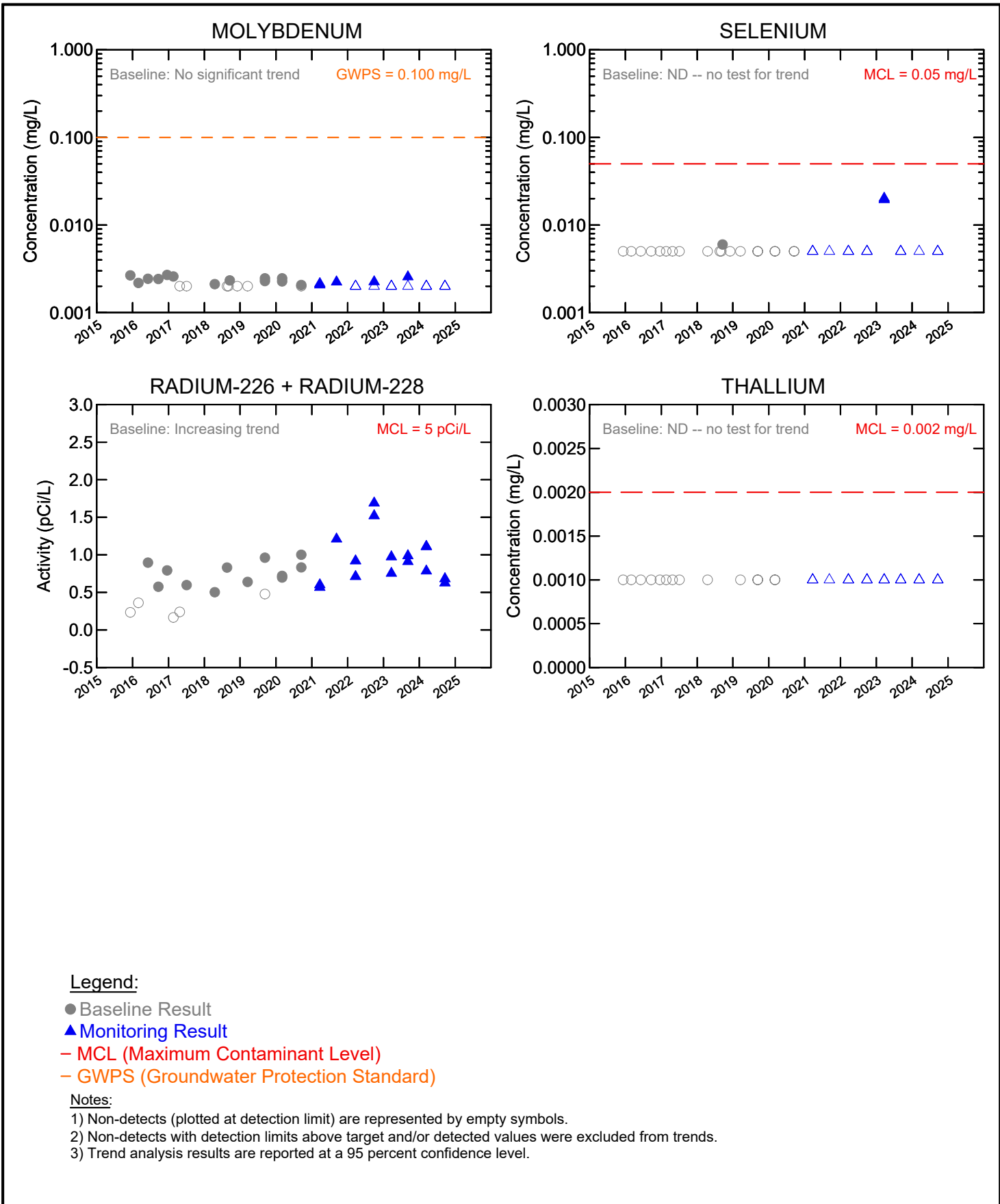


MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Project No. 12576485
 Date: Nov 13, 2024

**MW-2 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 1.d

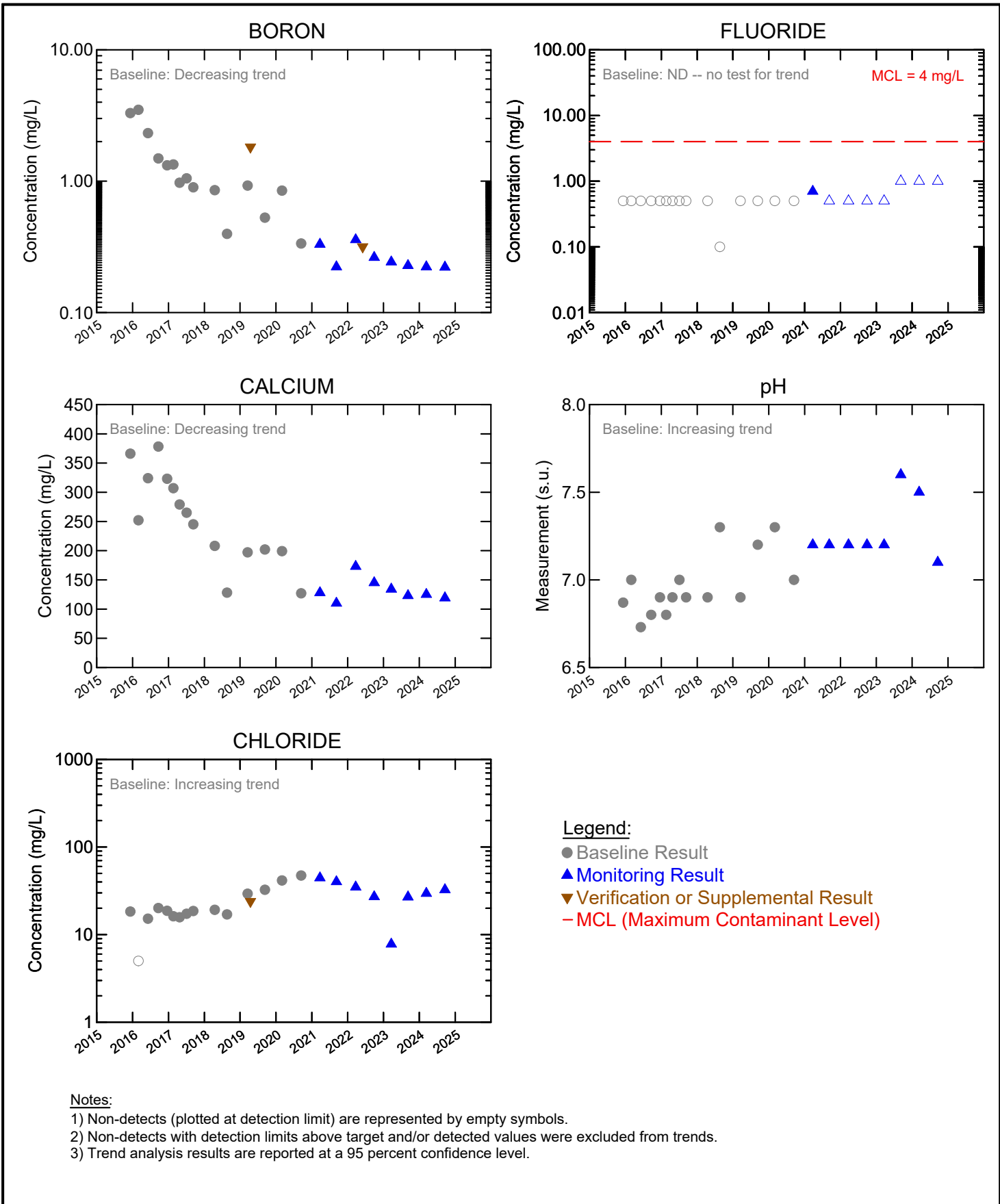


MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Project No. 12576485
 Date: Nov 14, 2024

**MW-2 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 1.e

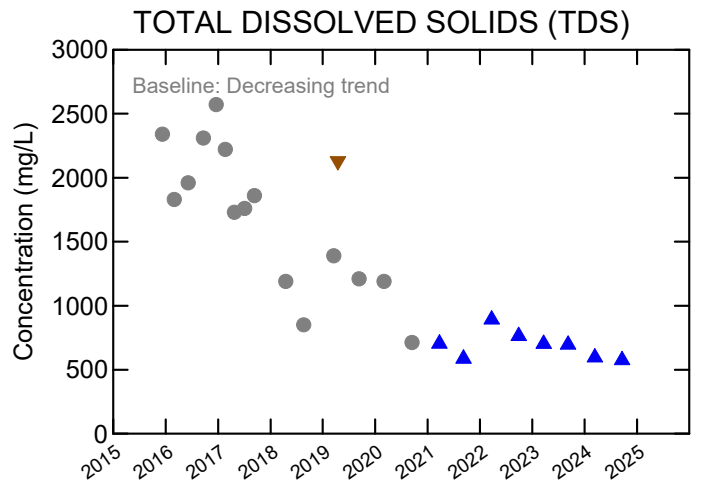
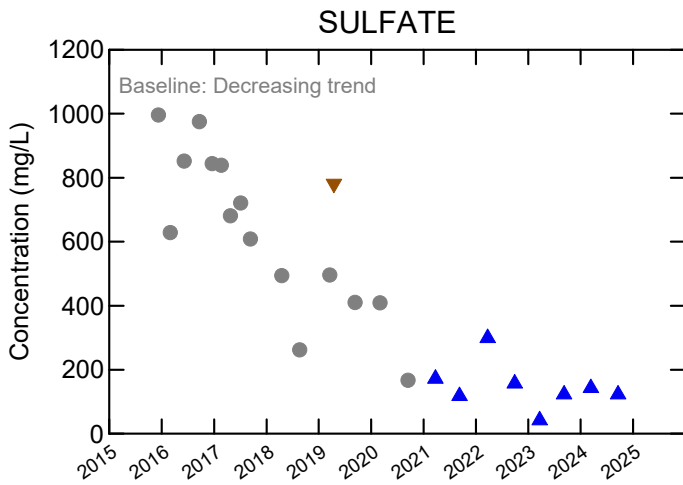


MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Project No. 12576485
 Date: Nov 14, 2024

**MW-4 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 2.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

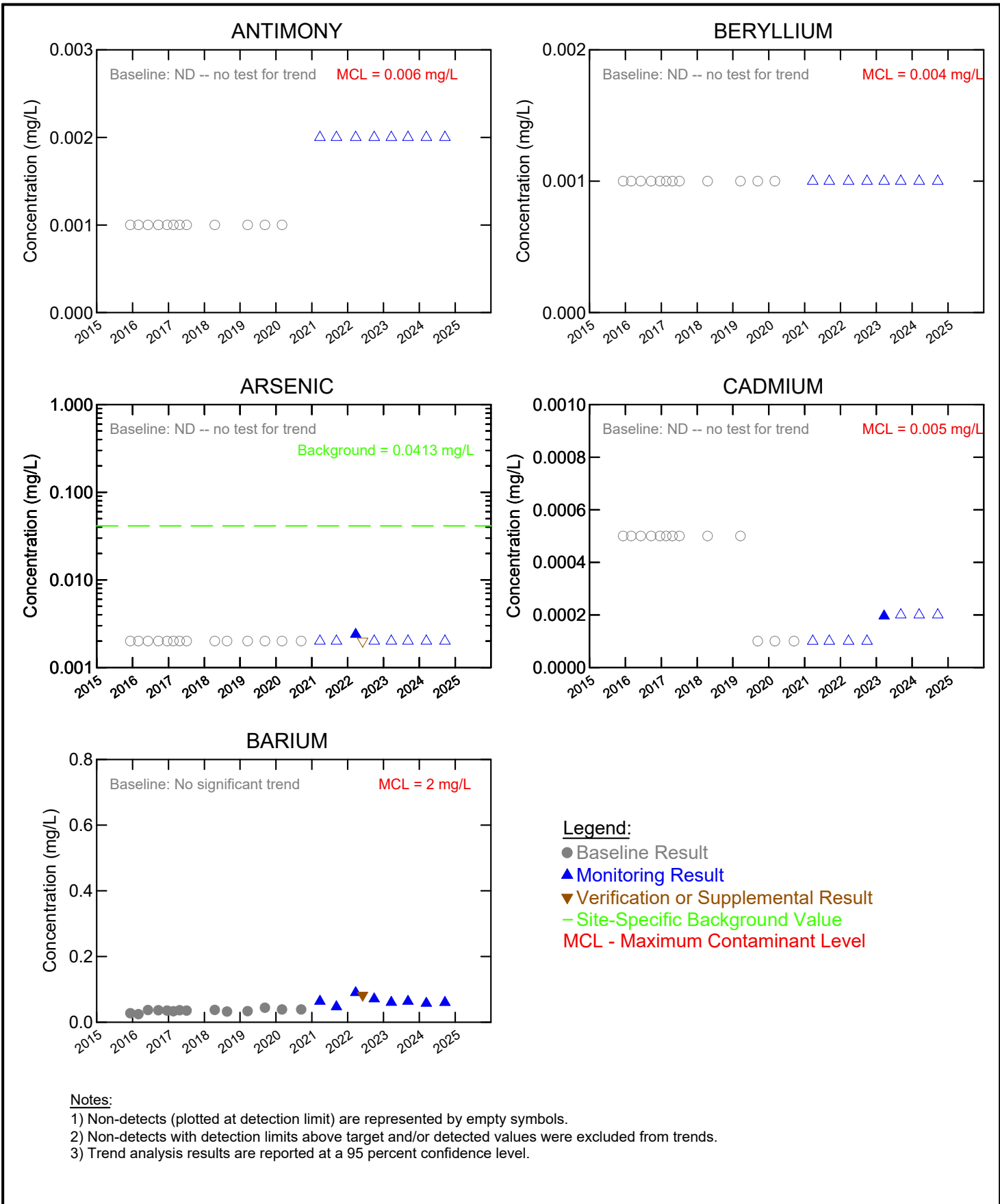


MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

**MW-4 -- APPENDIX III PARAMETERS
ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
Date: Nov 13, 2024

FIGURE 2.b

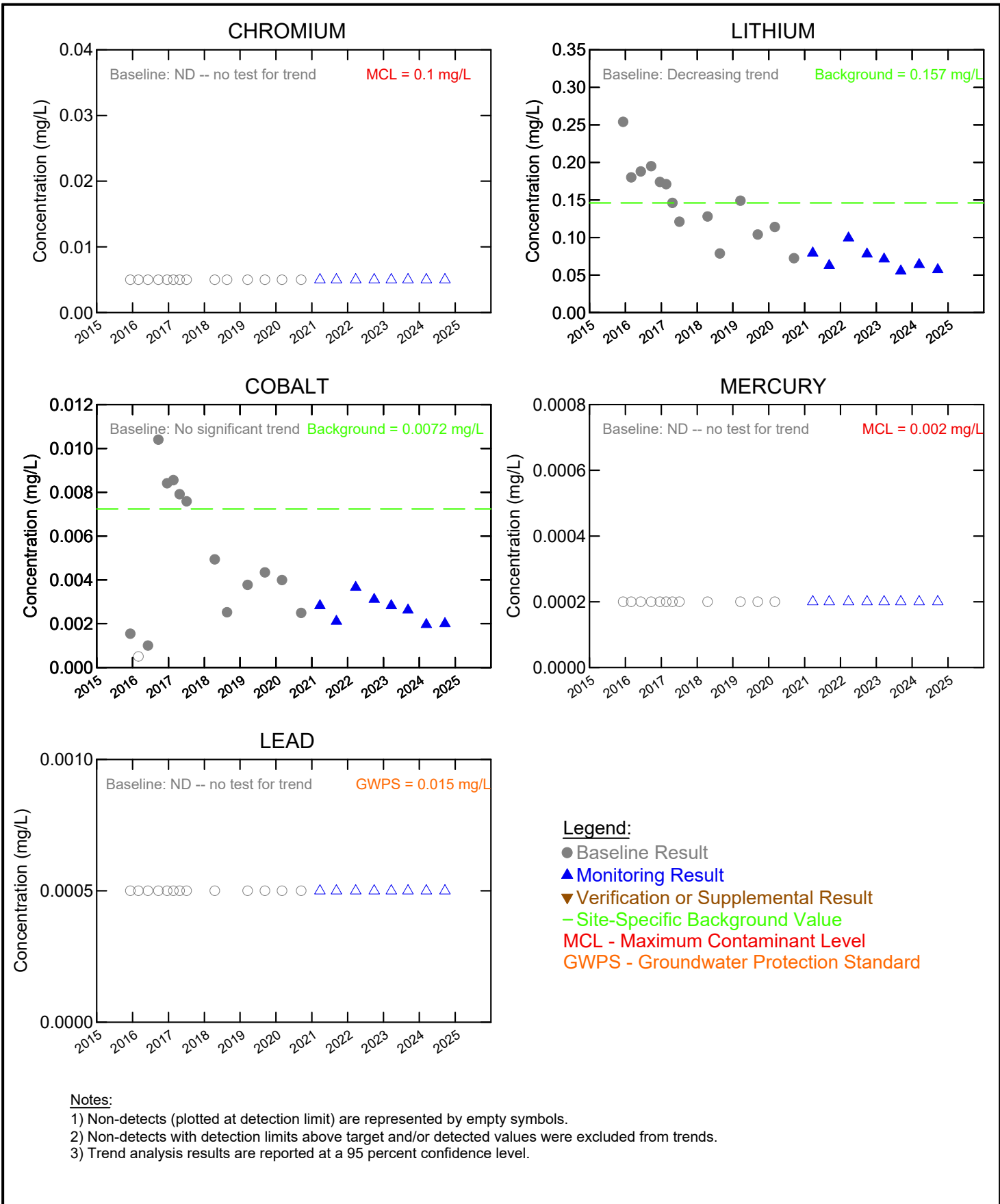


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Project No. 12576485
 Date: Nov 28, 2024

**MW-4 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 2.c



Notes:
 1) Non-detects (plotted at detection limit) are represented by empty symbols.
 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
 3) Trend analysis results are reported at a 95 percent confidence level.

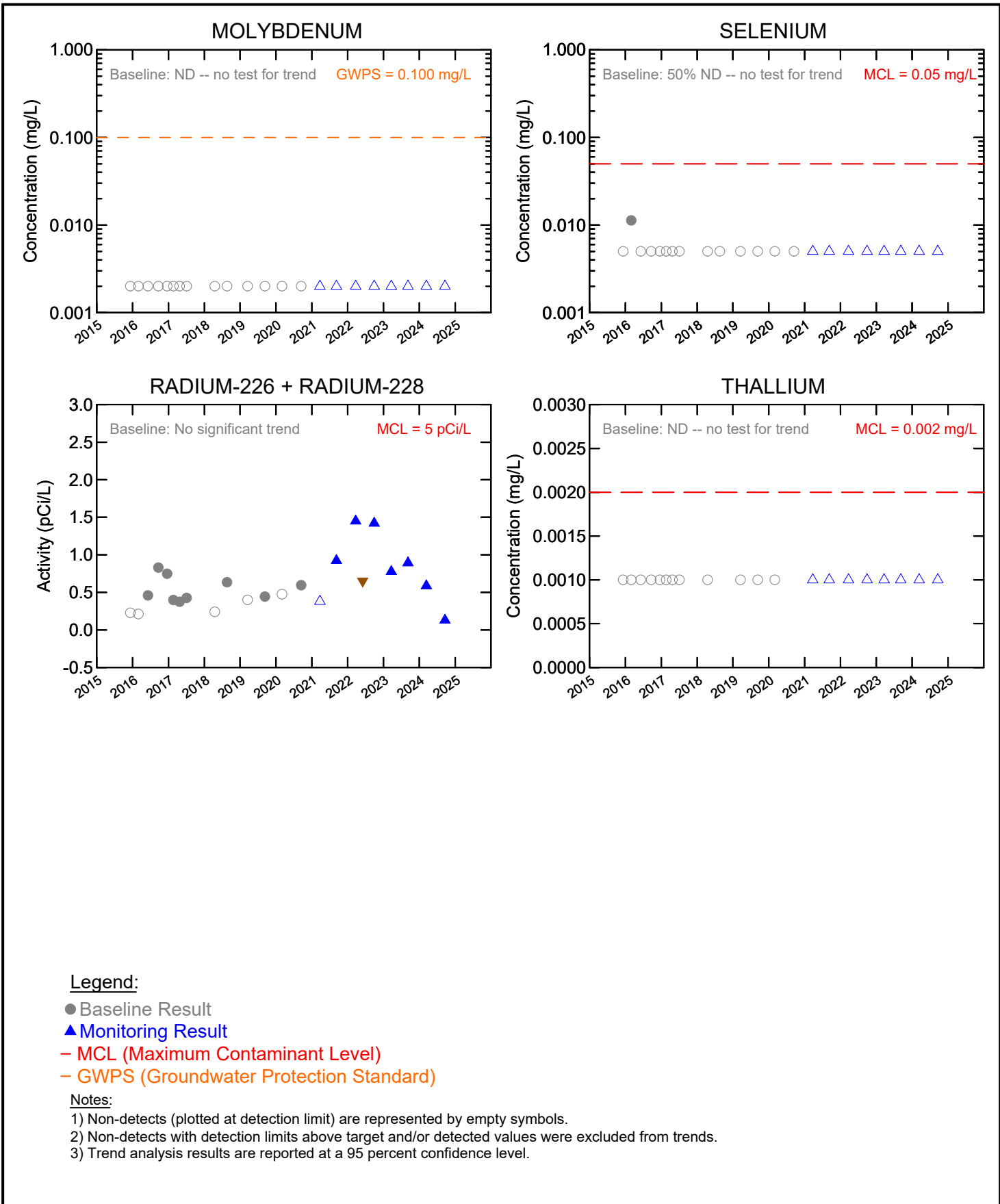


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 Salix, Iowa

Project No. 12576485
 Date: Nov 13, 2024

**MW-4 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 2.d

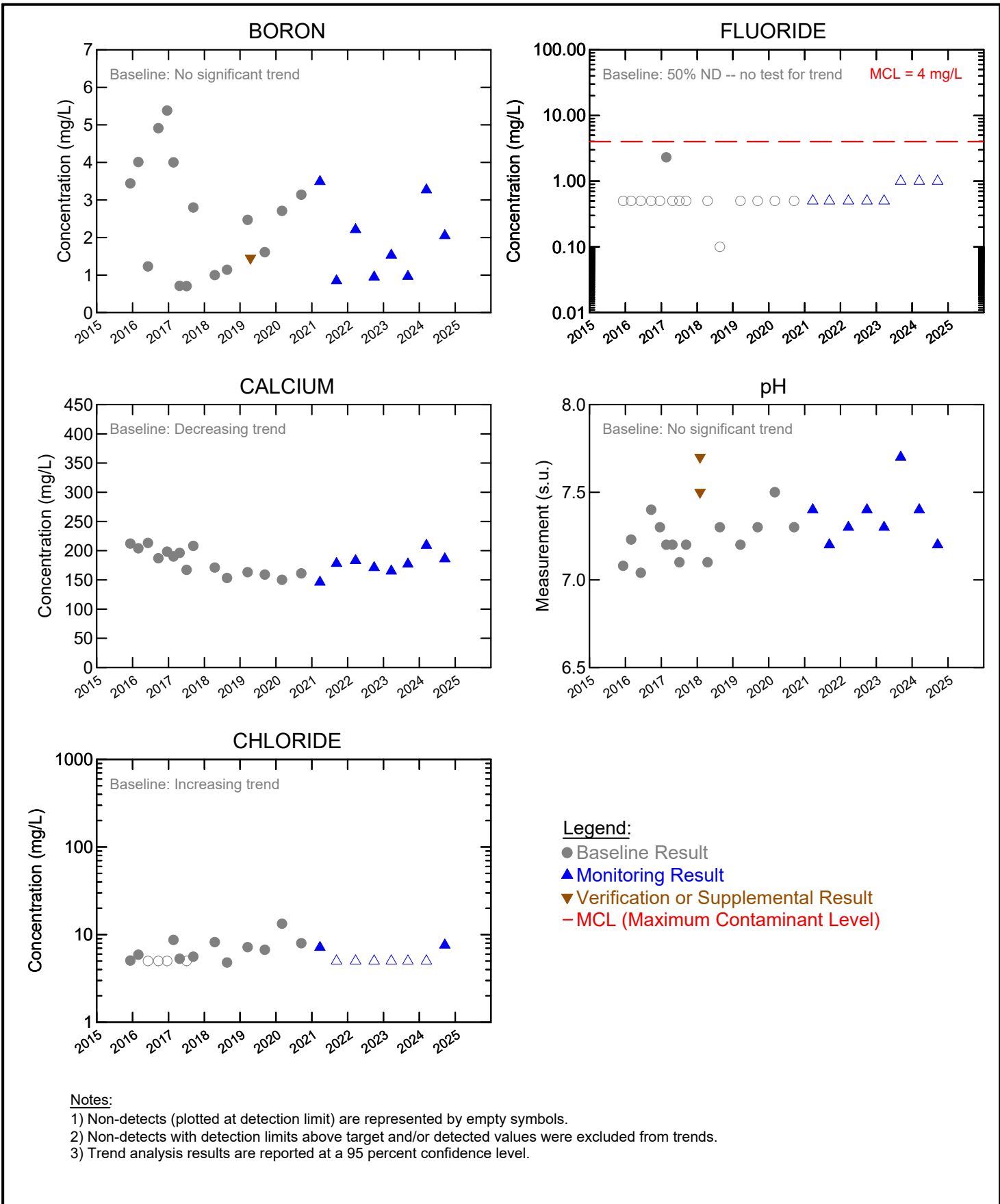


MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Project No. 12576485
 Date: Nov 14, 2024

**MW-4 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 2.e

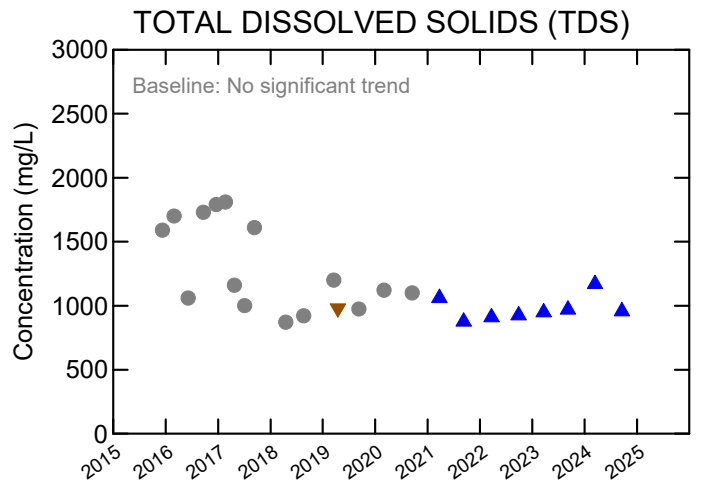
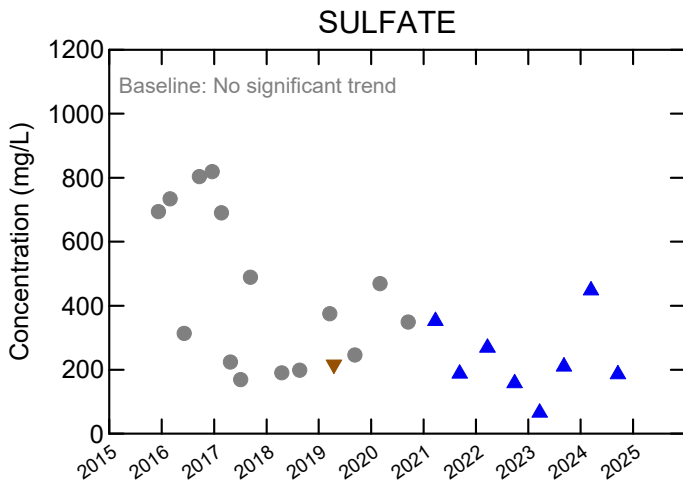


MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Project No. 12576485
 Date: Nov 14, 2024

**MW-8 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 3.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

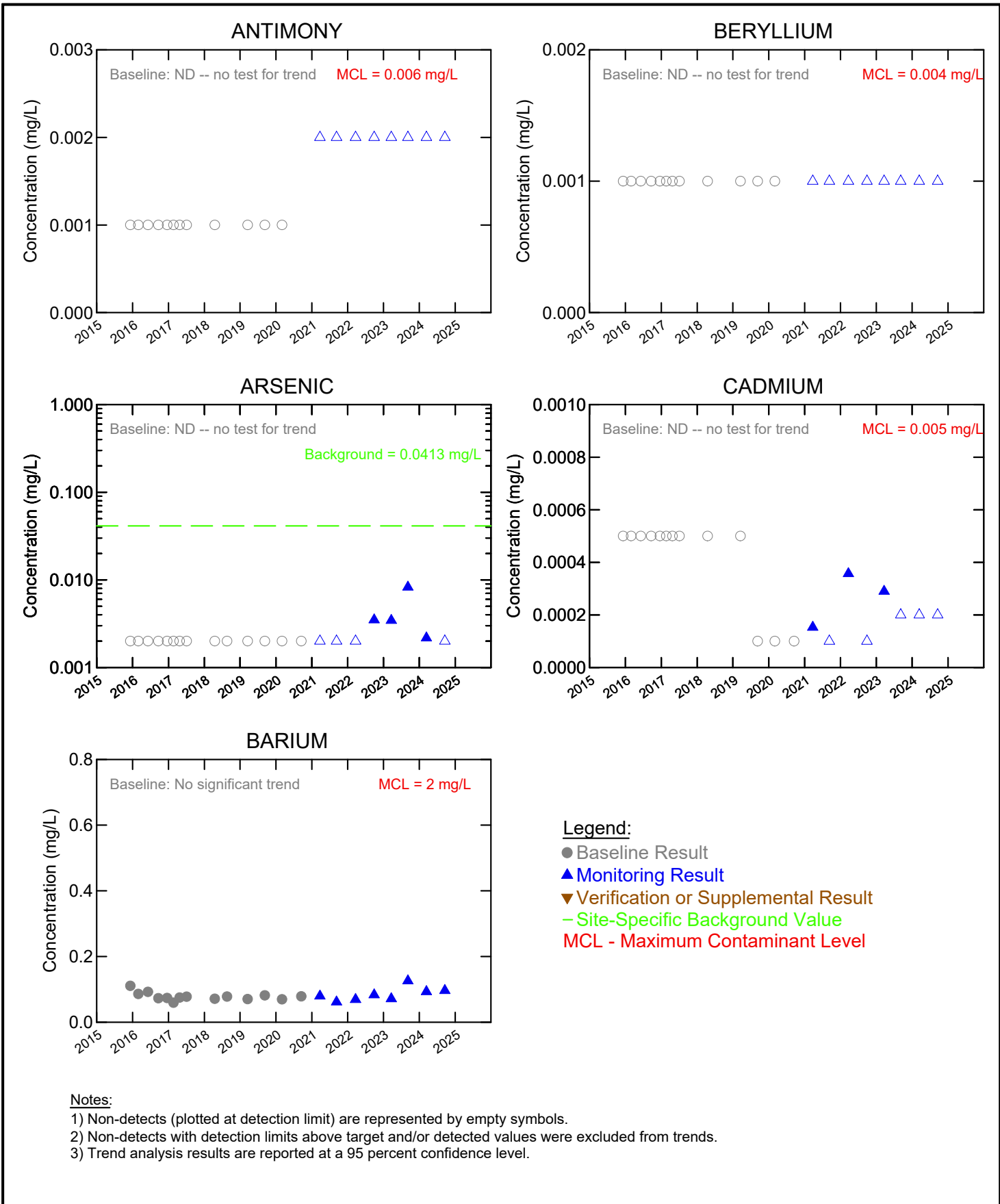


MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

**MW-8 -- APPENDIX III PARAMETERS
ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
Date: Nov 14, 2024

FIGURE 3.b



Notes:
 1) Non-detects (plotted at detection limit) are represented by empty symbols.
 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
 3) Trend analysis results are reported at a 95 percent confidence level.

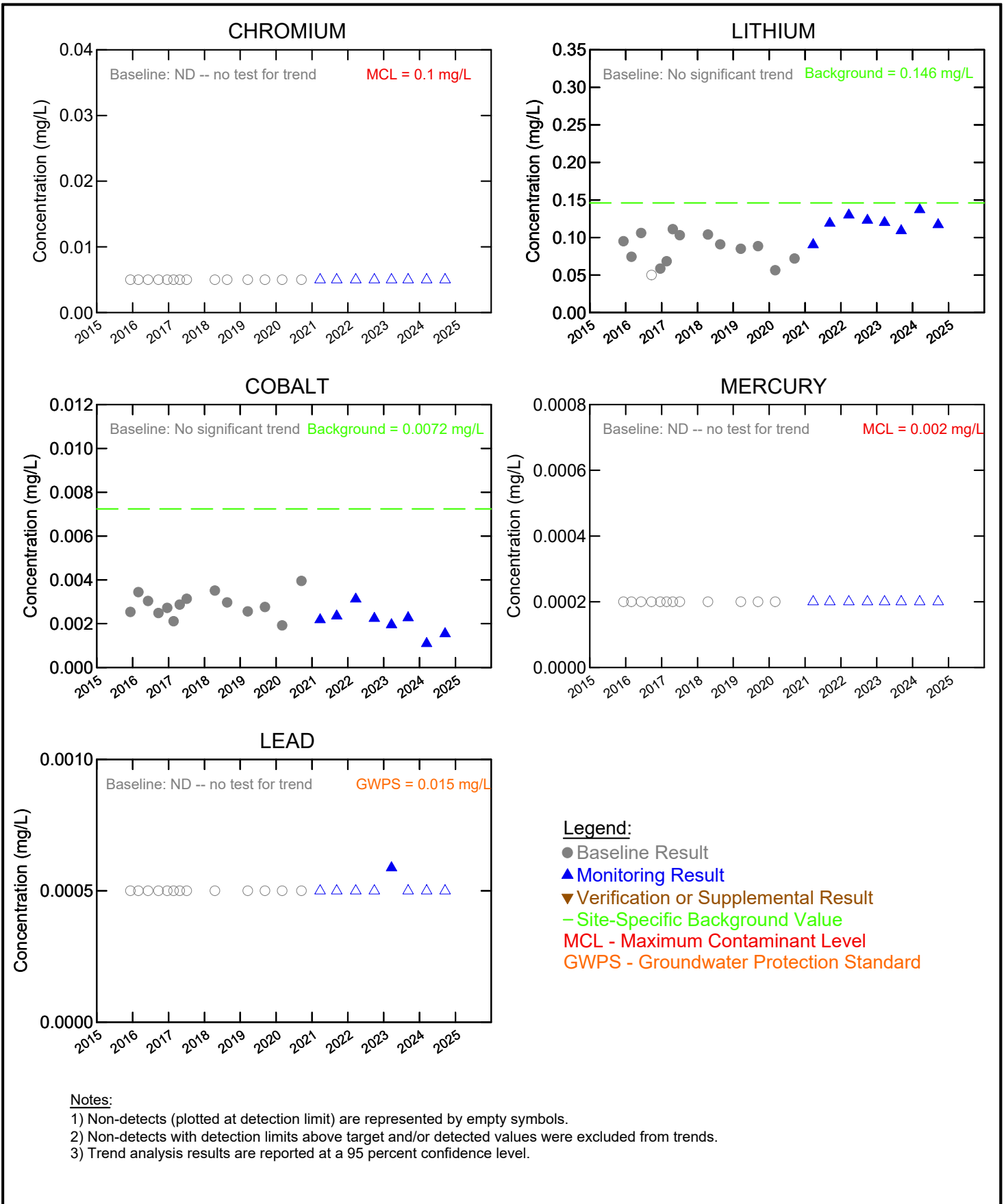


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**MW-8 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 3.c



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

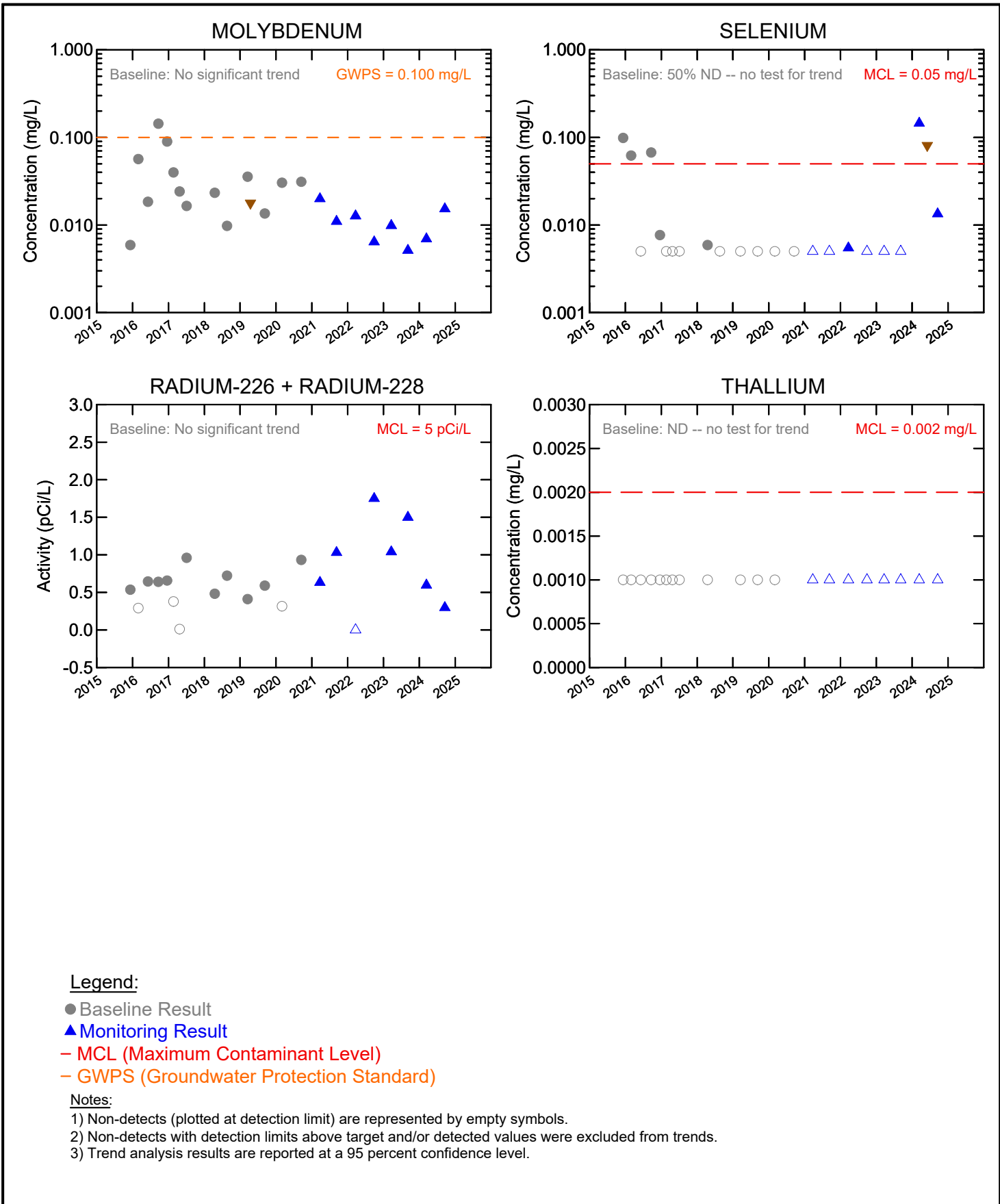


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**MW-8 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 3.d



Legend:

- Baseline Result
- ▲ Monitoring Result
- MCL (Maximum Contaminant Level)
- GWPS (Groundwater Protection Standard)

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

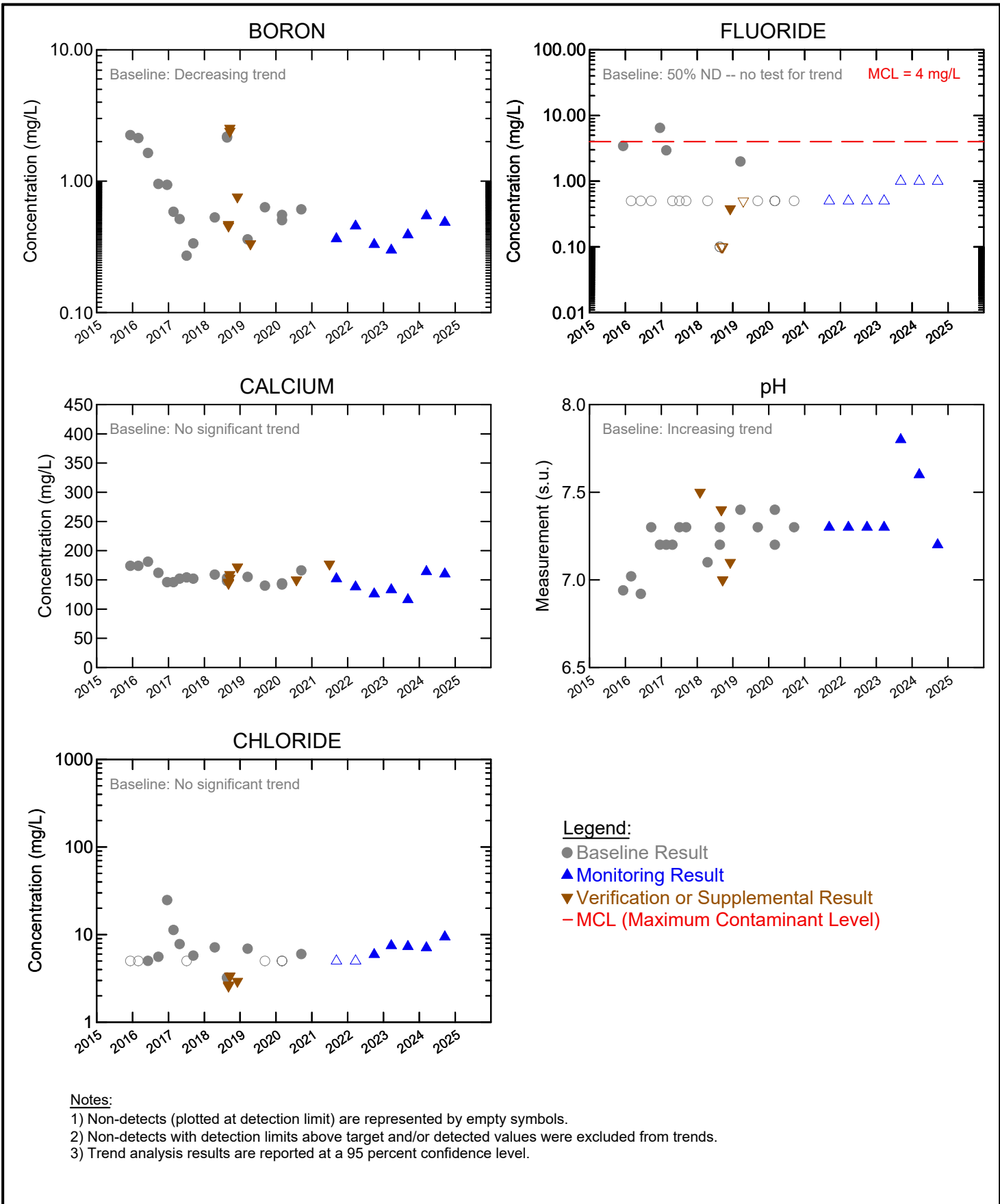


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**MW-8 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 3.e

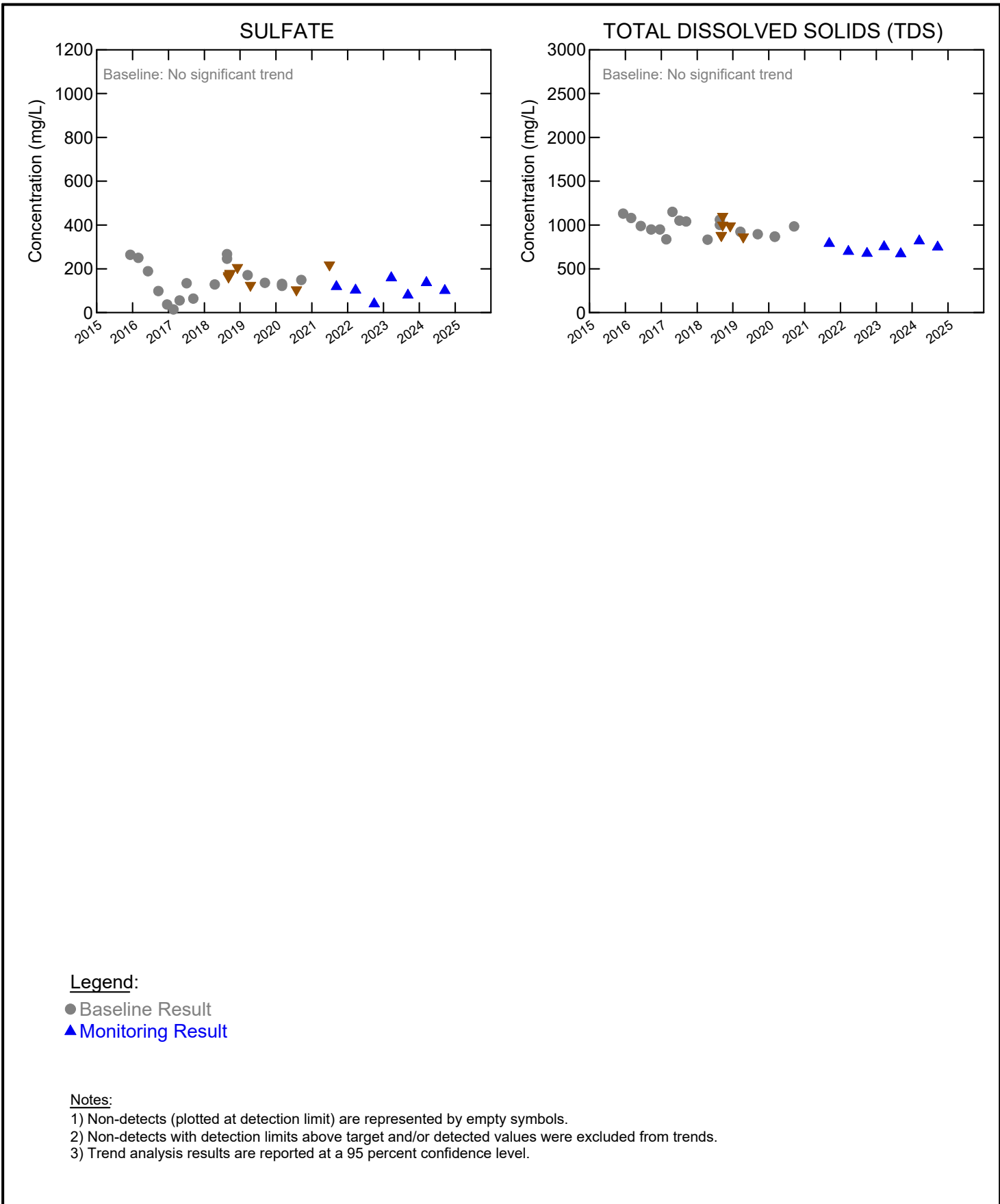


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**MW-10 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 4.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

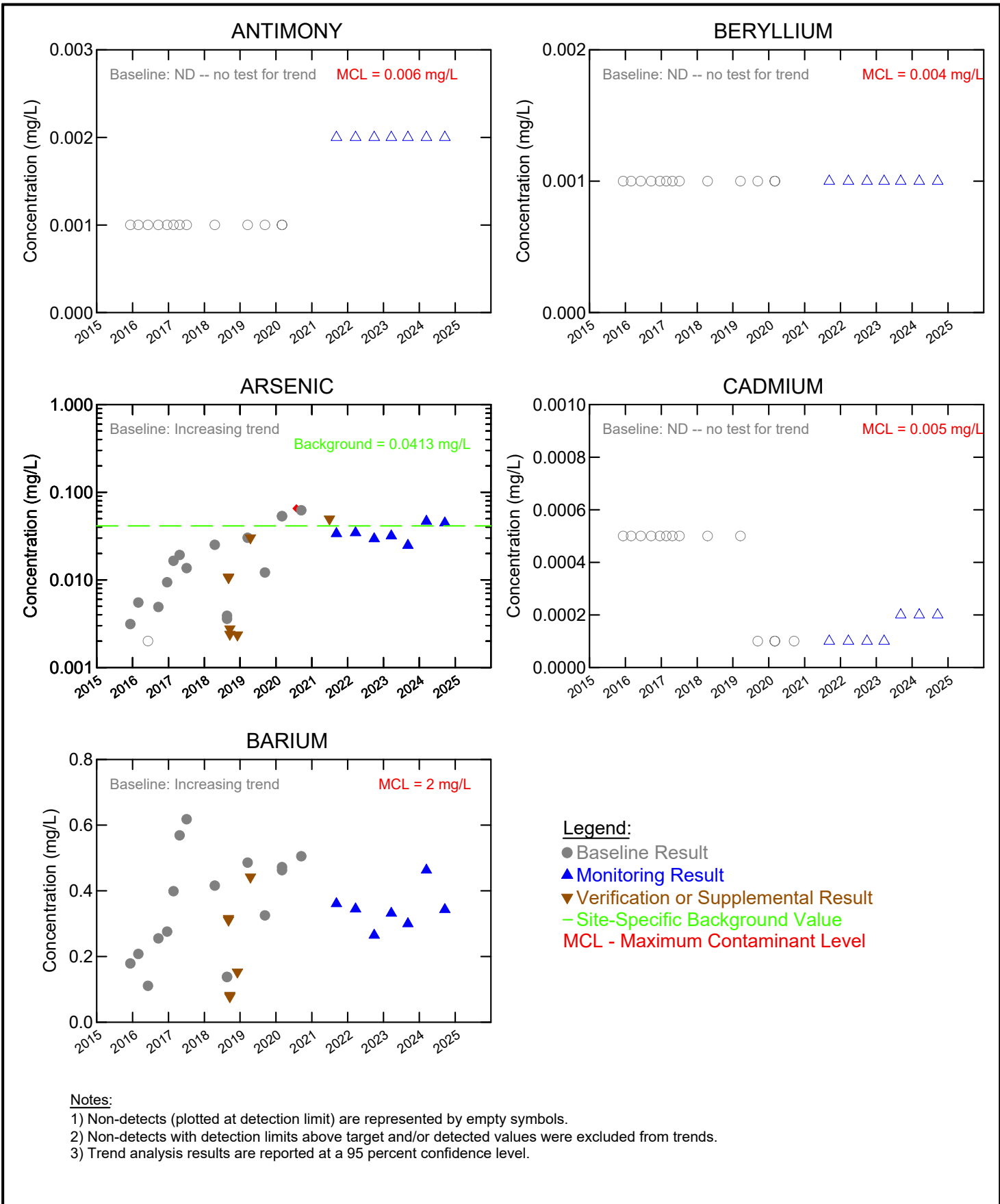


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**MW-10 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 4.b



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

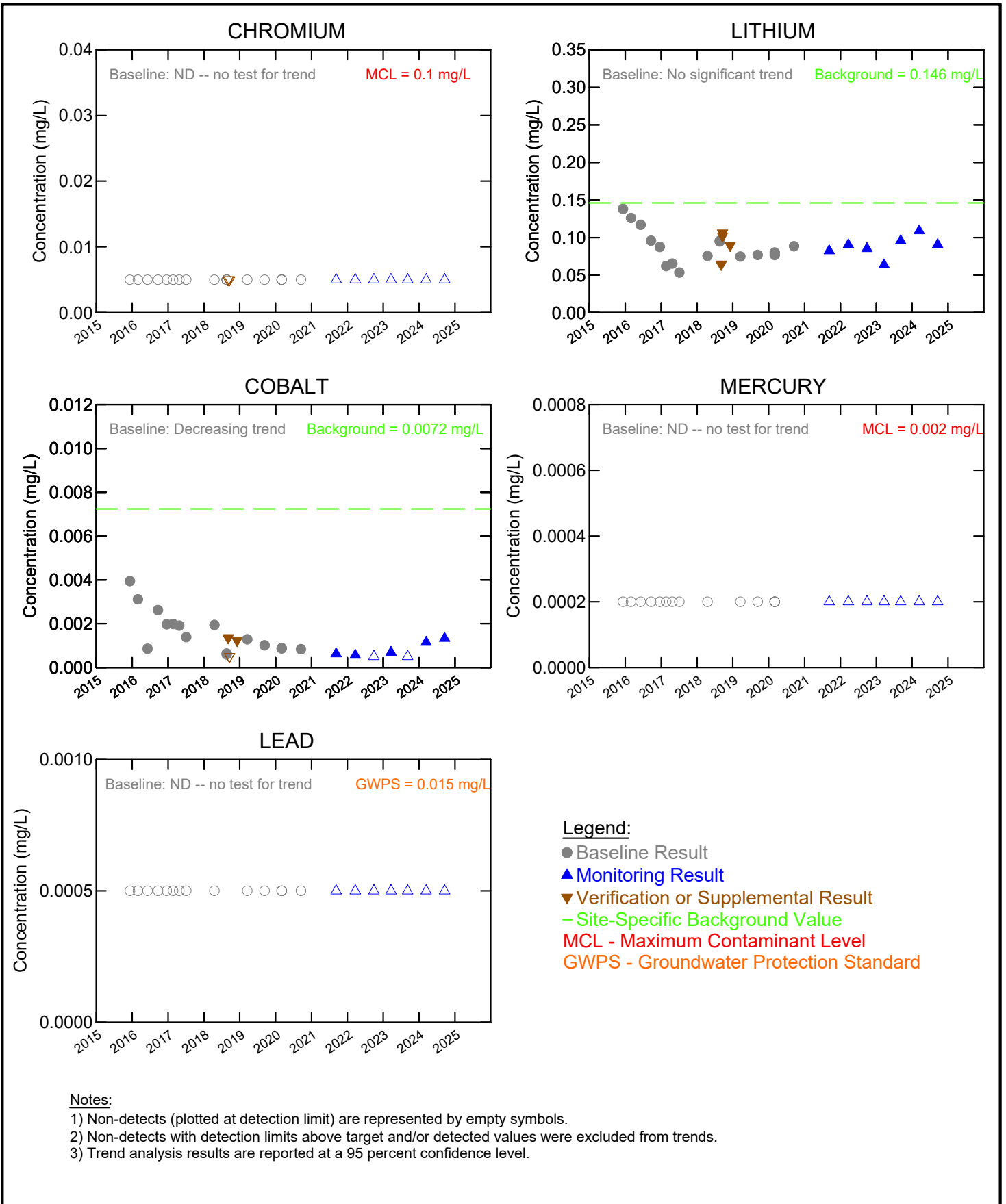


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**MW-10 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 4.c



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

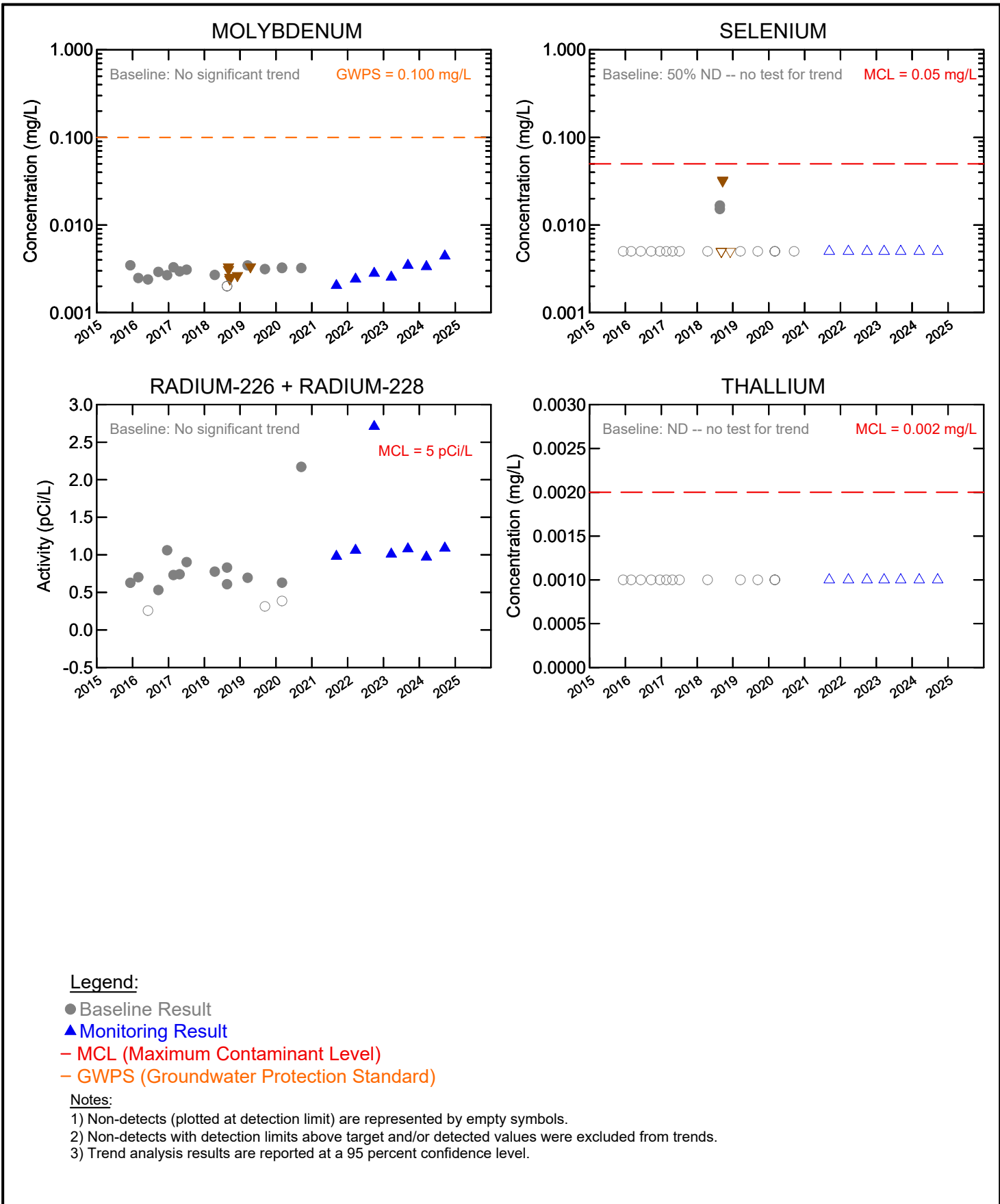


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**MW-10 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 4.d

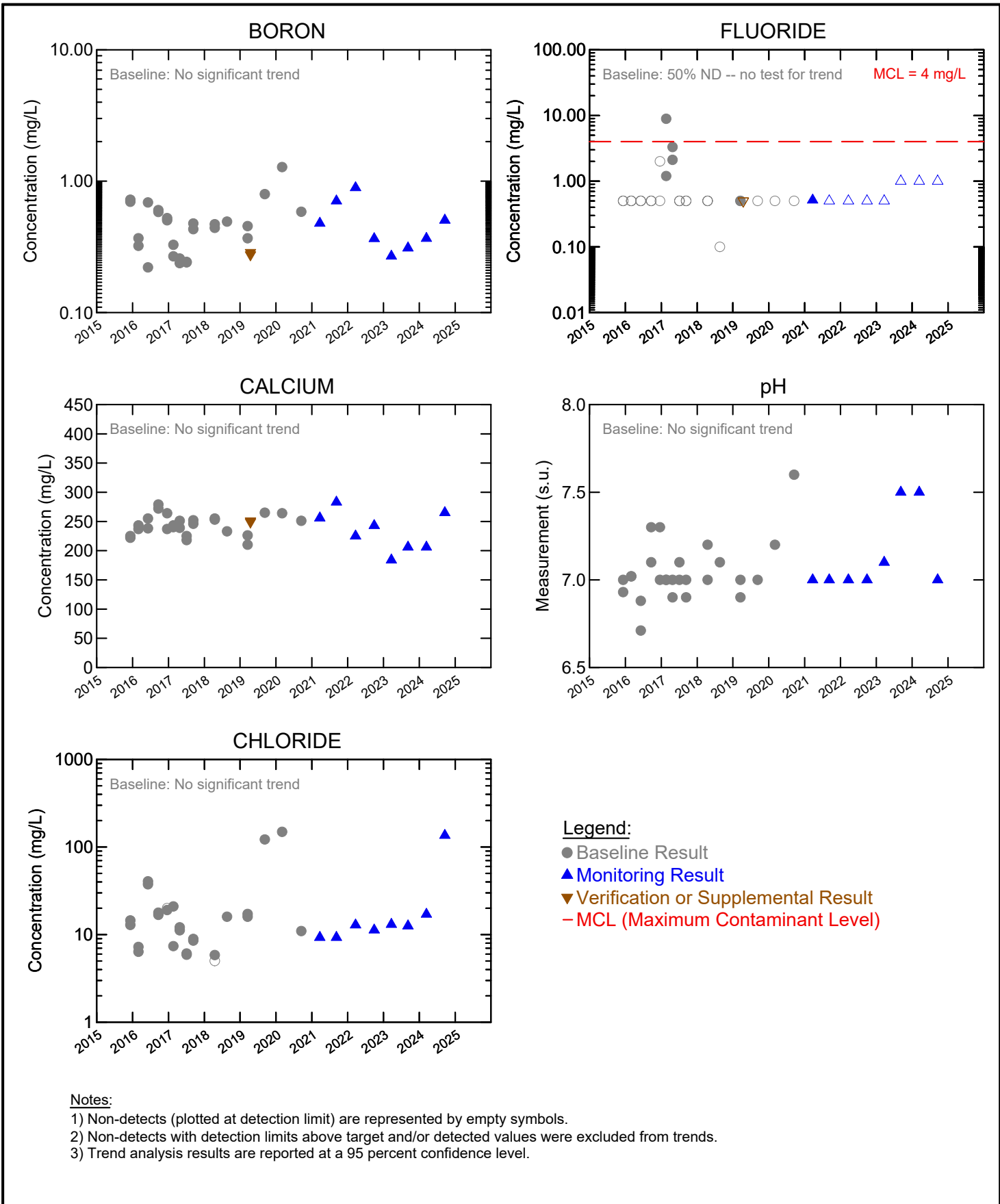


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**MW-10 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 4.e



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

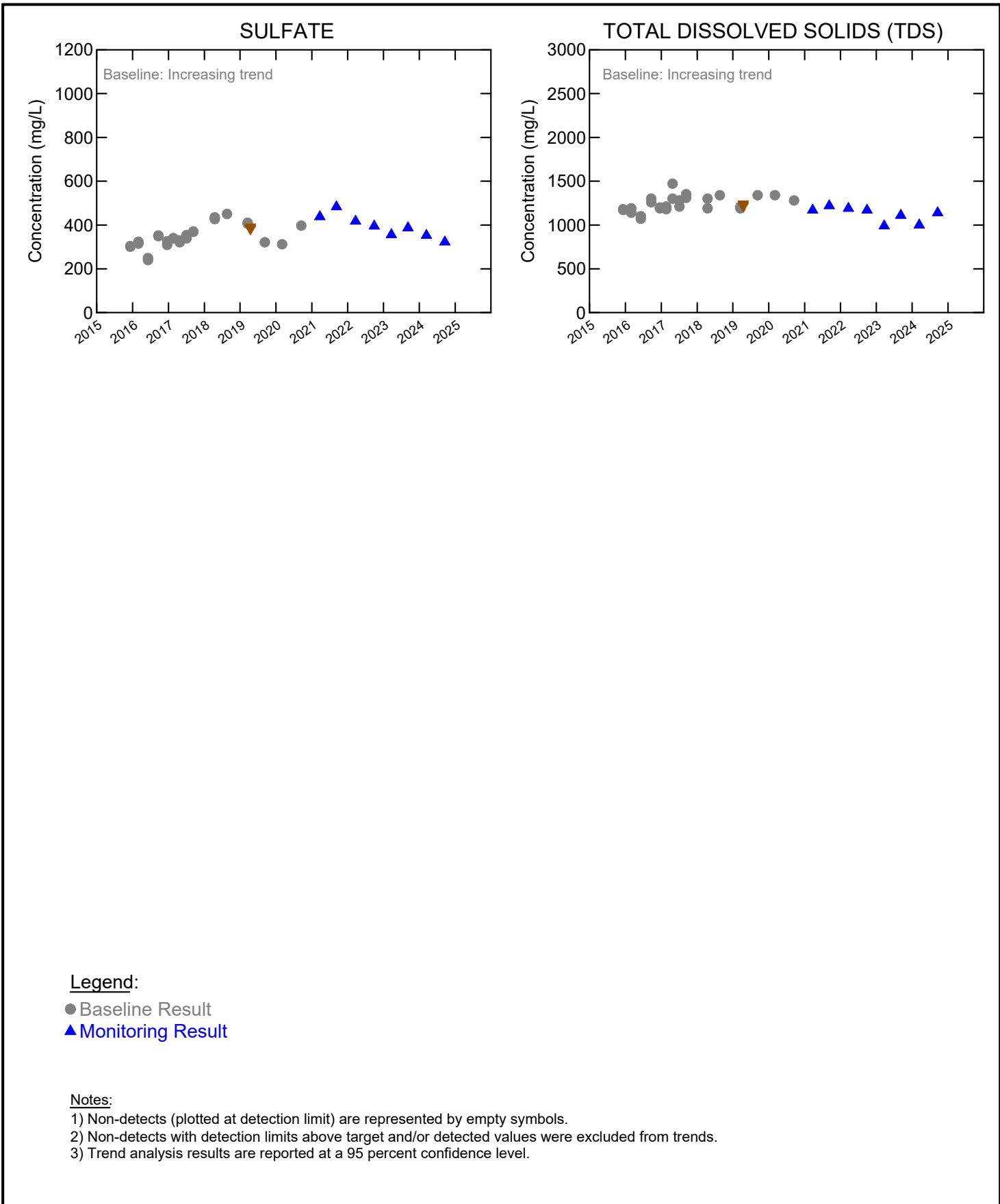


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**MW-11 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
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FIGURE 5.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

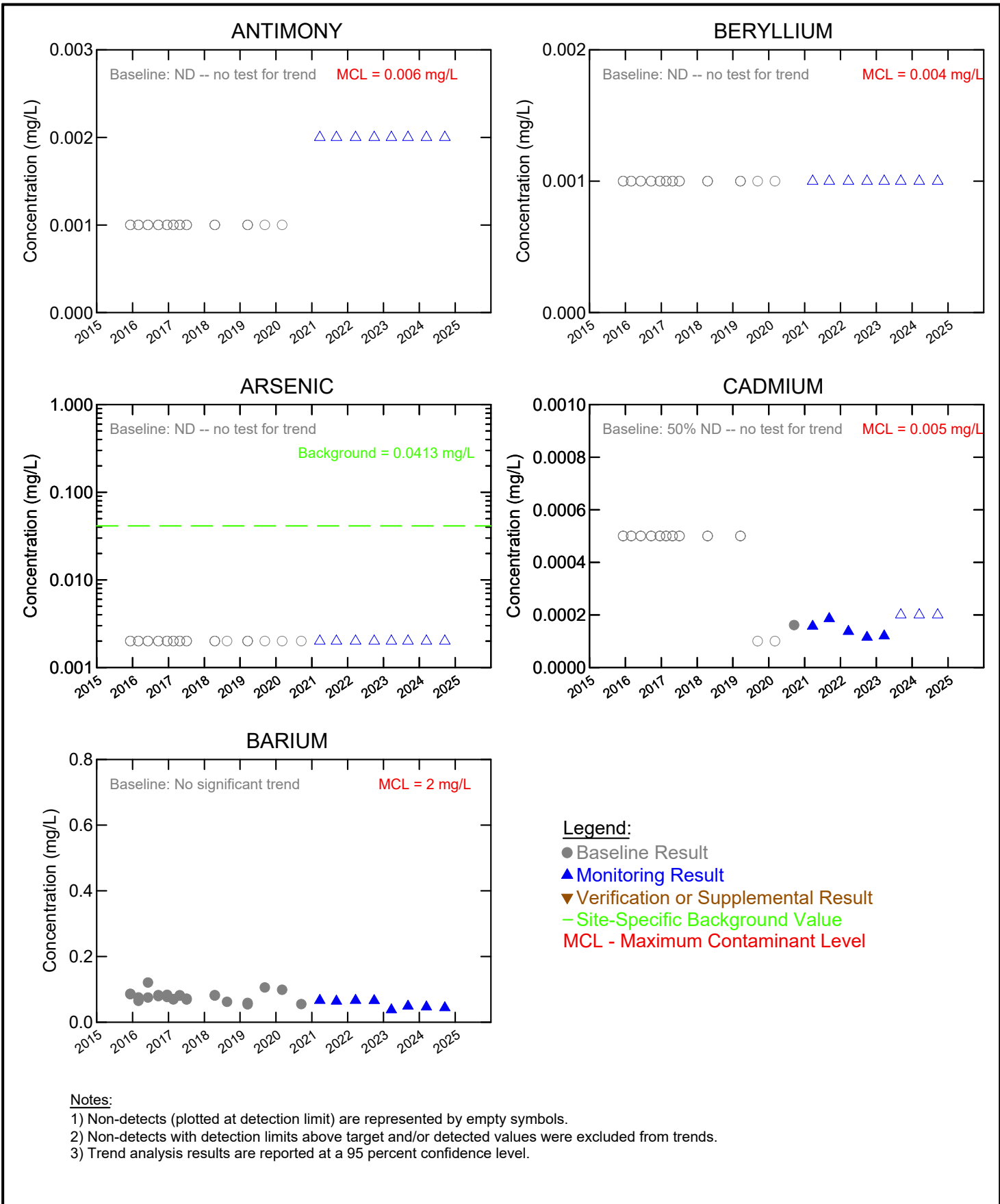


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**MW-11 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 5.b



Notes:
 1) Non-detects (plotted at detection limit) are represented by empty symbols.
 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
 3) Trend analysis results are reported at a 95 percent confidence level.

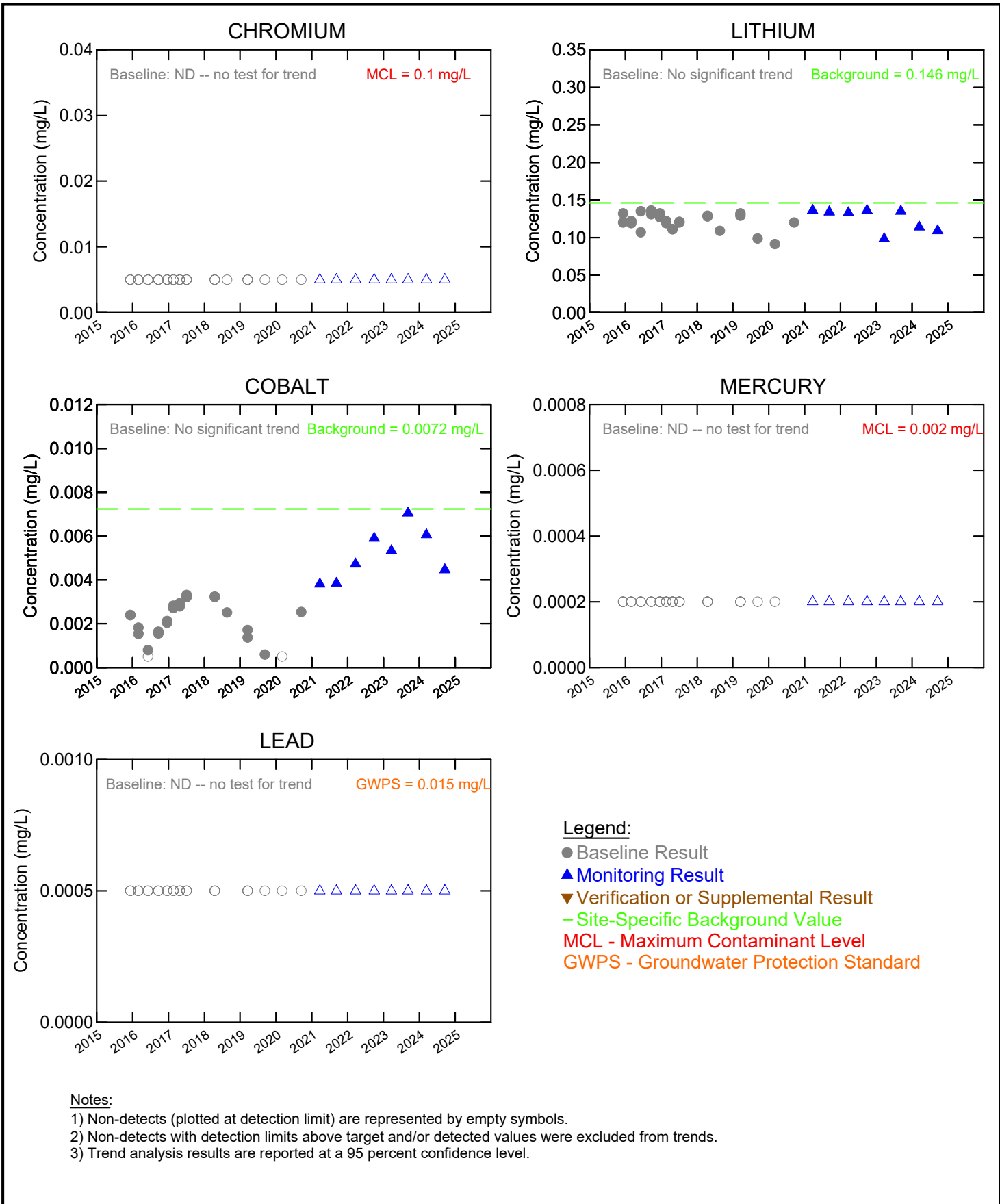


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**MW-11 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 5.c



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

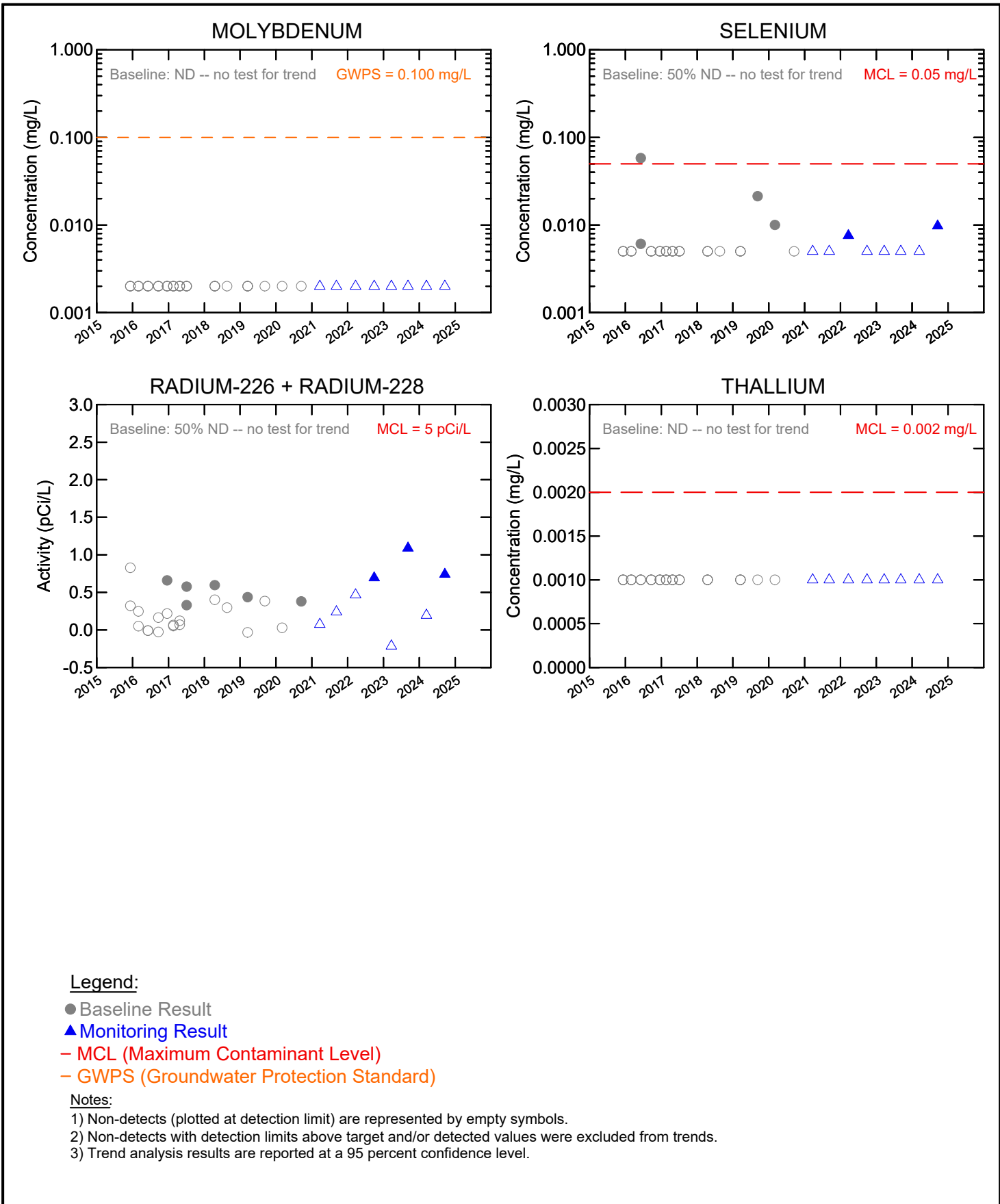


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**MW-11 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 5.d



Legend:

- Baseline Result
- ▲ Monitoring Result
- MCL (Maximum Contaminant Level)
- GWPS (Groundwater Protection Standard)

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

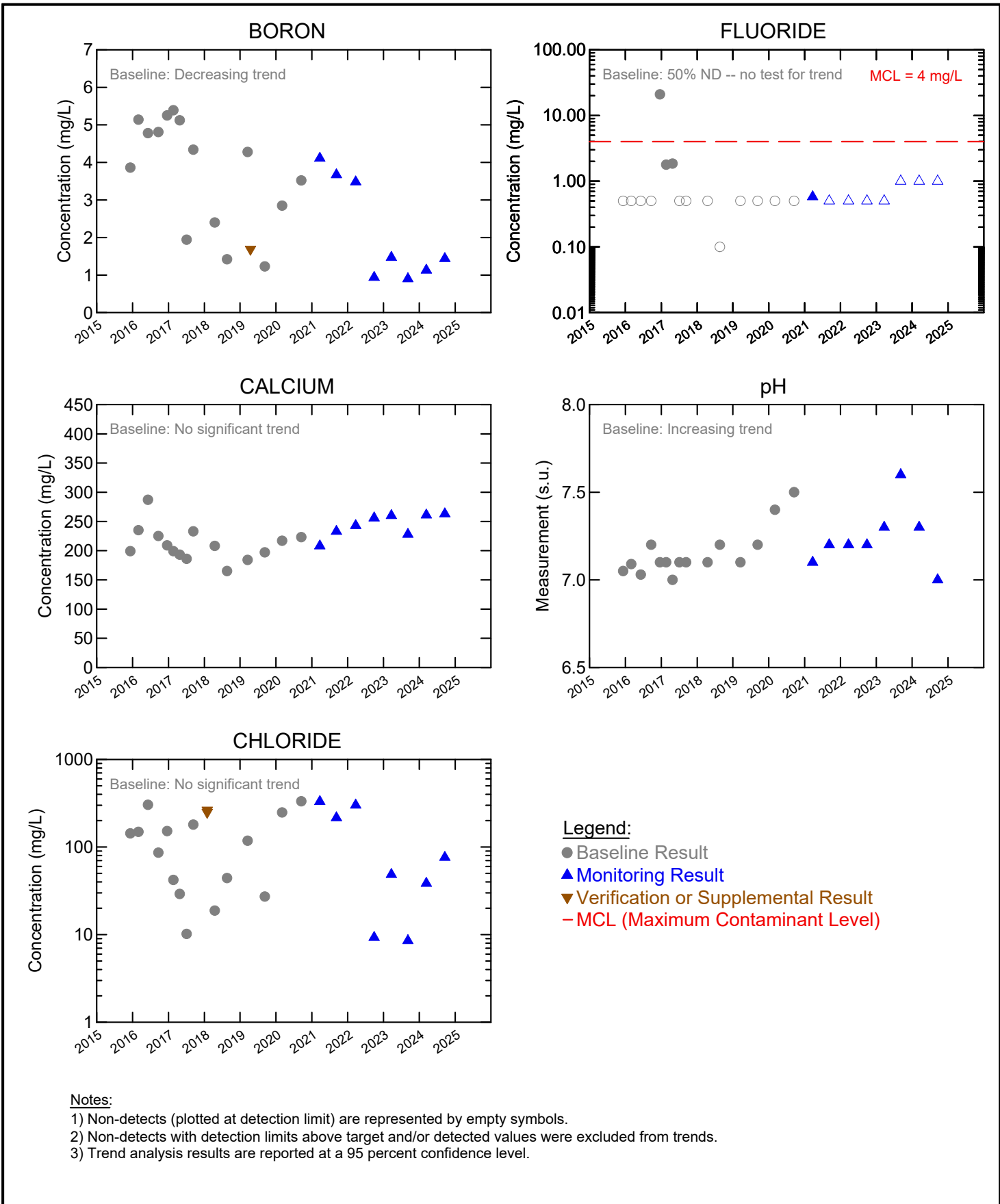


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**MW-11 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 5.e



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

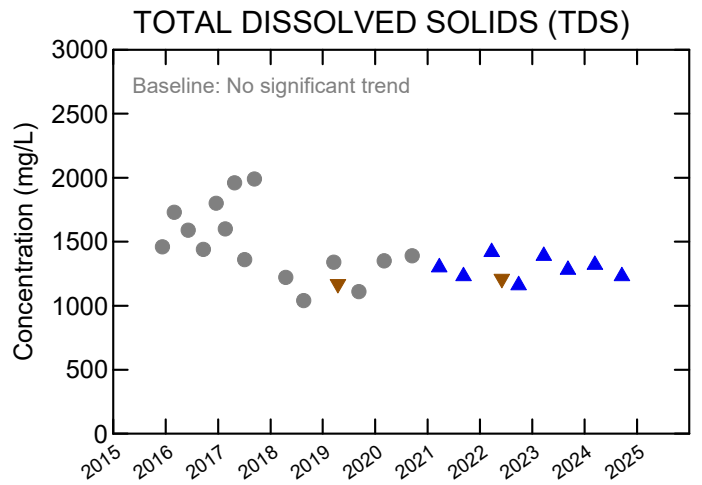
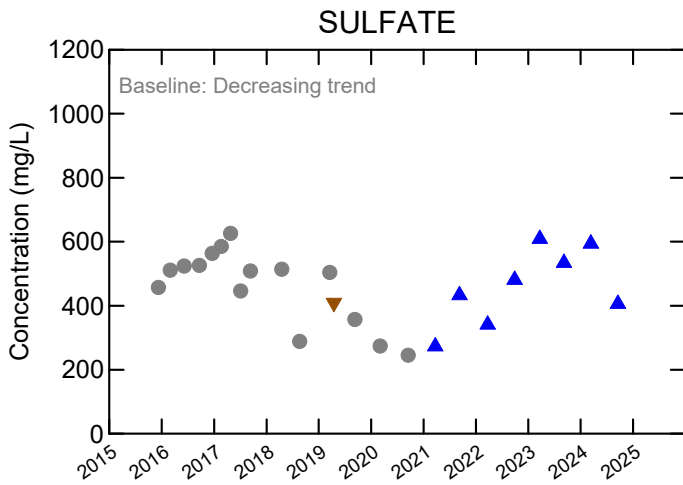


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**MW-12 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
 Date: Nov 14, 2024

FIGURE 6.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

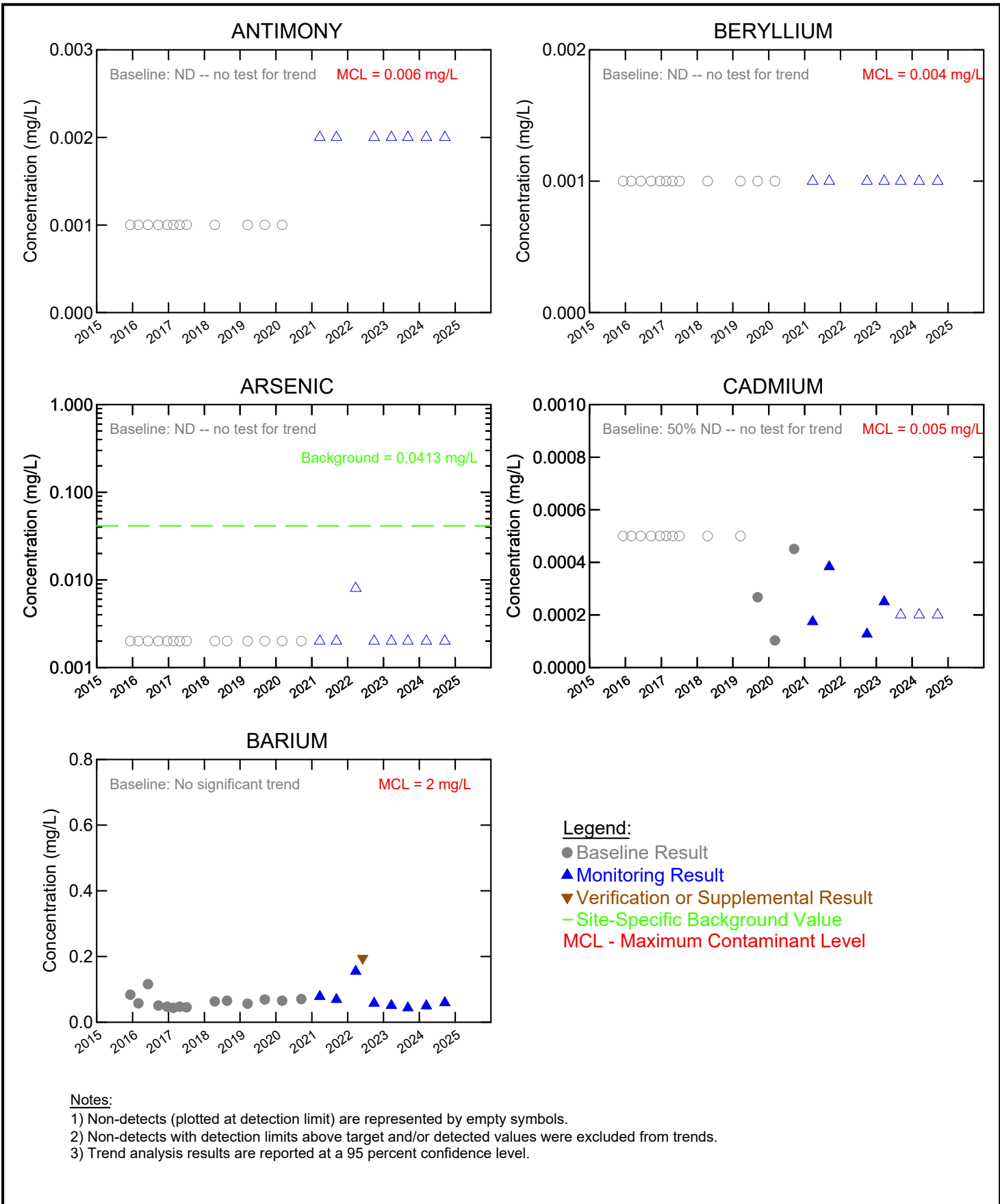


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**MW-12 -- APPENDIX III PARAMETERS
ANALYTE CONCENTRATION vs. TIME**

FIGURE 6.b

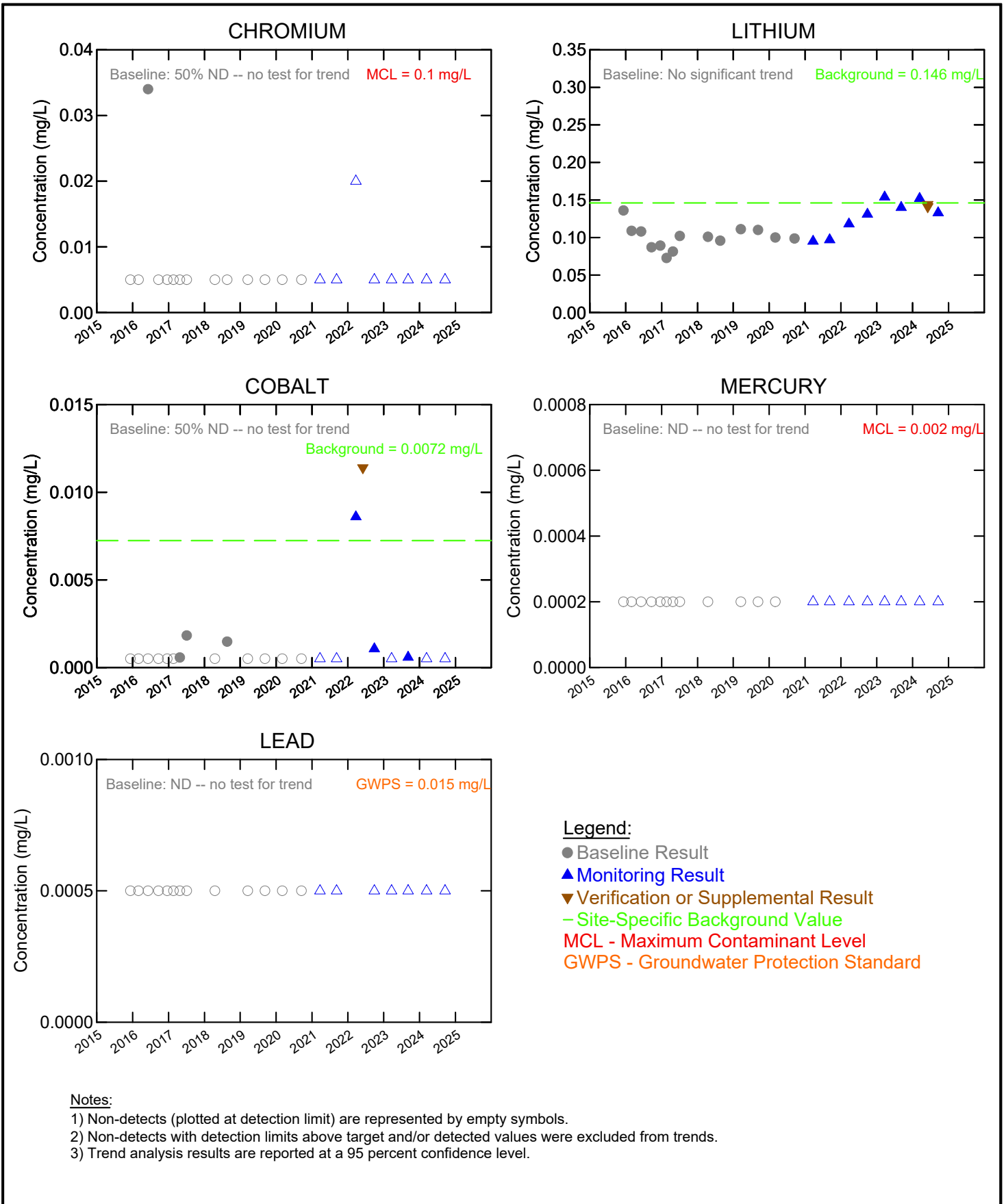


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**MW-12 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 6.c



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

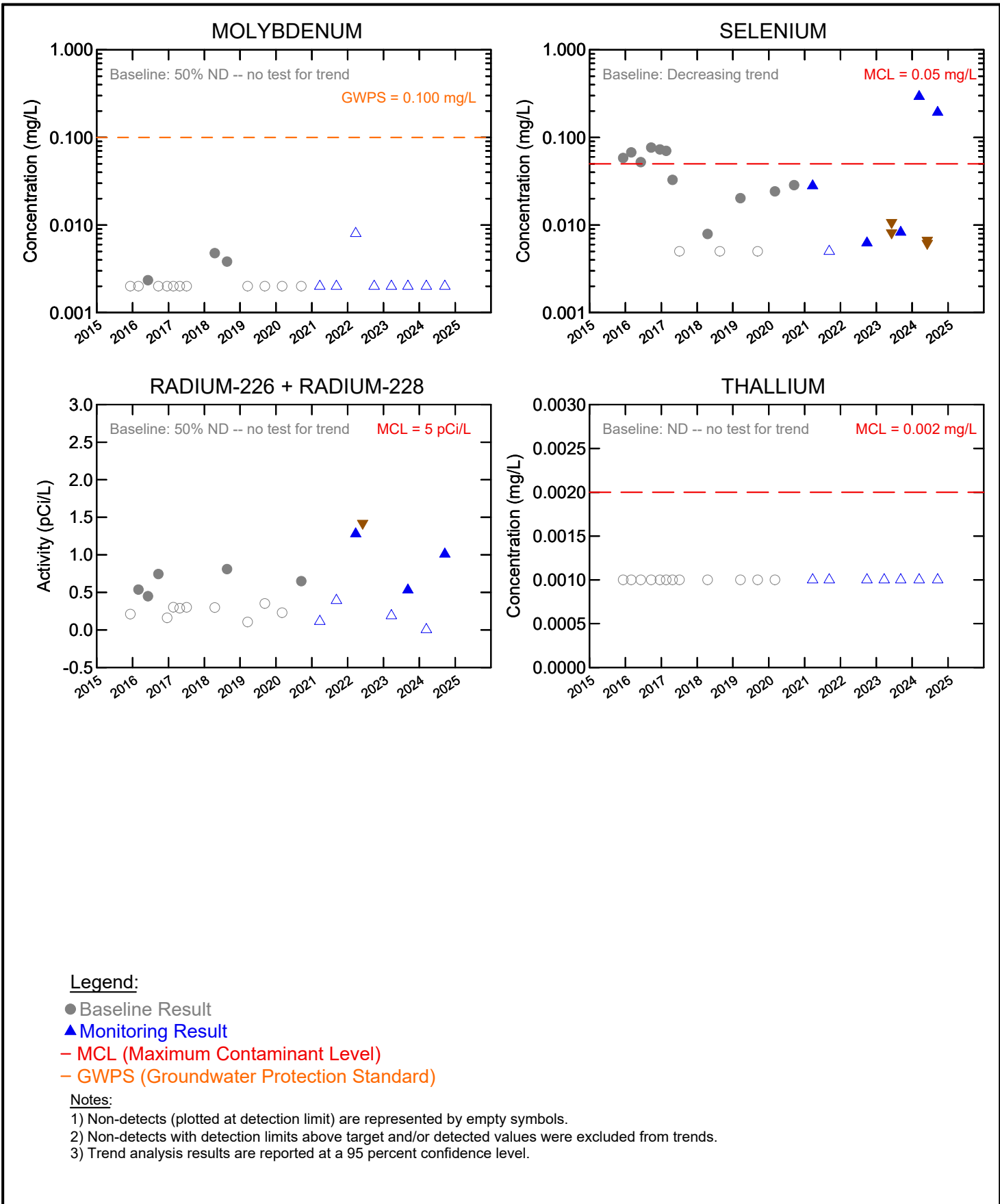


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**MW-12 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 6.d



Legend:

- Baseline Result
- ▲ Monitoring Result
- MCL (Maximum Contaminant Level)
- GWPS (Groundwater Protection Standard)

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

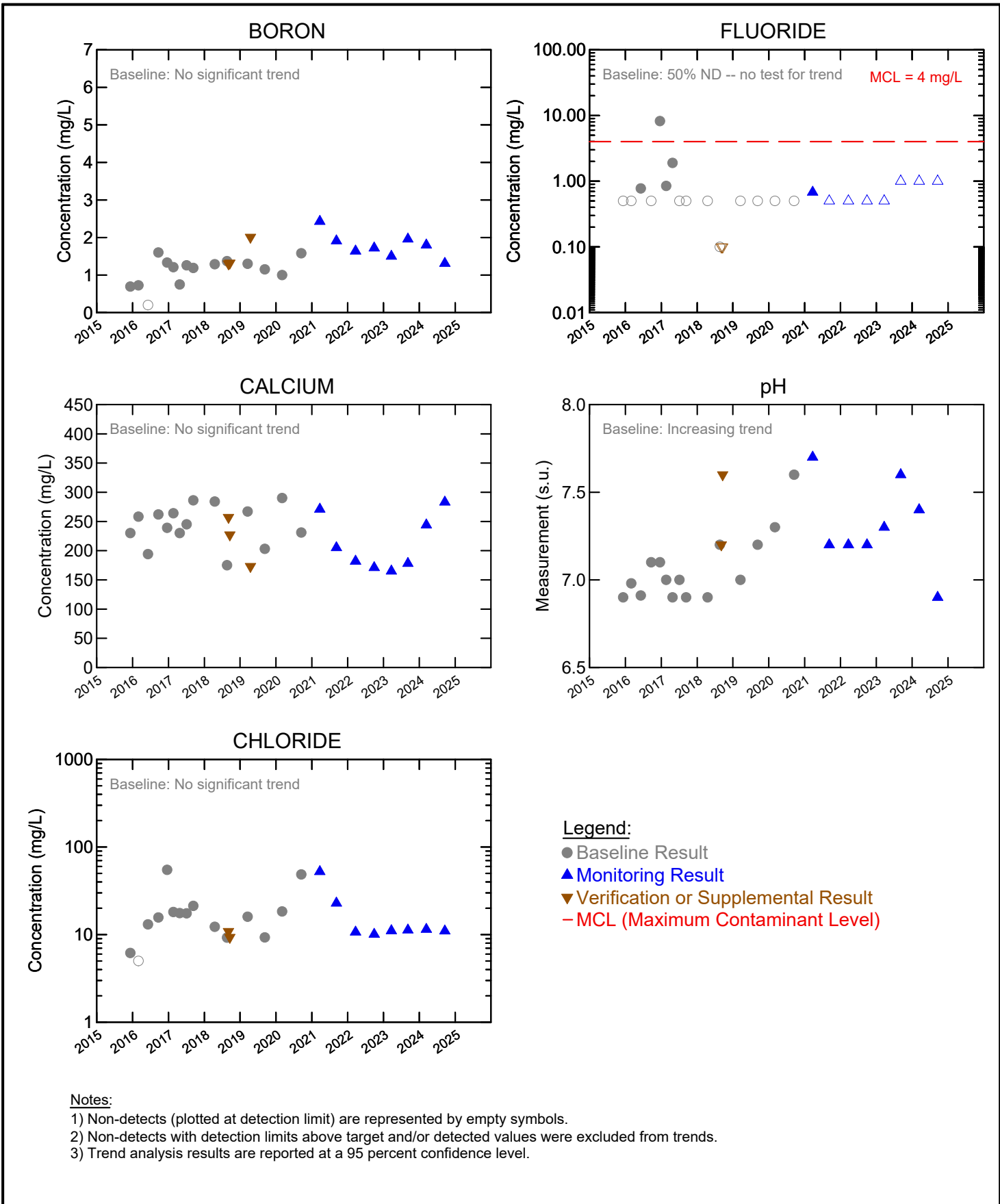


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**MW-12 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
 Date: Nov 14, 2024

FIGURE 6.e



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

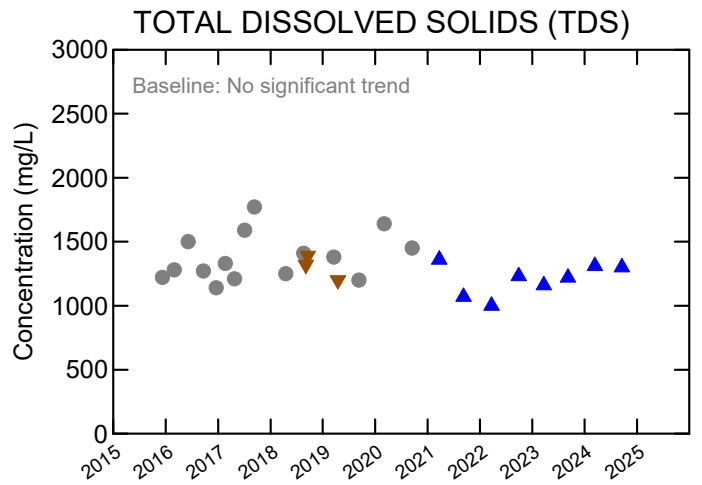
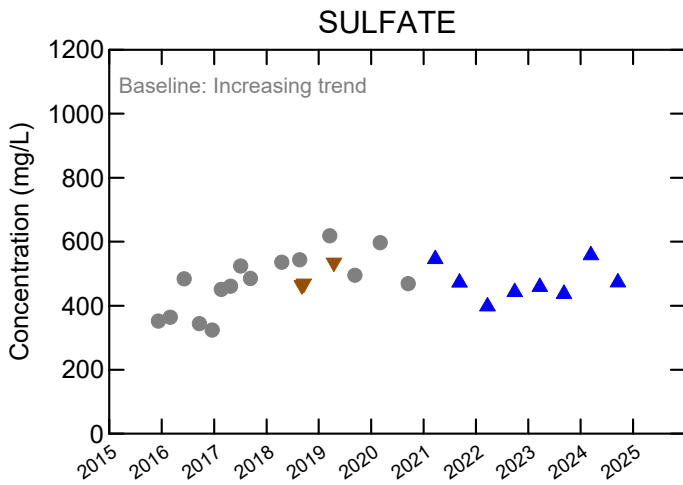


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**MW-13 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
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FIGURE 7.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

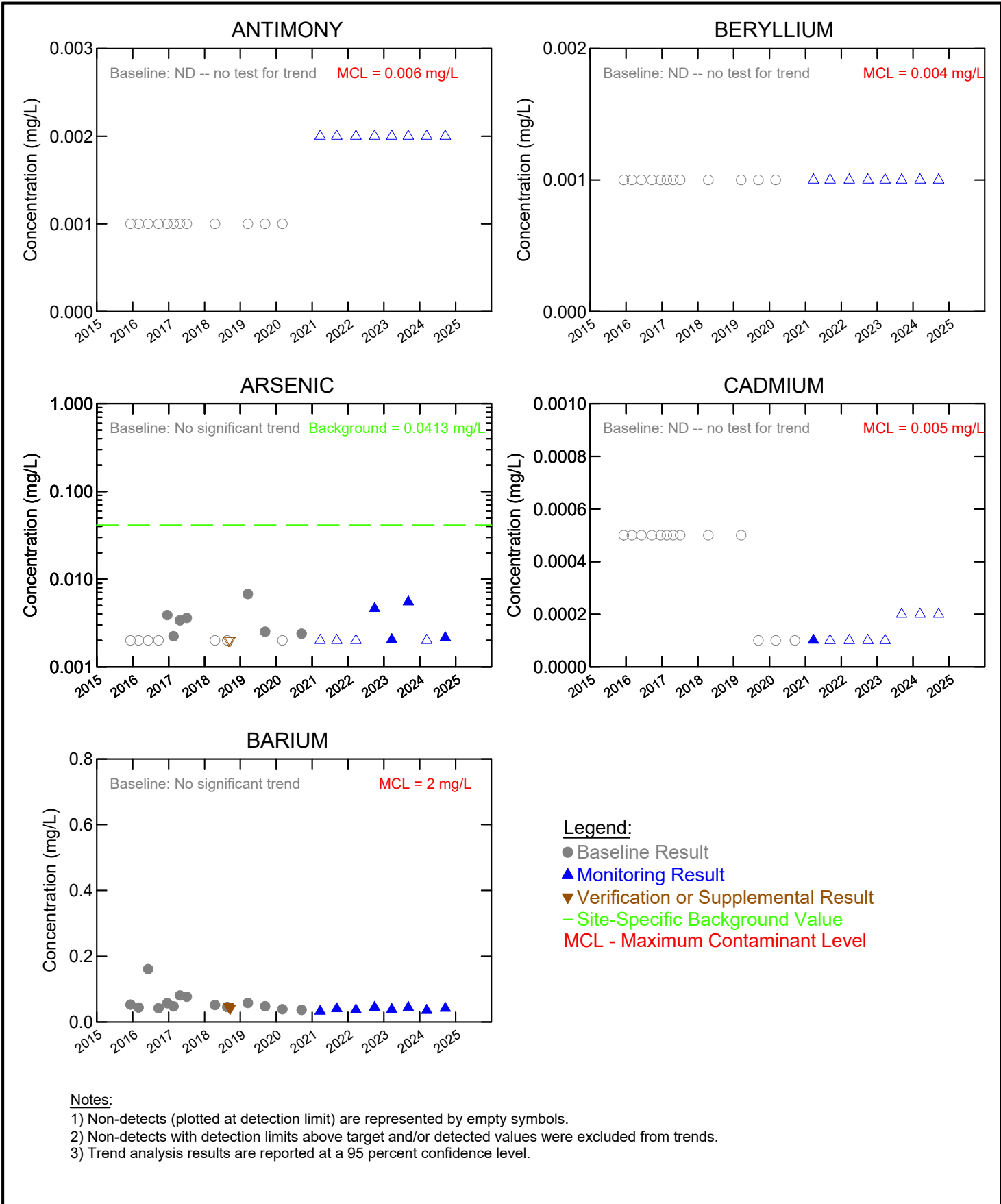


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**MW-13 -- APPENDIX III PARAMETERS
ANALYTE CONCENTRATION vs. TIME**

FIGURE 7.b



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

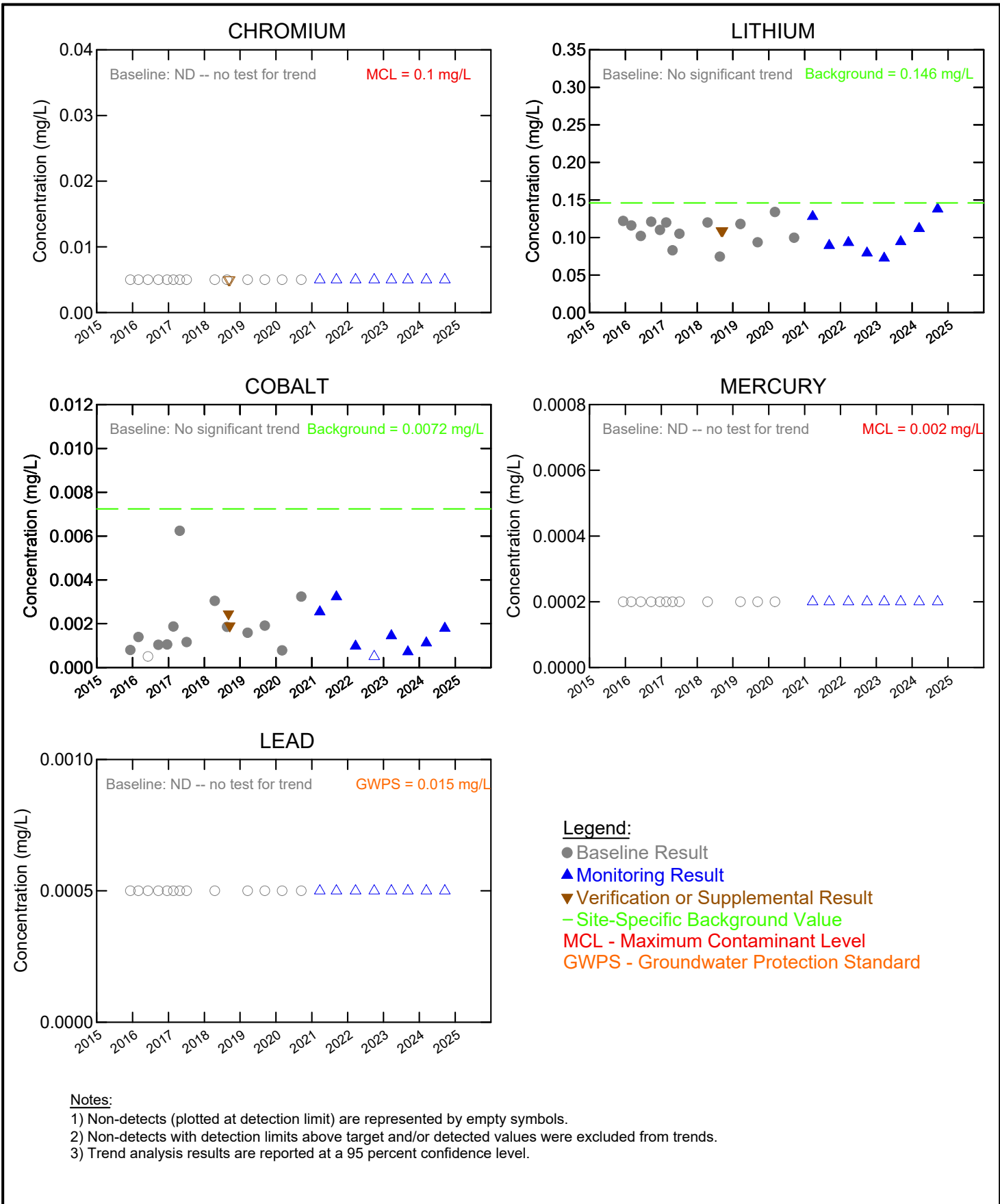


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**MW-13 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 7.c



Notes:
 1) Non-detects (plotted at detection limit) are represented by empty symbols.
 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
 3) Trend analysis results are reported at a 95 percent confidence level.

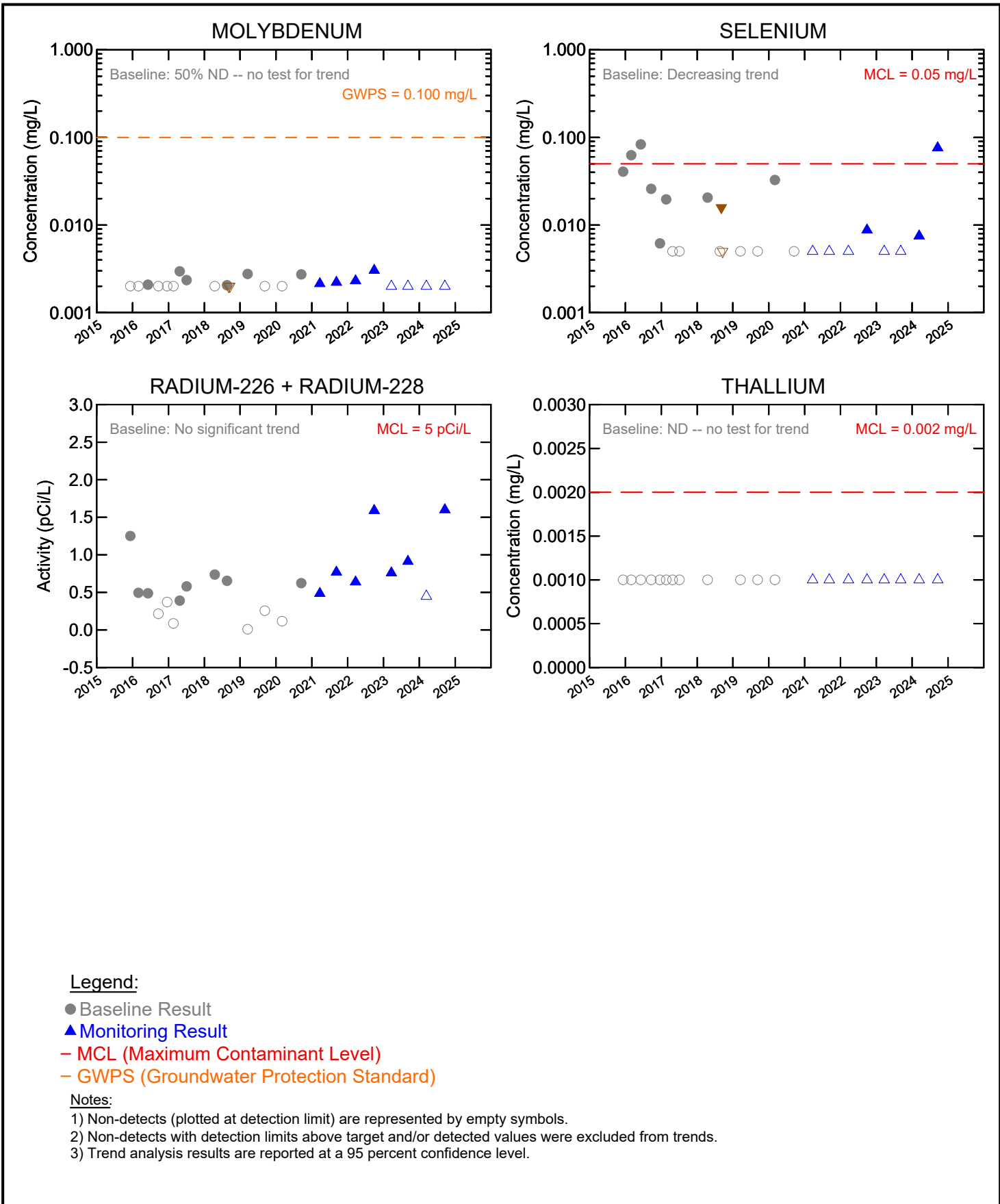


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**MW-13 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

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FIGURE 7.d

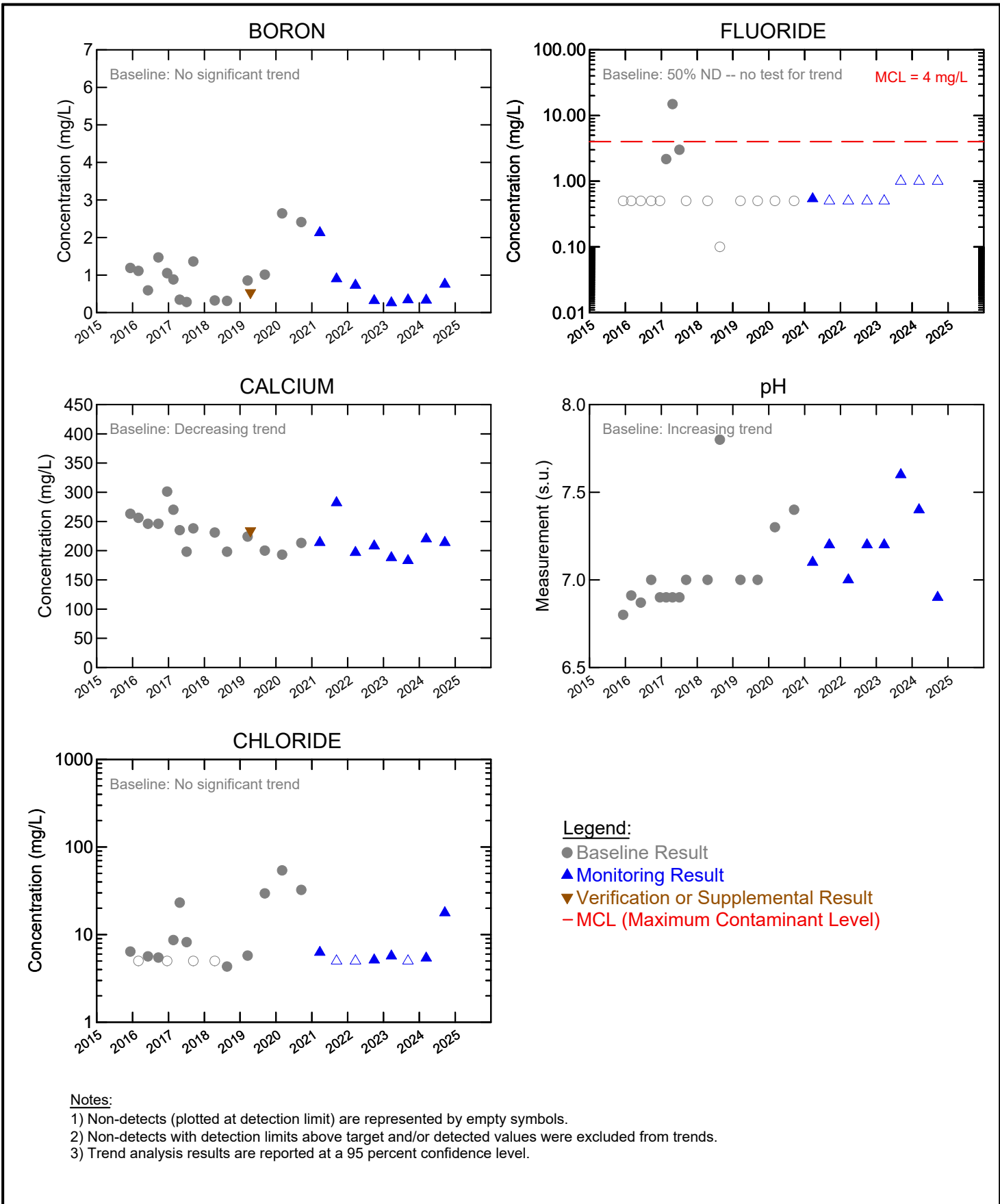


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**MW-13 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 7.e



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

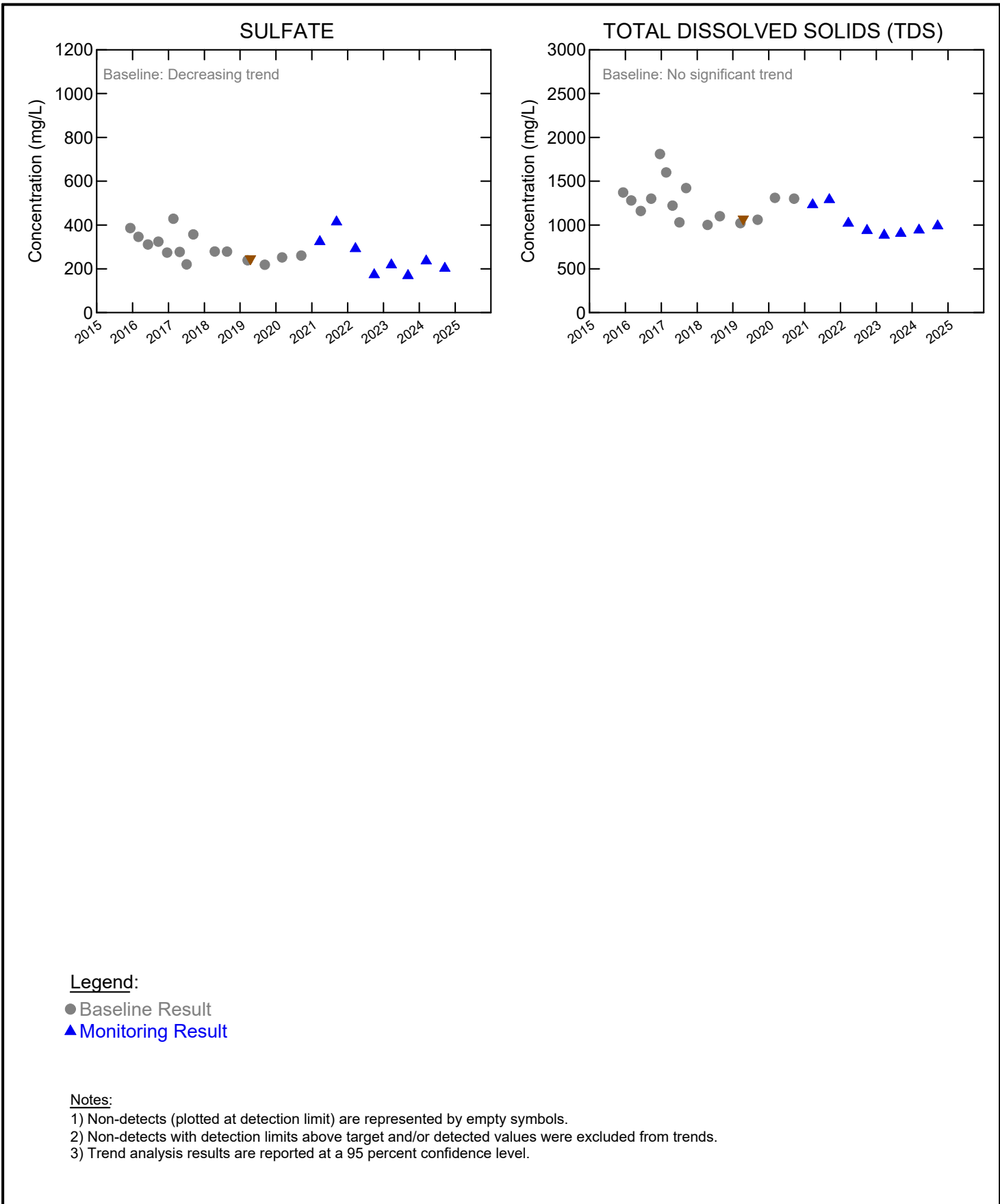


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**MW-14 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

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FIGURE 8.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

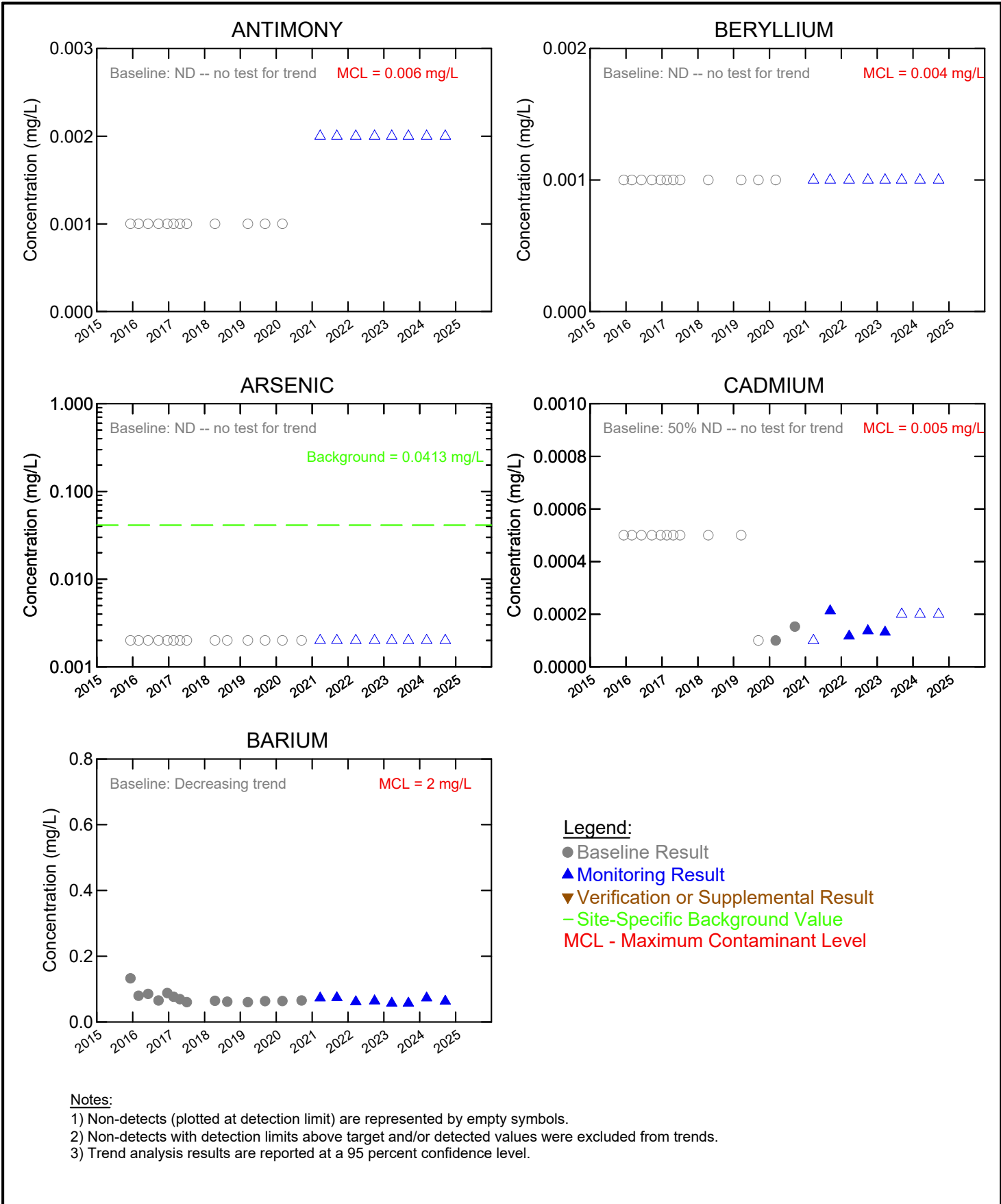


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**MW-14 -- APPENDIX III PARAMETERS
ANALYTE CONCENTRATION vs. TIME**

FIGURE 8.b



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

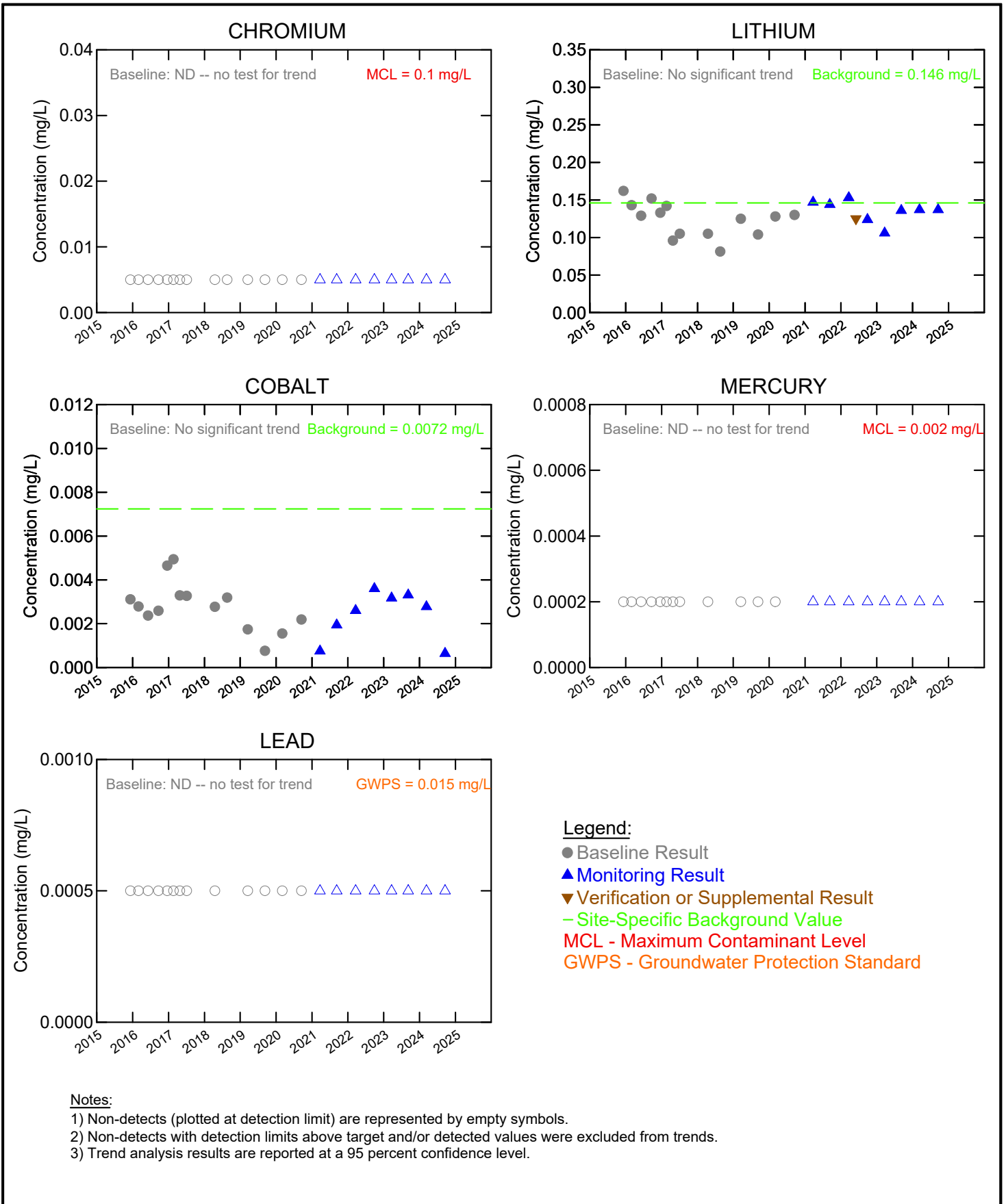


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**MW-14 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 8.c



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

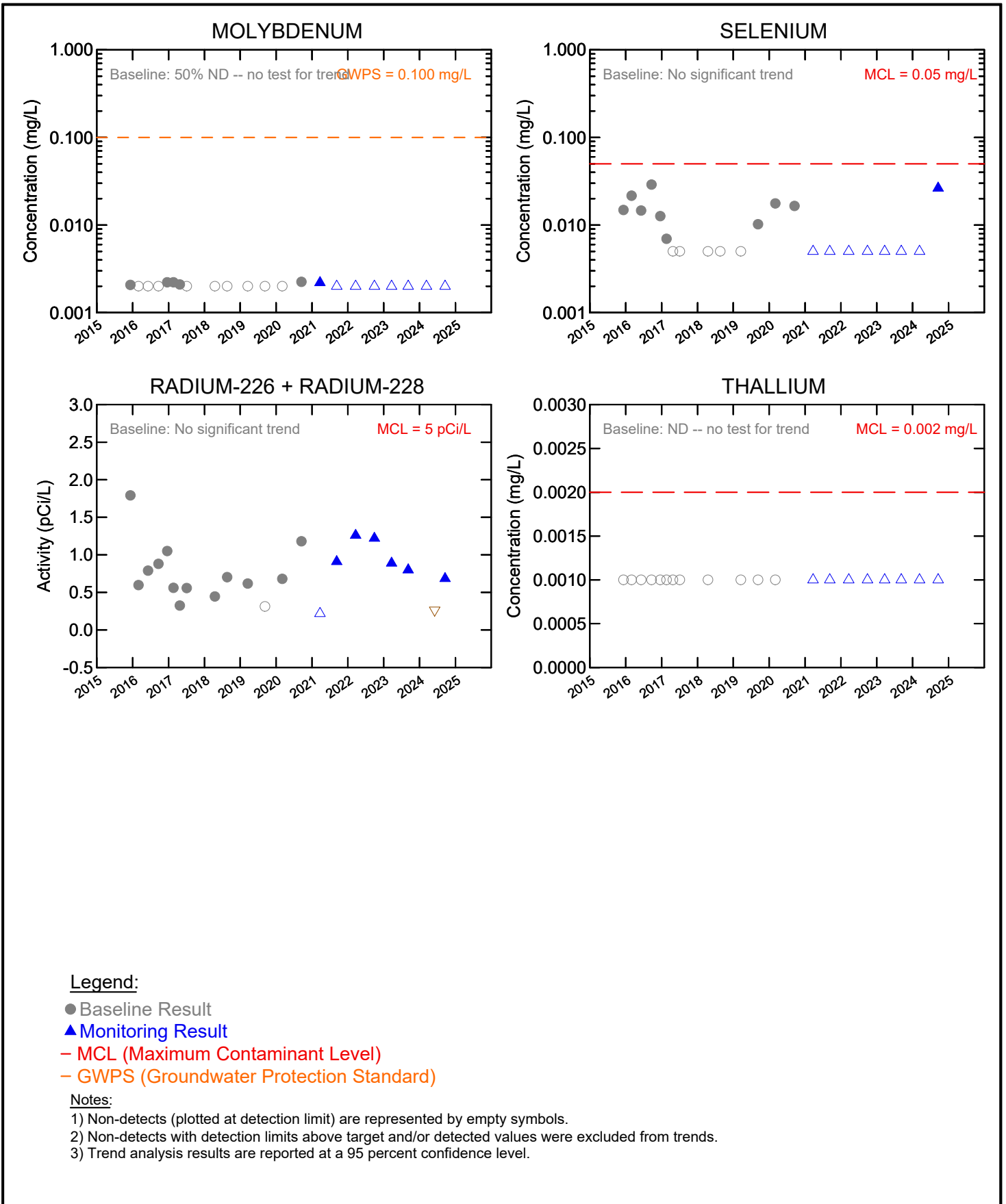


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**MW-14 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

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FIGURE 8.d

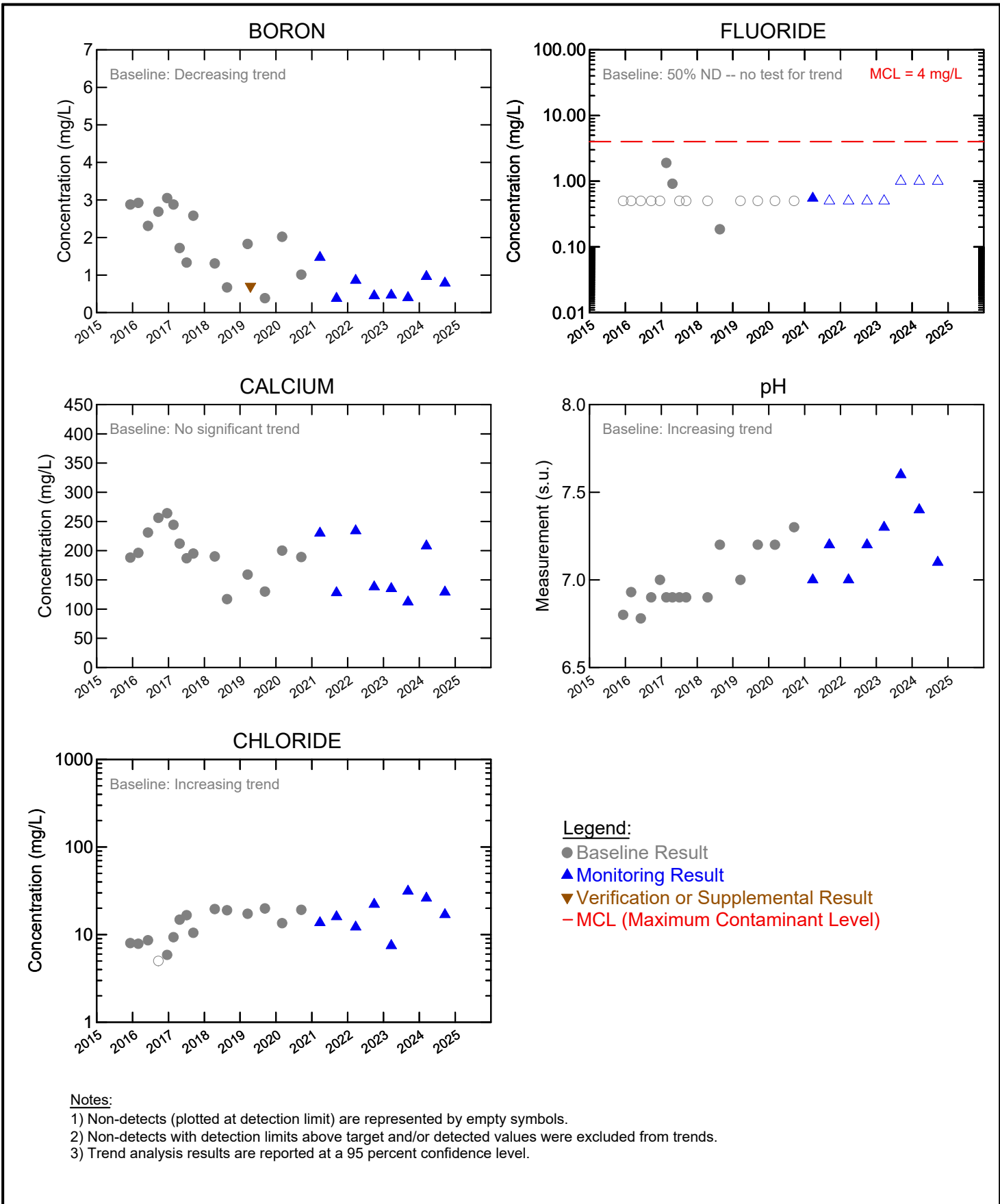


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**MW-14 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 8.e

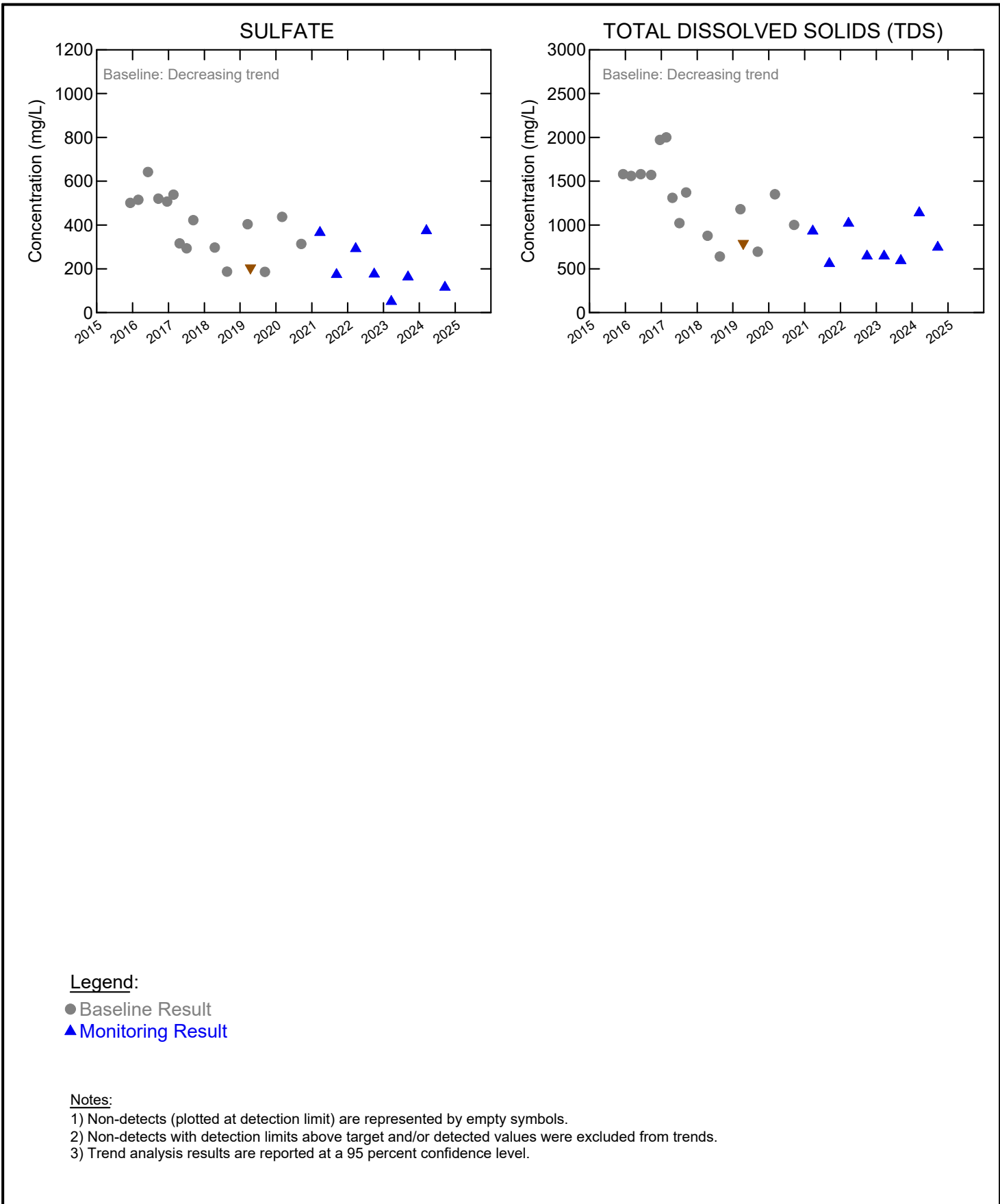


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**MW-15 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 9.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

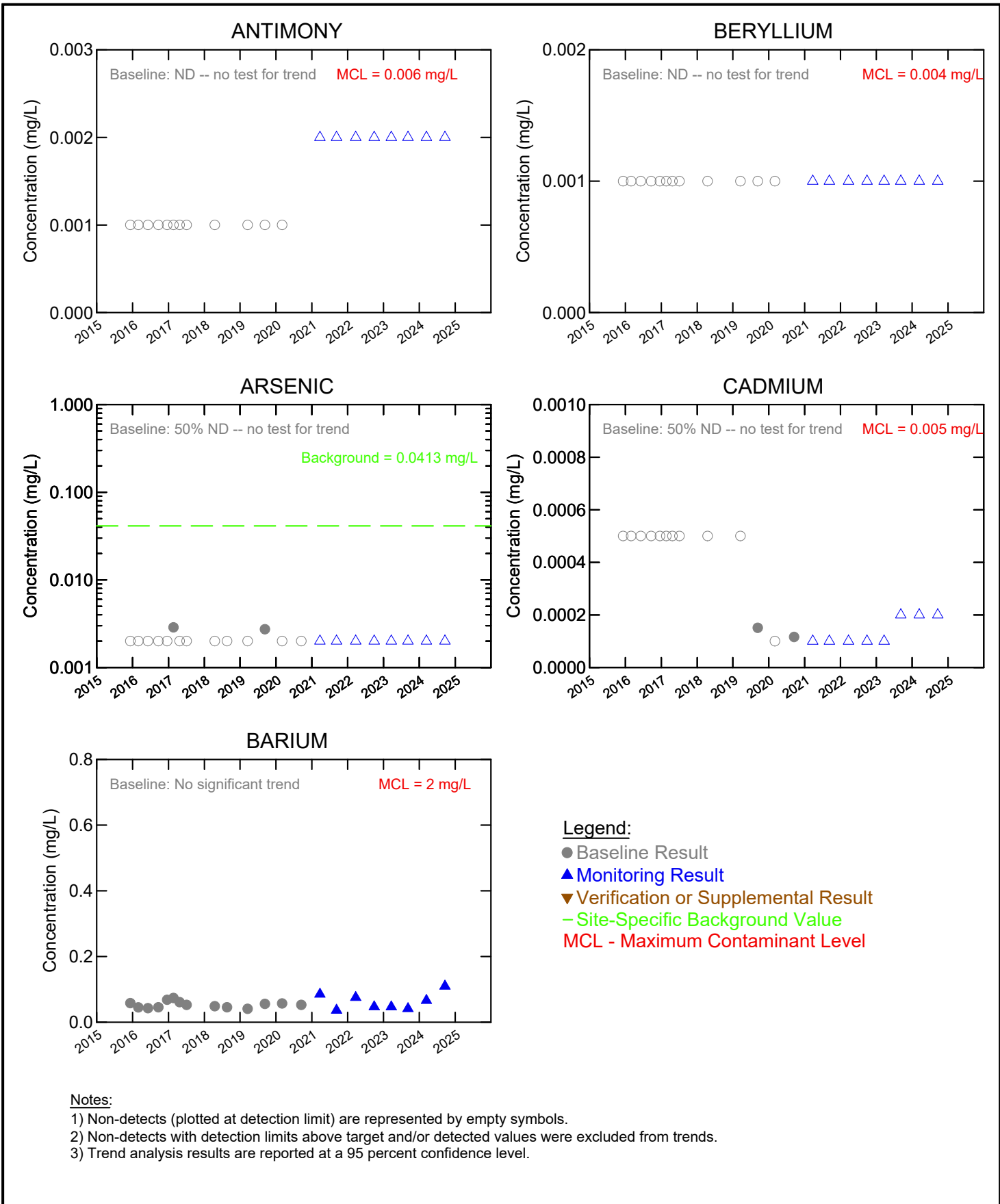


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**MW-15 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 9.b



Notes:
 1) Non-detects (plotted at detection limit) are represented by empty symbols.
 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
 3) Trend analysis results are reported at a 95 percent confidence level.

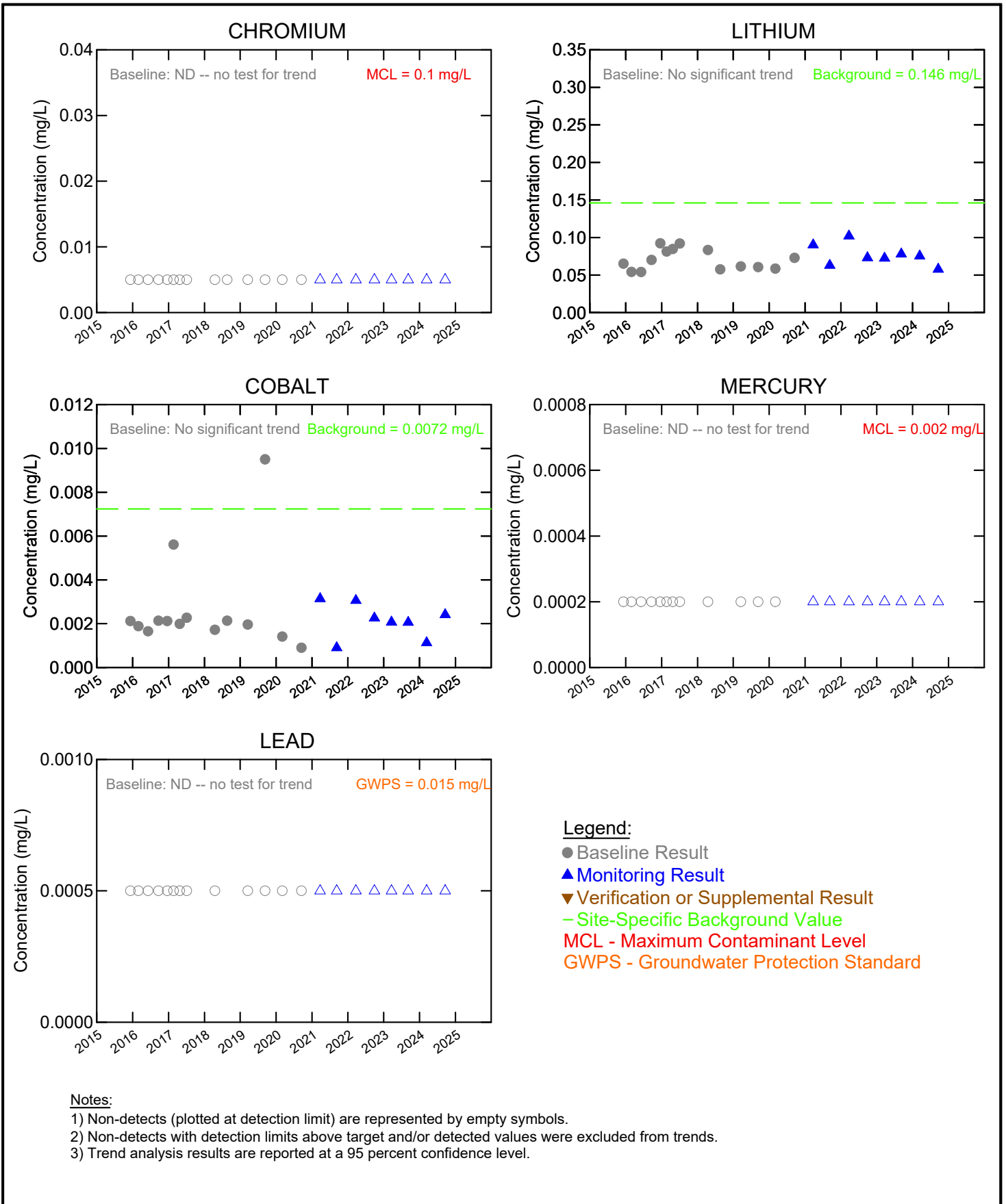


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**MW-15 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 9.c



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

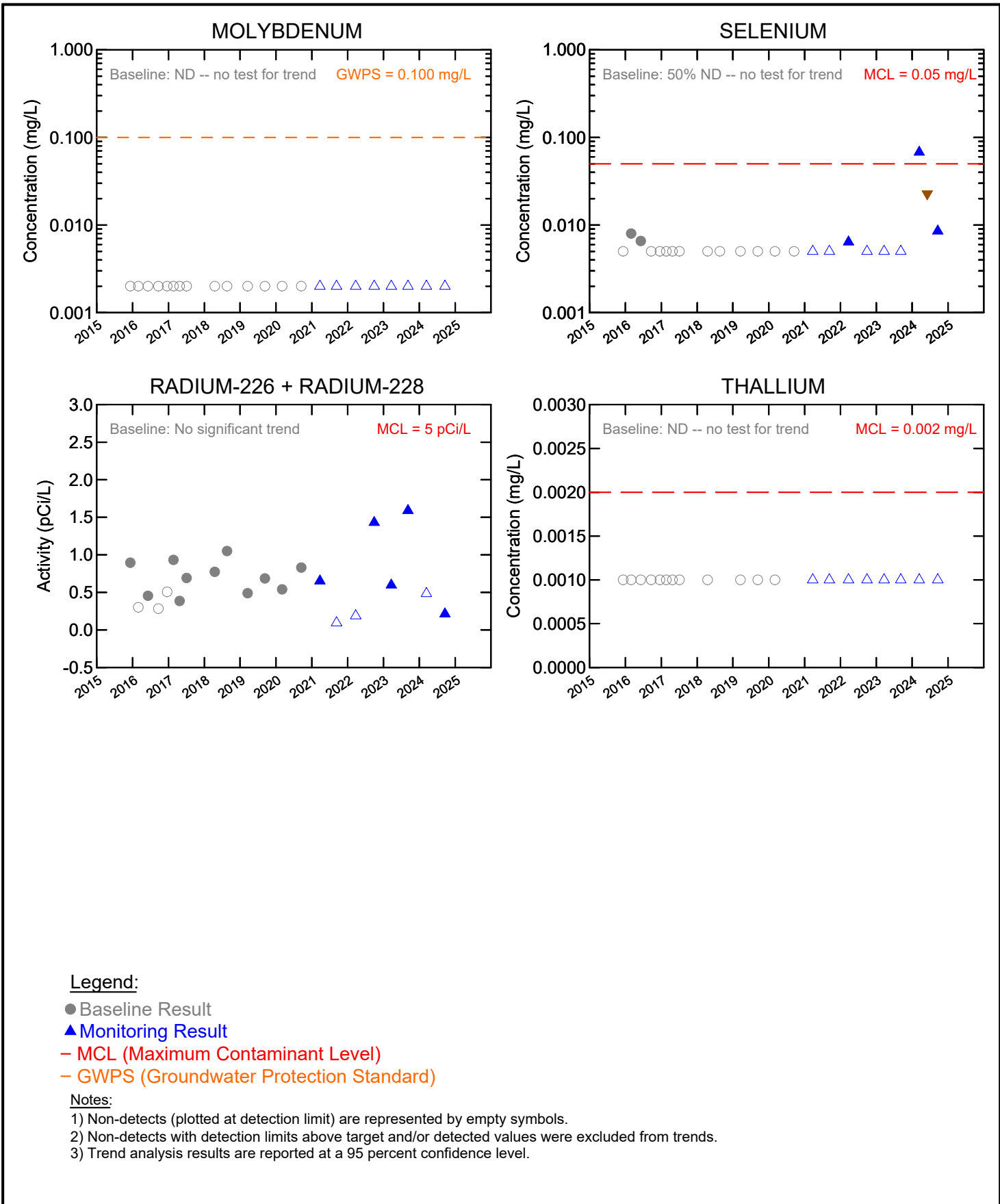


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**MW-15 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

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FIGURE 9.d



Legend:

- Baseline Result
- ▲ Monitoring Result
- MCL (Maximum Contaminant Level)
- GWPS (Groundwater Protection Standard)

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

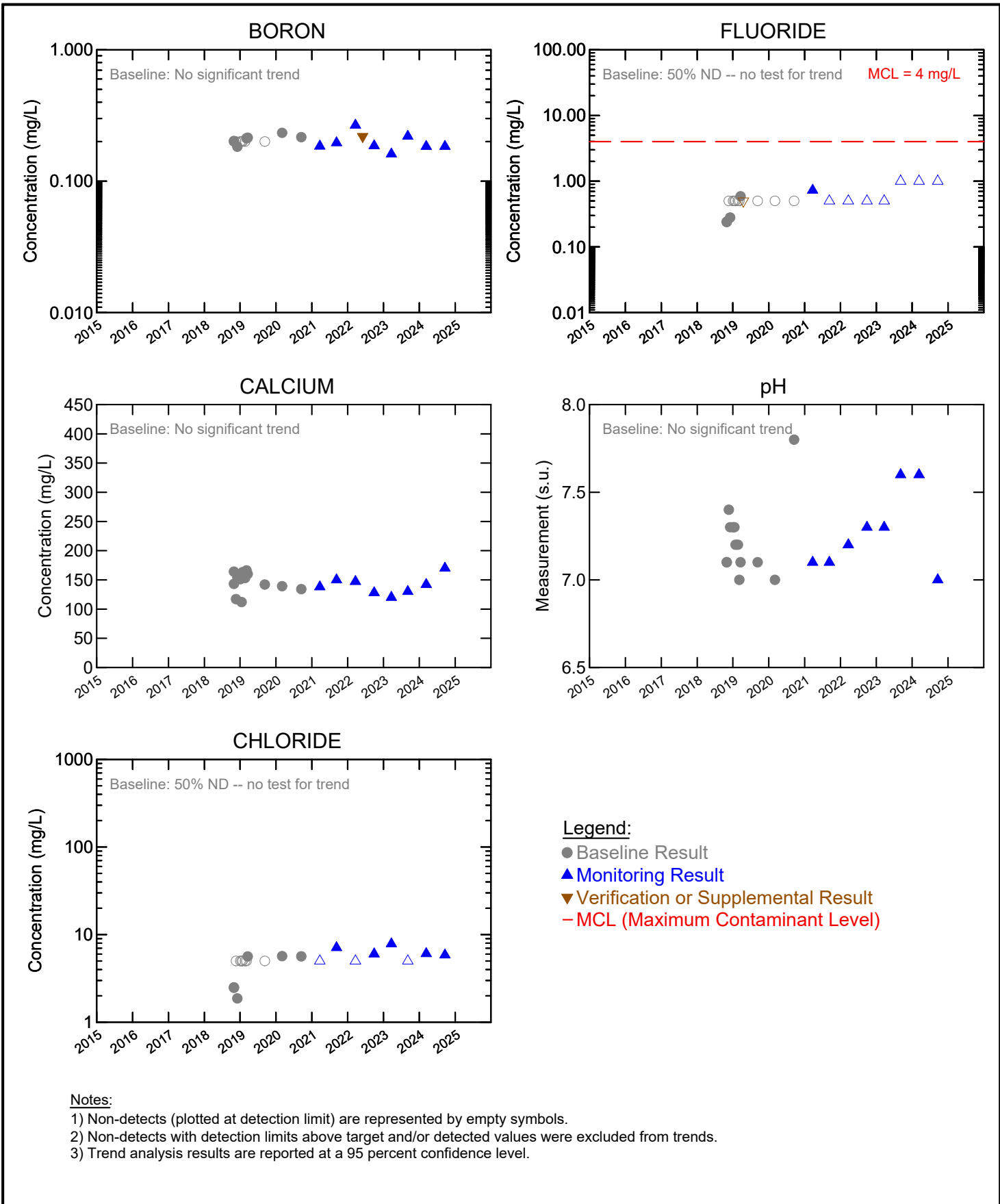


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**MW-15 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 9.e

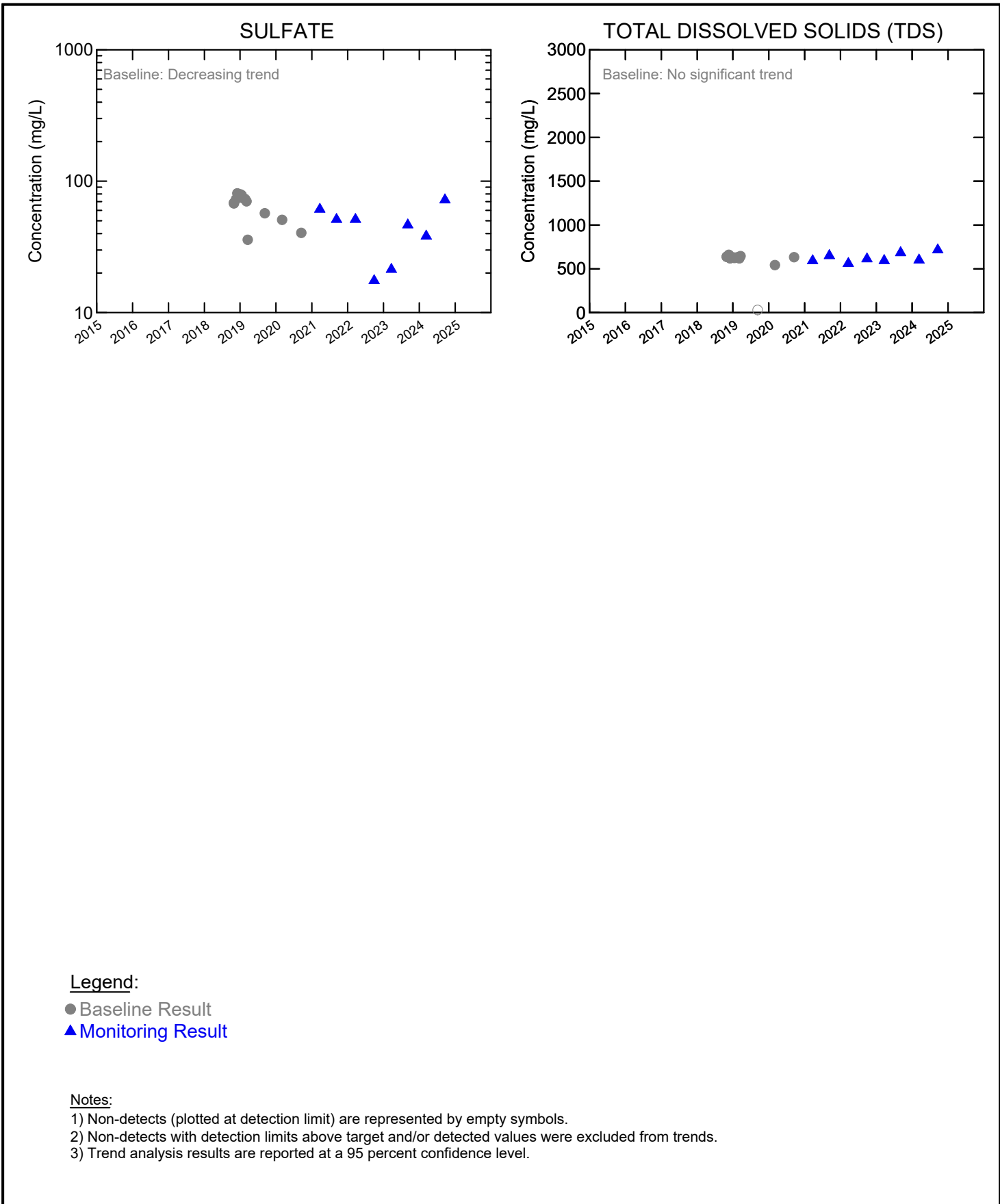


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**MW-16 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 10.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

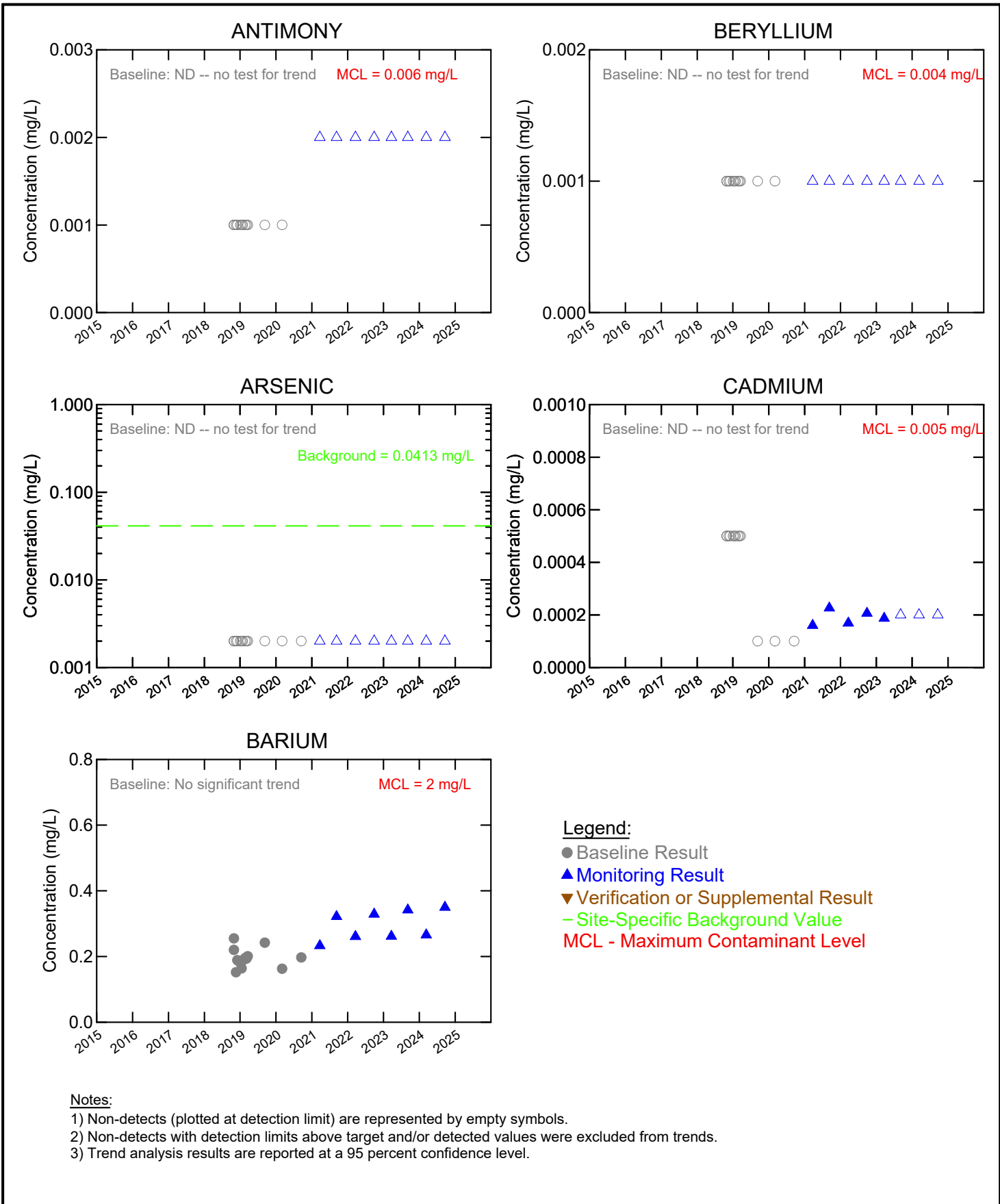


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**MW-16 -- APPENDIX III PARAMETERS
ANALYTE CONCENTRATION vs. TIME**

FIGURE 10.b



- Notes:**
- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
 - 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
 - 3) Trend analysis results are reported at a 95 percent confidence level.

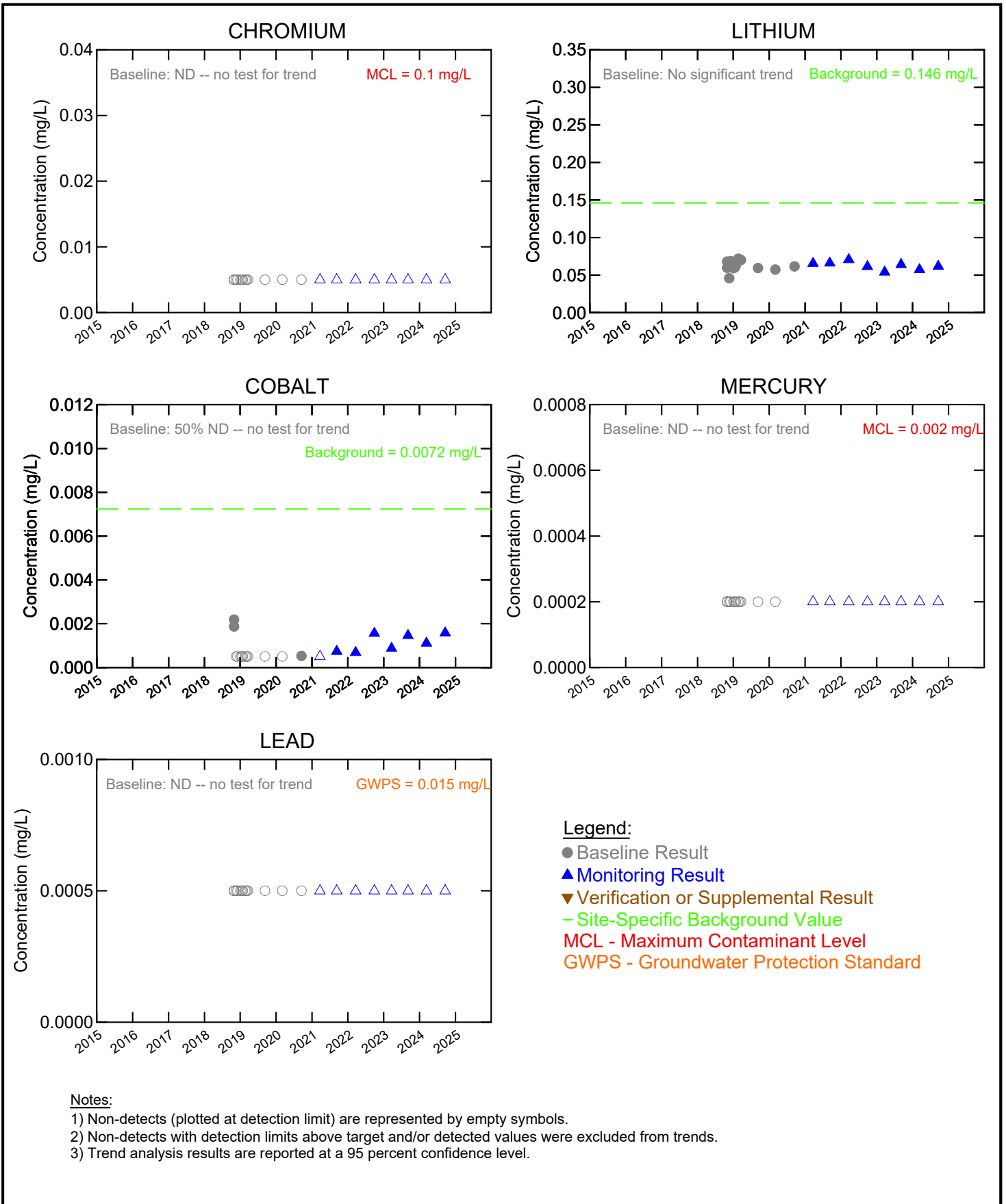


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**MW-16 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 10.c



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

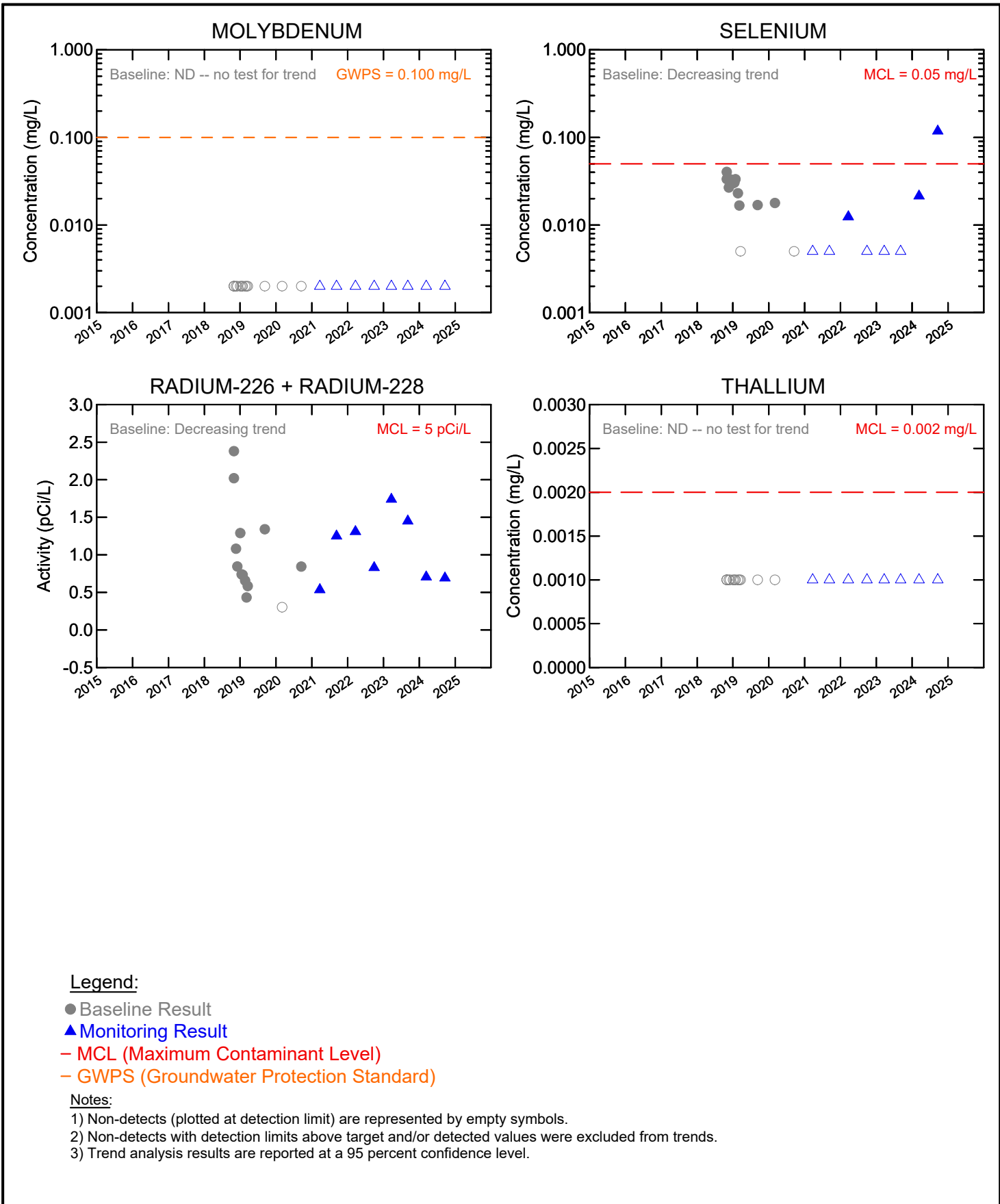


MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

**MW-16 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
 Date: Nov 13, 2024

FIGURE 10.d



Legend:

- Baseline Result
- ▲ Monitoring Result
- MCL (Maximum Contaminant Level)
- GWPS (Groundwater Protection Standard)

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

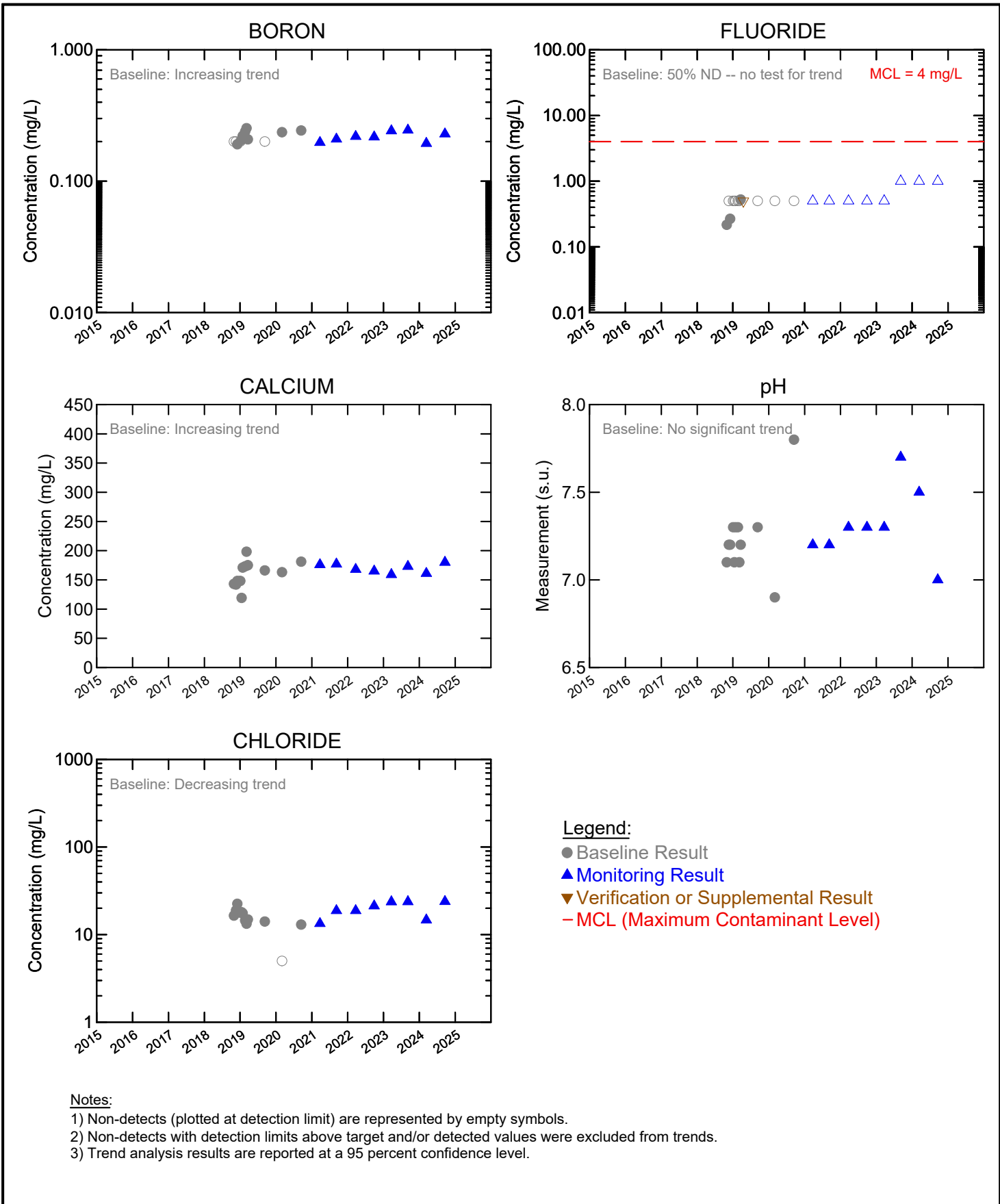


MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

**MW-16 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
 Date: Nov 14, 2024

FIGURE 10.e



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

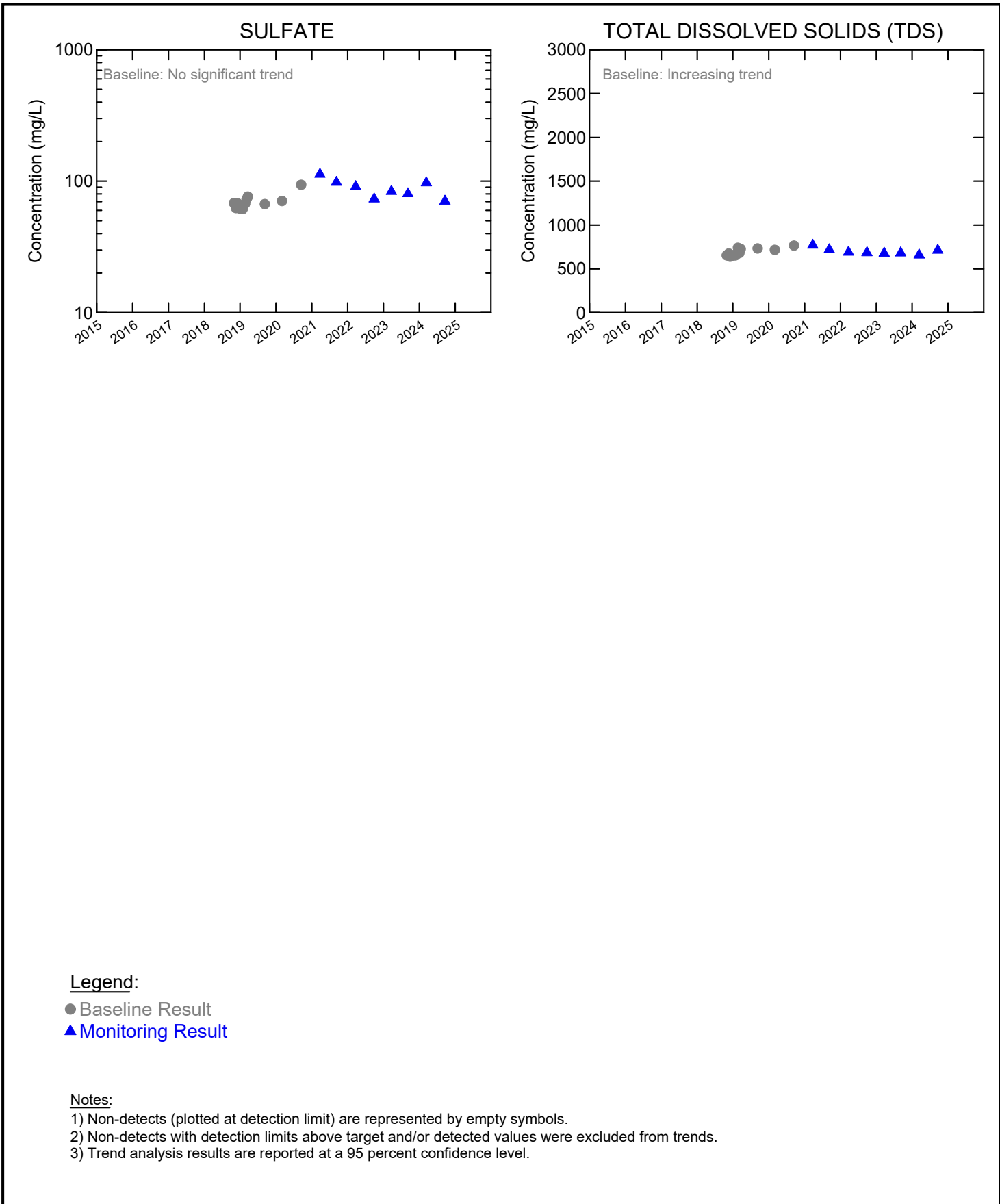


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**MW-17 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
 Date: Nov 14, 2024

FIGURE 11.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

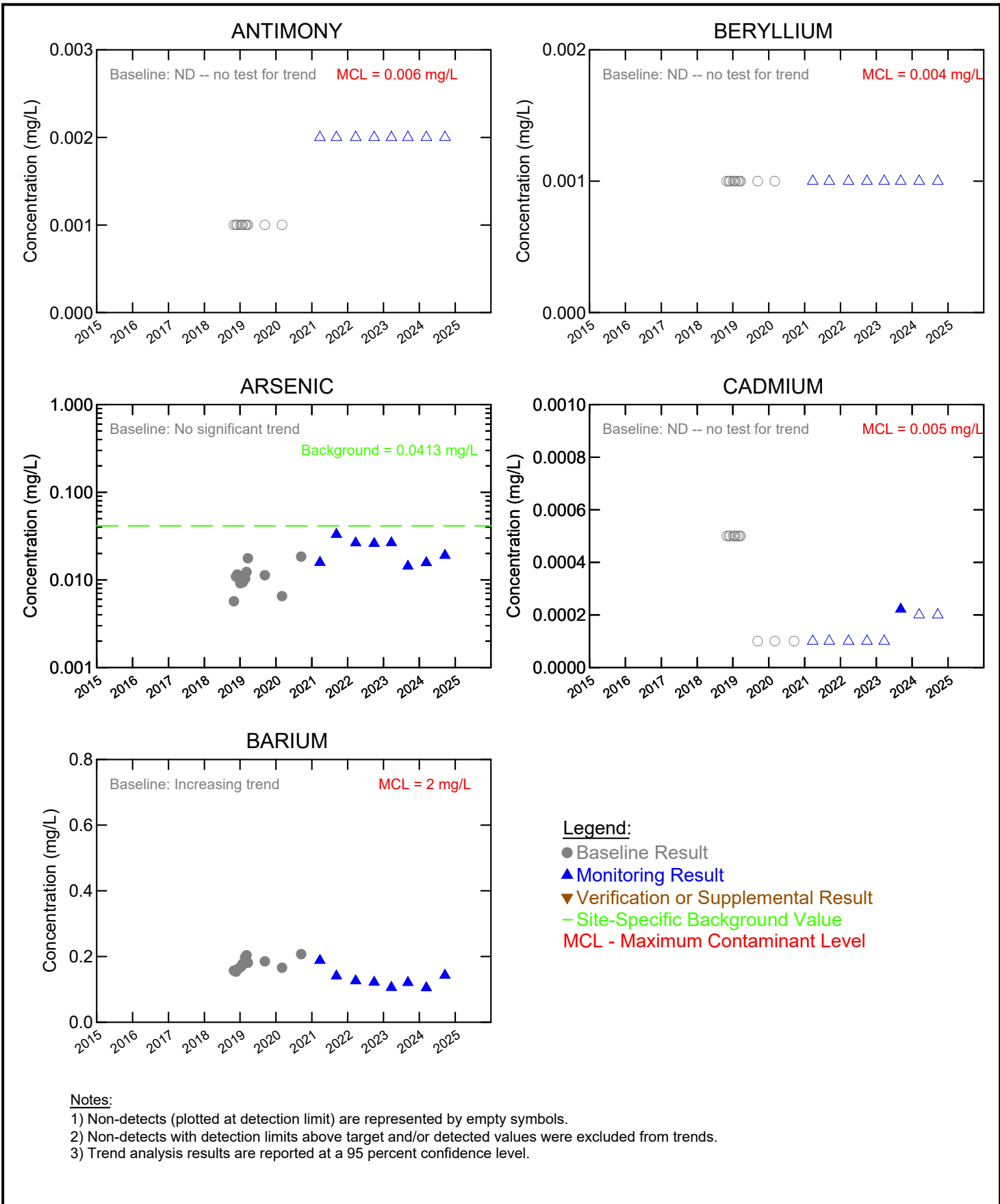


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**MW-17 -- APPENDIX III PARAMETERS
ANALYTE CONCENTRATION vs. TIME**

FIGURE 11.b



Notes:
 1) Non-detects (plotted at detection limit) are represented by empty symbols.
 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
 3) Trend analysis results are reported at a 95 percent confidence level.

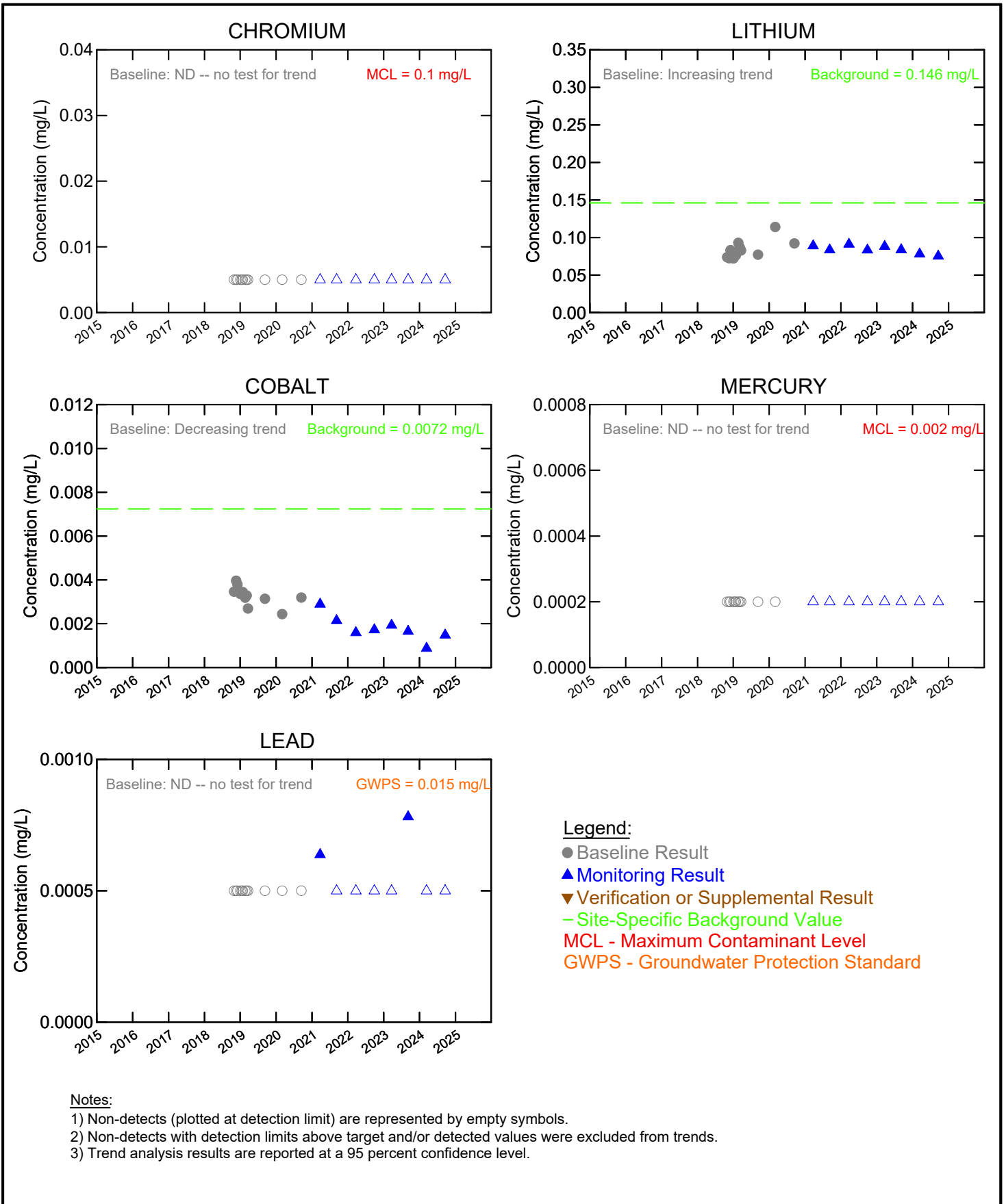


MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

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**MW-17 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 11.c



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

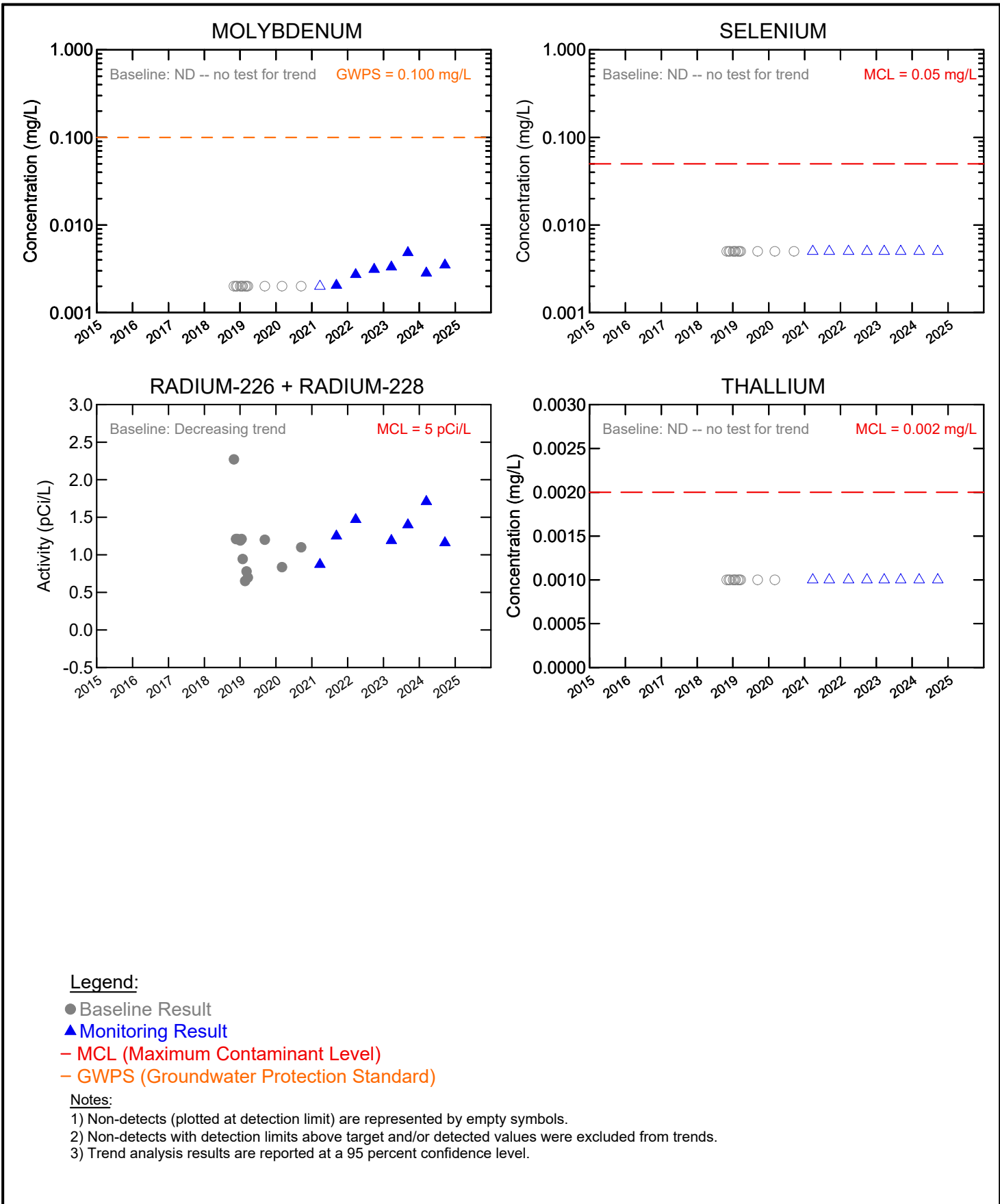


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**MW-17 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
 Date: Nov 13, 2024

FIGURE 11.d

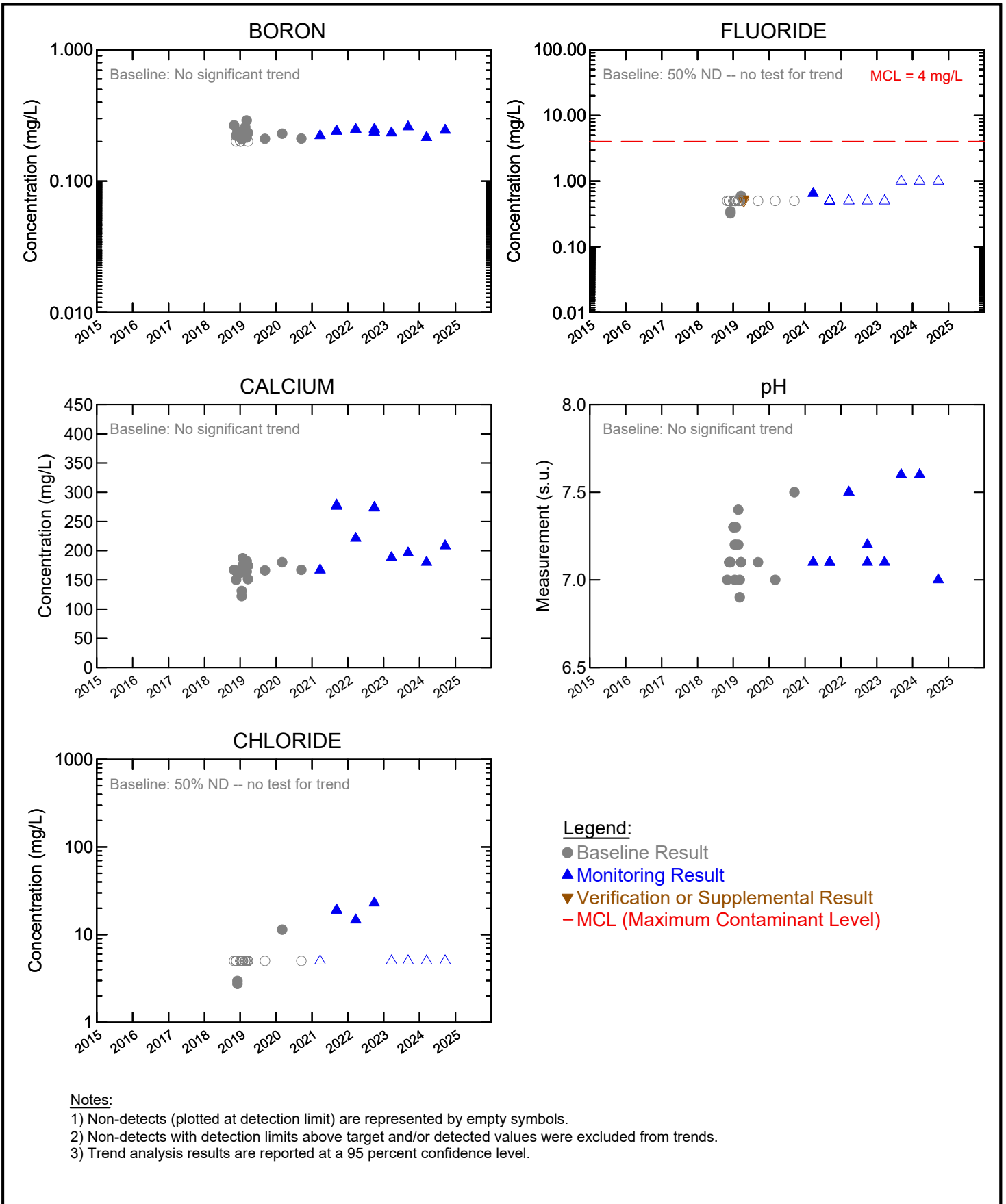


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 Date: Nov 14, 2024

**MW-17 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 11.e

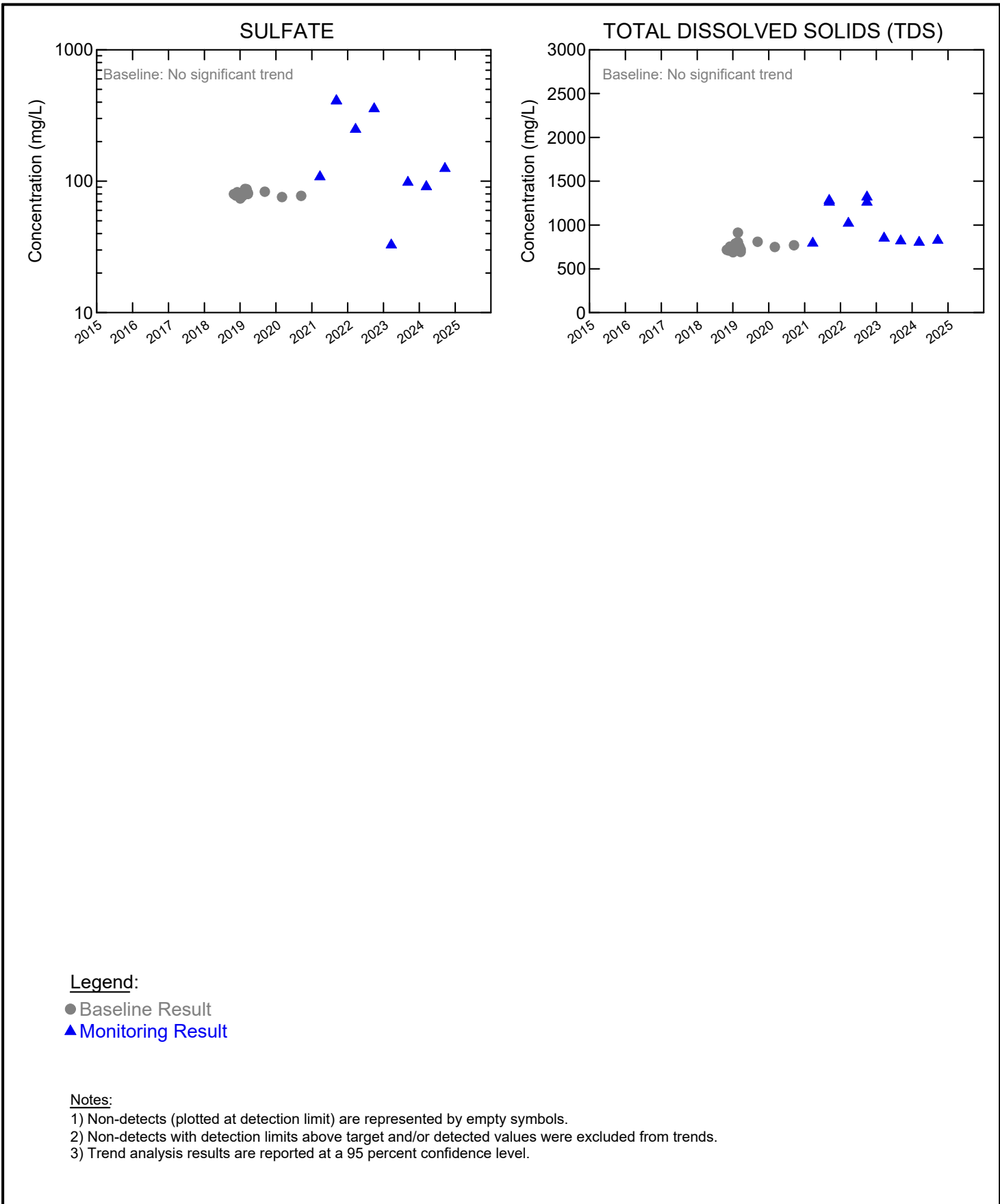


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 Date: Nov 14, 2024

**MW-18 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 12.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

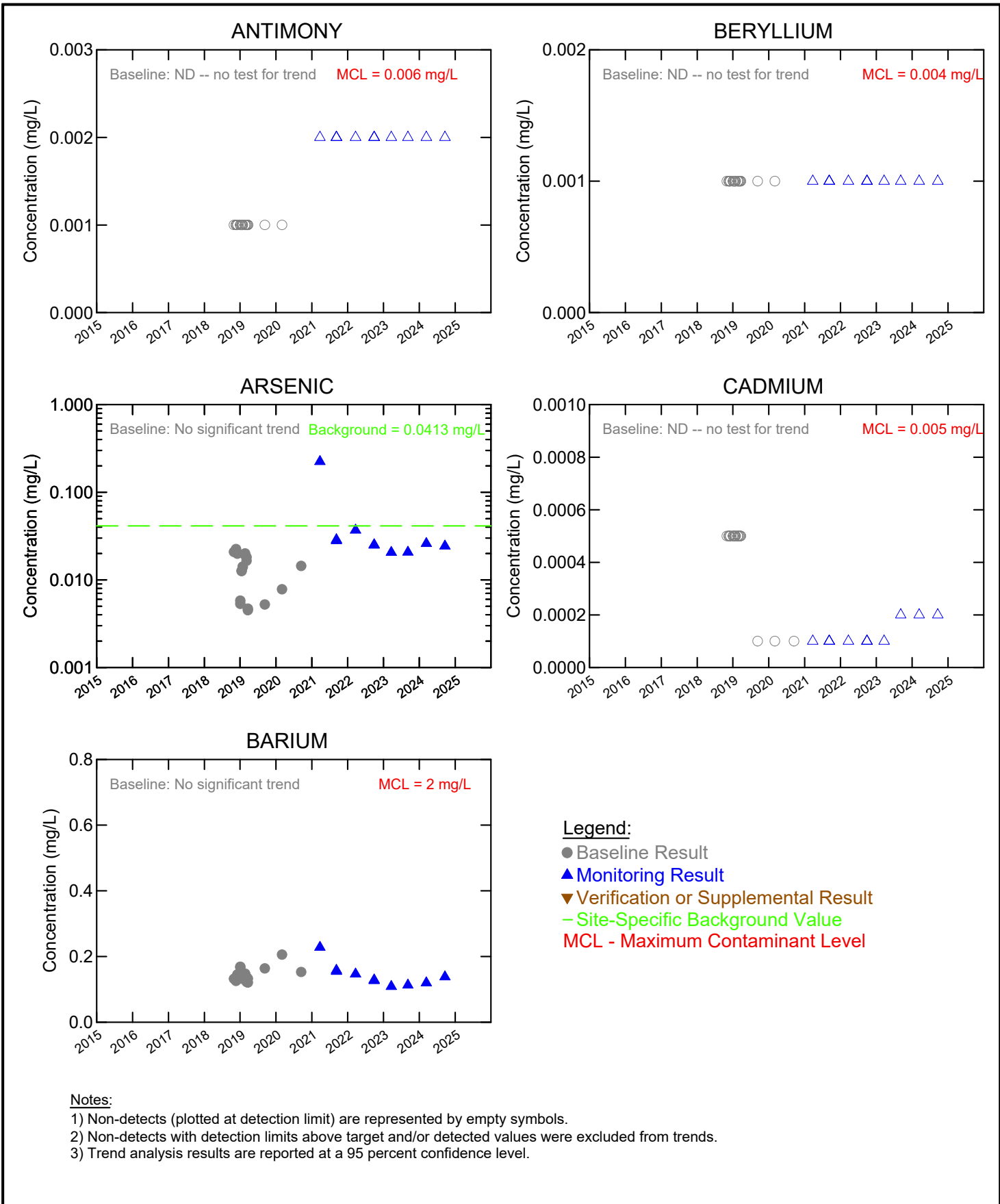


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 Date: Nov 14, 2024

**MW-18 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 12.b

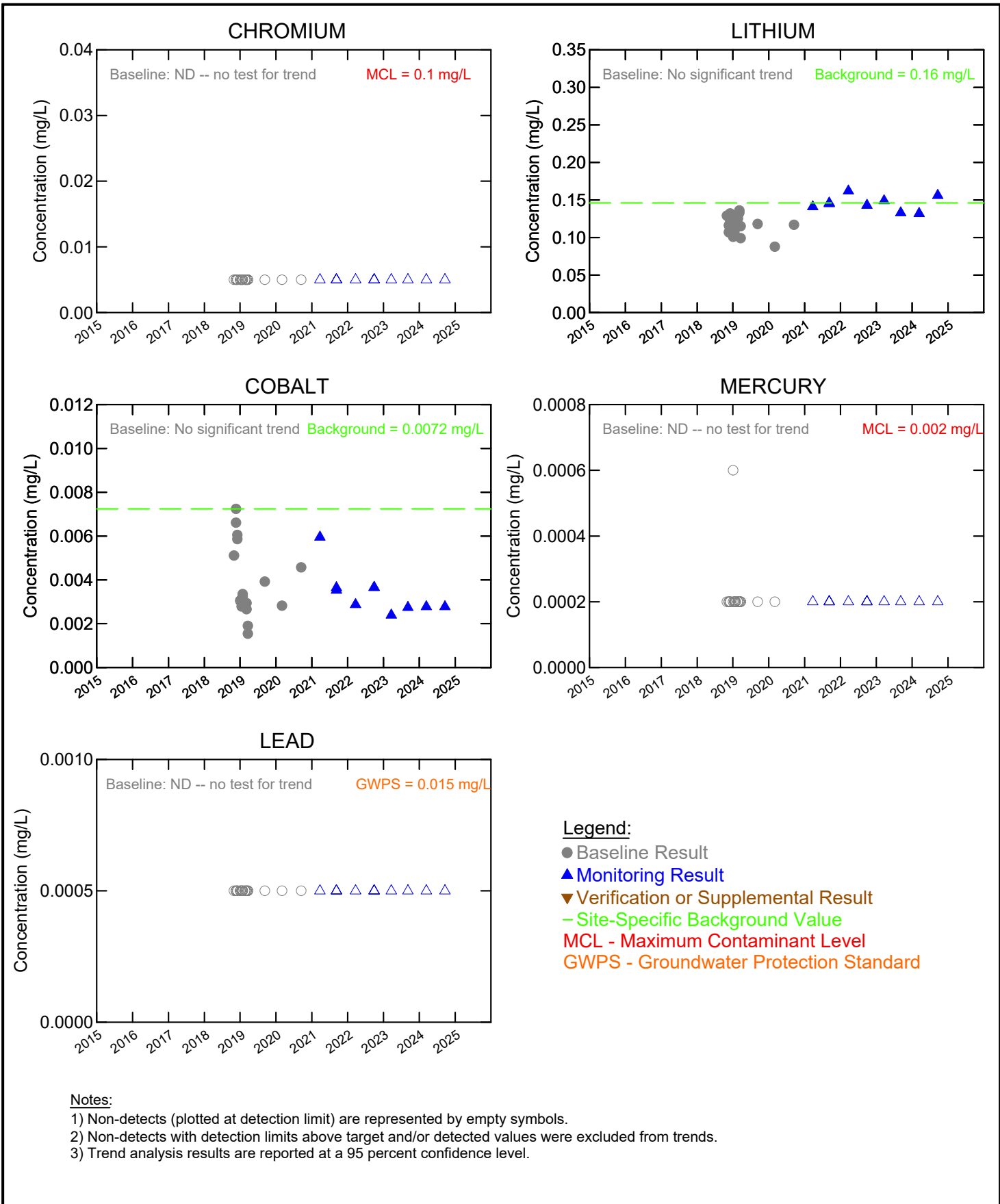


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 Date: Nov 28, 2024

**MW-18 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 12.c

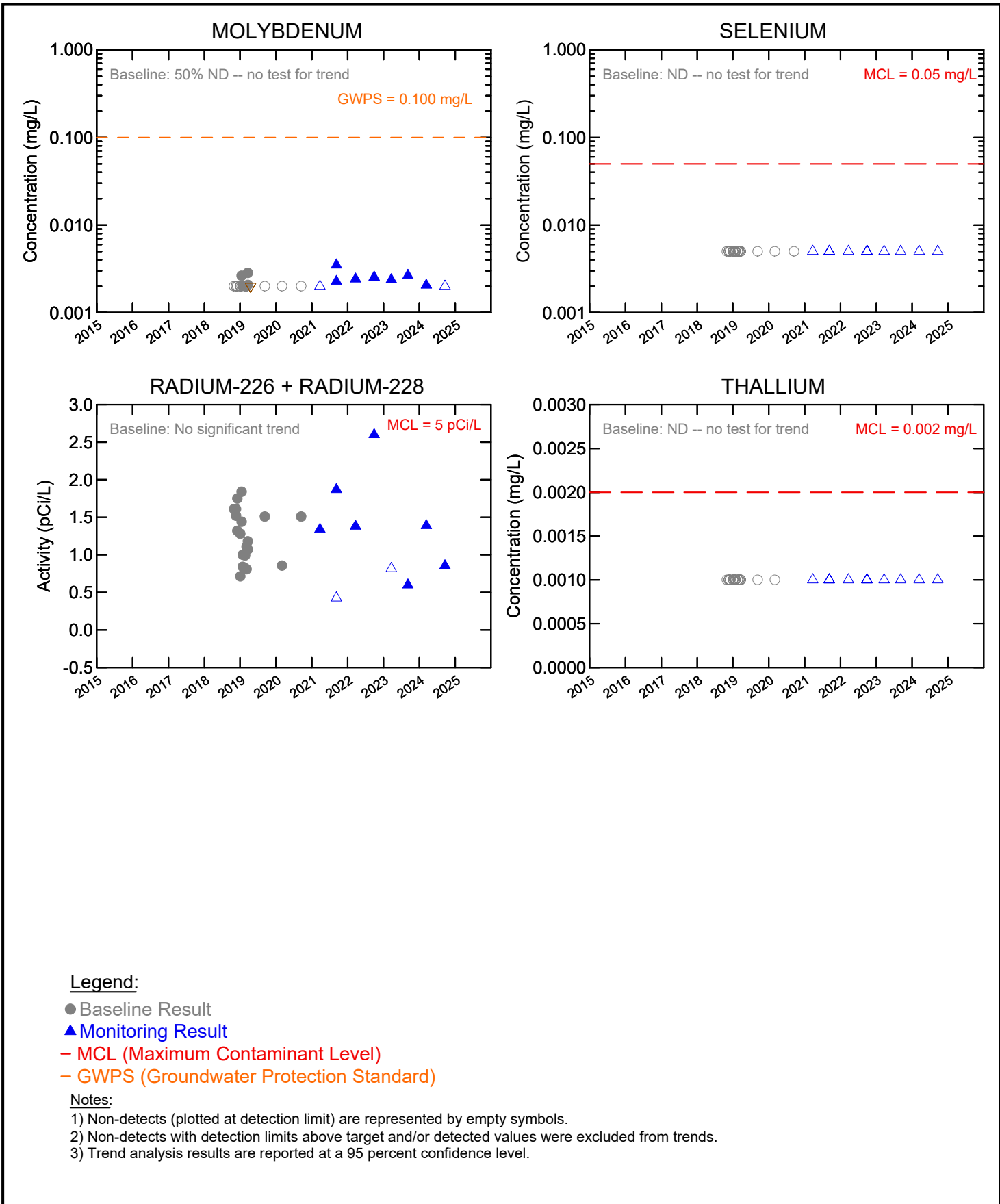


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Project No. 12576485
 Date: Nov 13, 2024

**MW-18 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 12.d

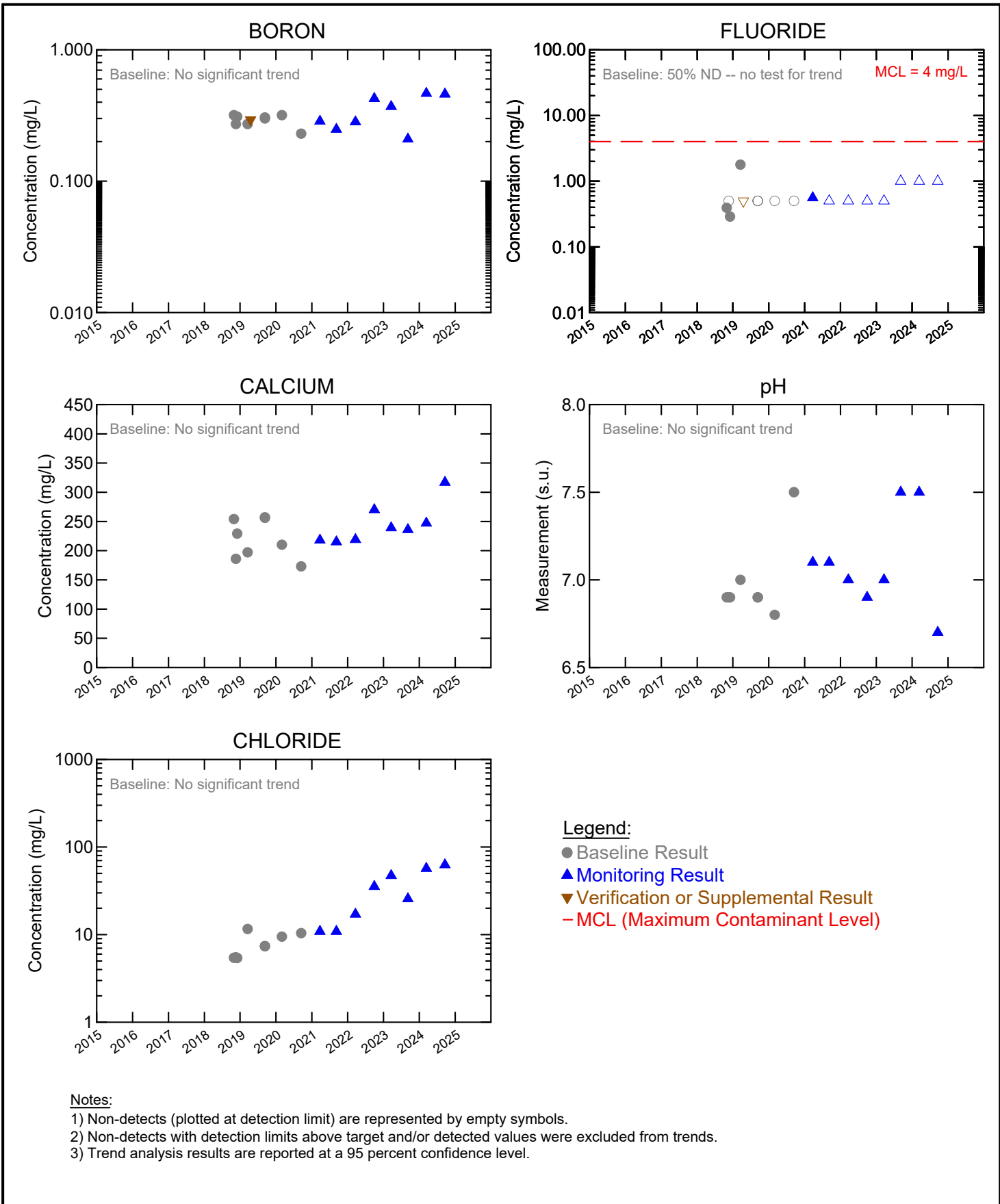


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Project No. 12576485
 Date: Nov 14, 2024

**MW-18 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 12.e



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

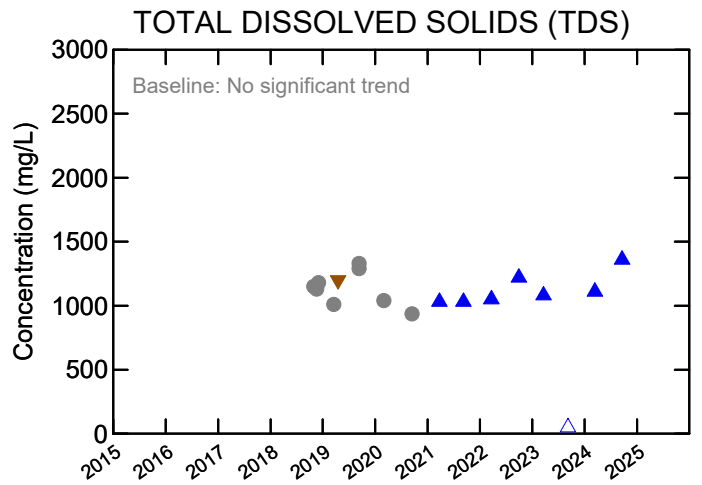
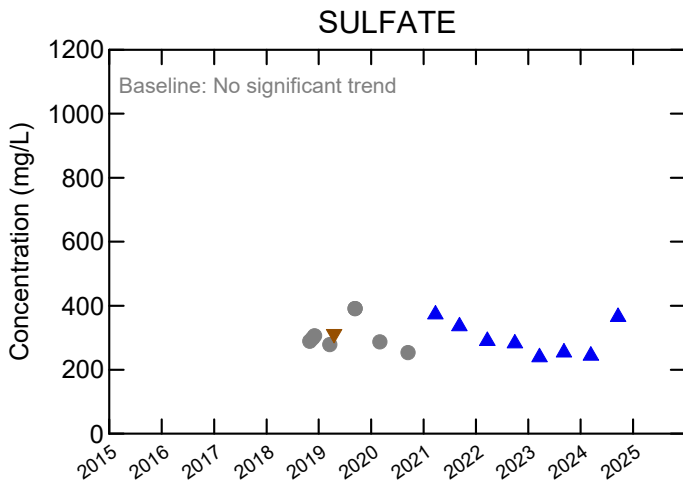


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**MW-19 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
 Date: Nov 14, 2024

FIGURE 13.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

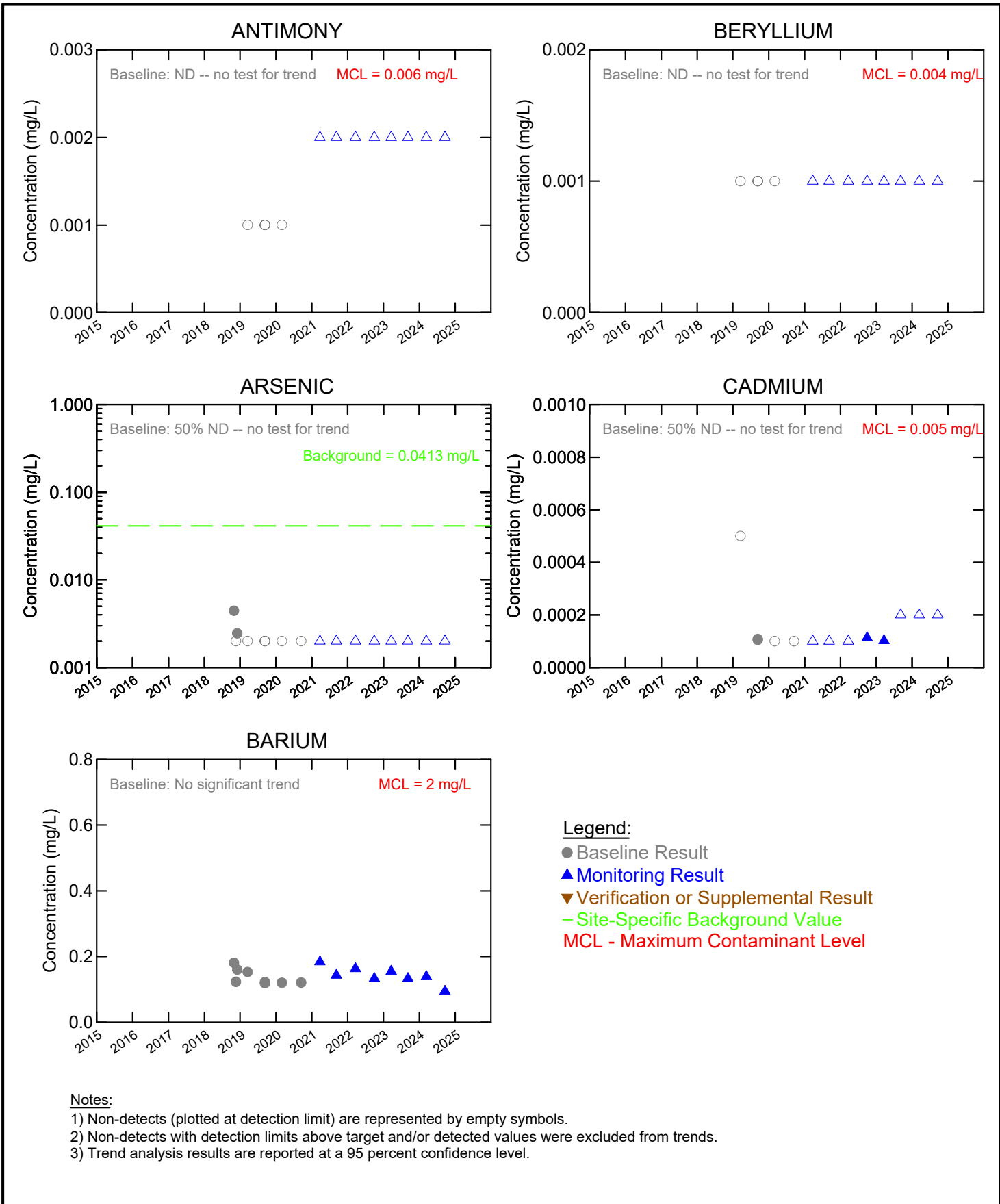


MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

**MW-19 -- APPENDIX III PARAMETERS
ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
Date: Nov 14, 2024

FIGURE 13.b

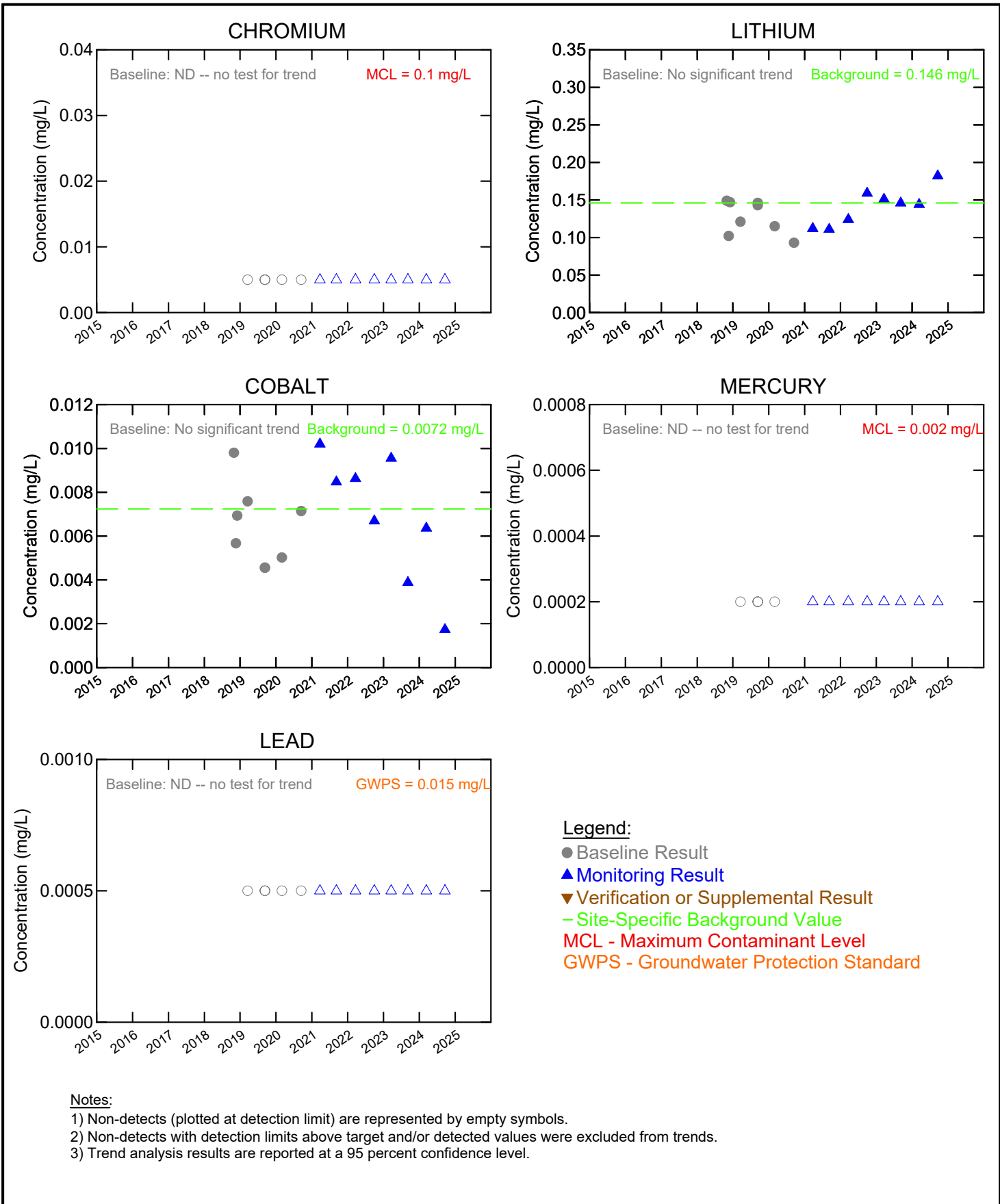


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 Date: Nov 28, 2024

**MW-19 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 13.c



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

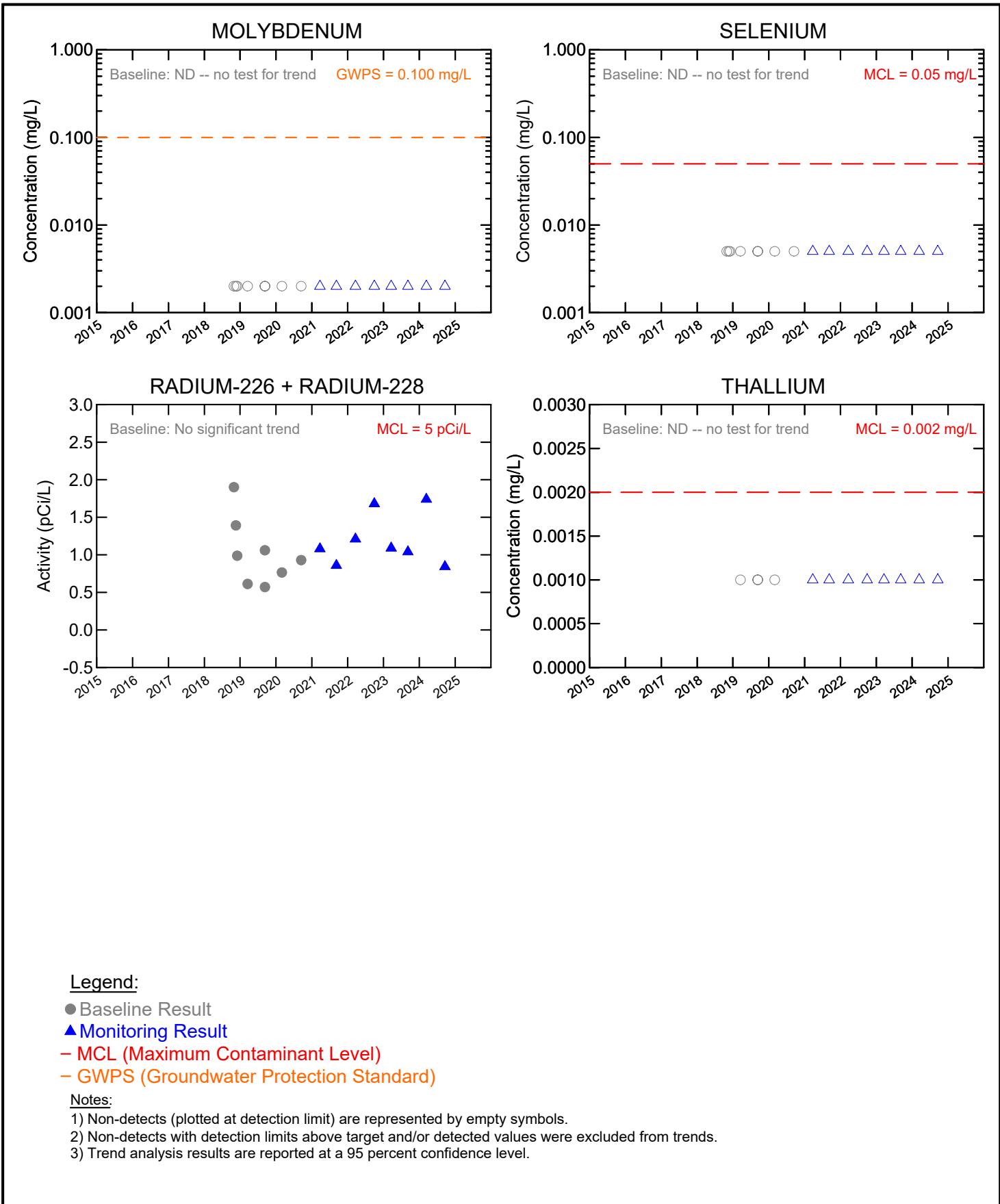


MidAmerican Energy Company
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**MW-19 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

Project No. 12576485
 Date: Nov 13, 2024

FIGURE 13.d



Legend:

- Baseline Result
- ▲ Monitoring Result
- MCL (Maximum Contaminant Level)
- GWPS (Groundwater Protection Standard)

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

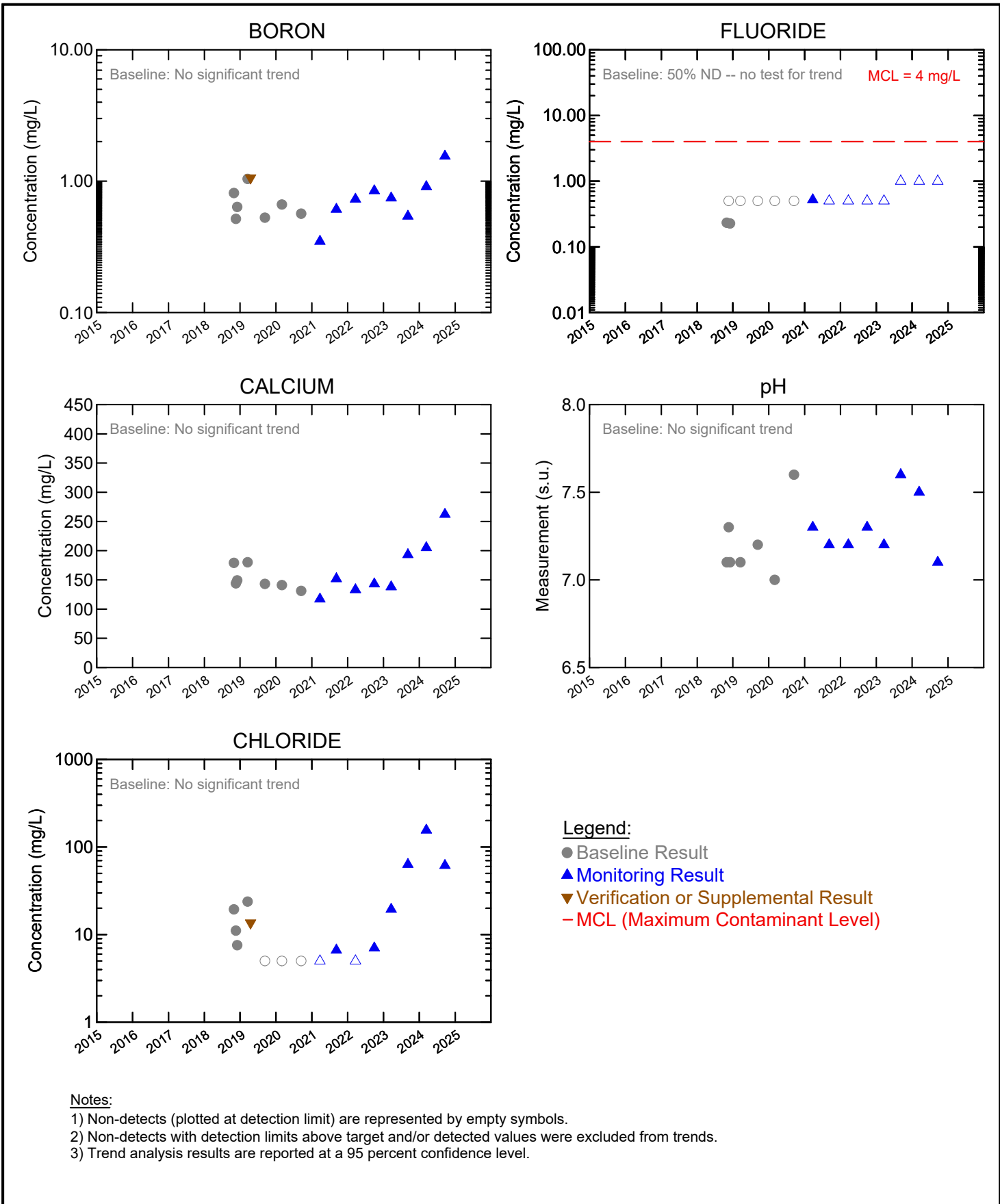


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 Salix, Iowa

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**MW-19 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 13.e

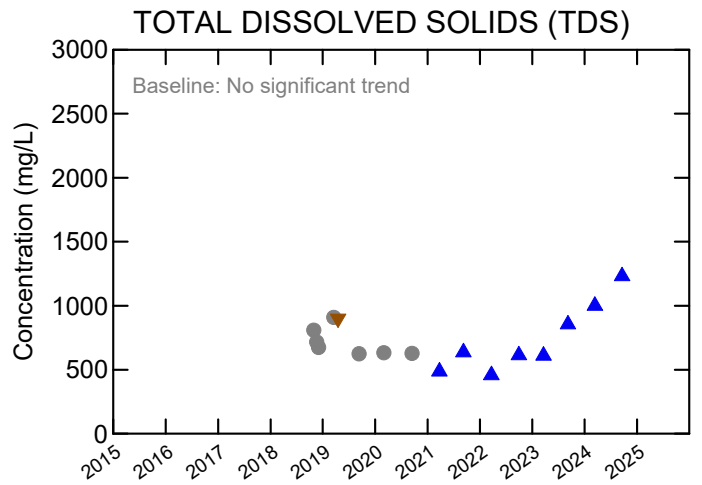
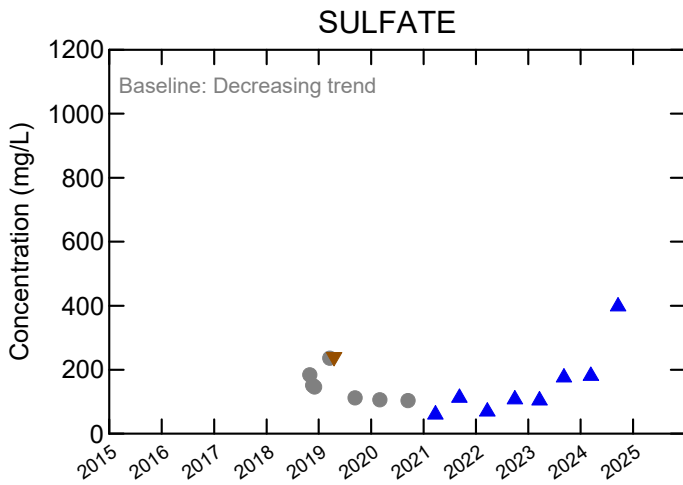


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 Date: Nov 14, 2024

**MW-20 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 14.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

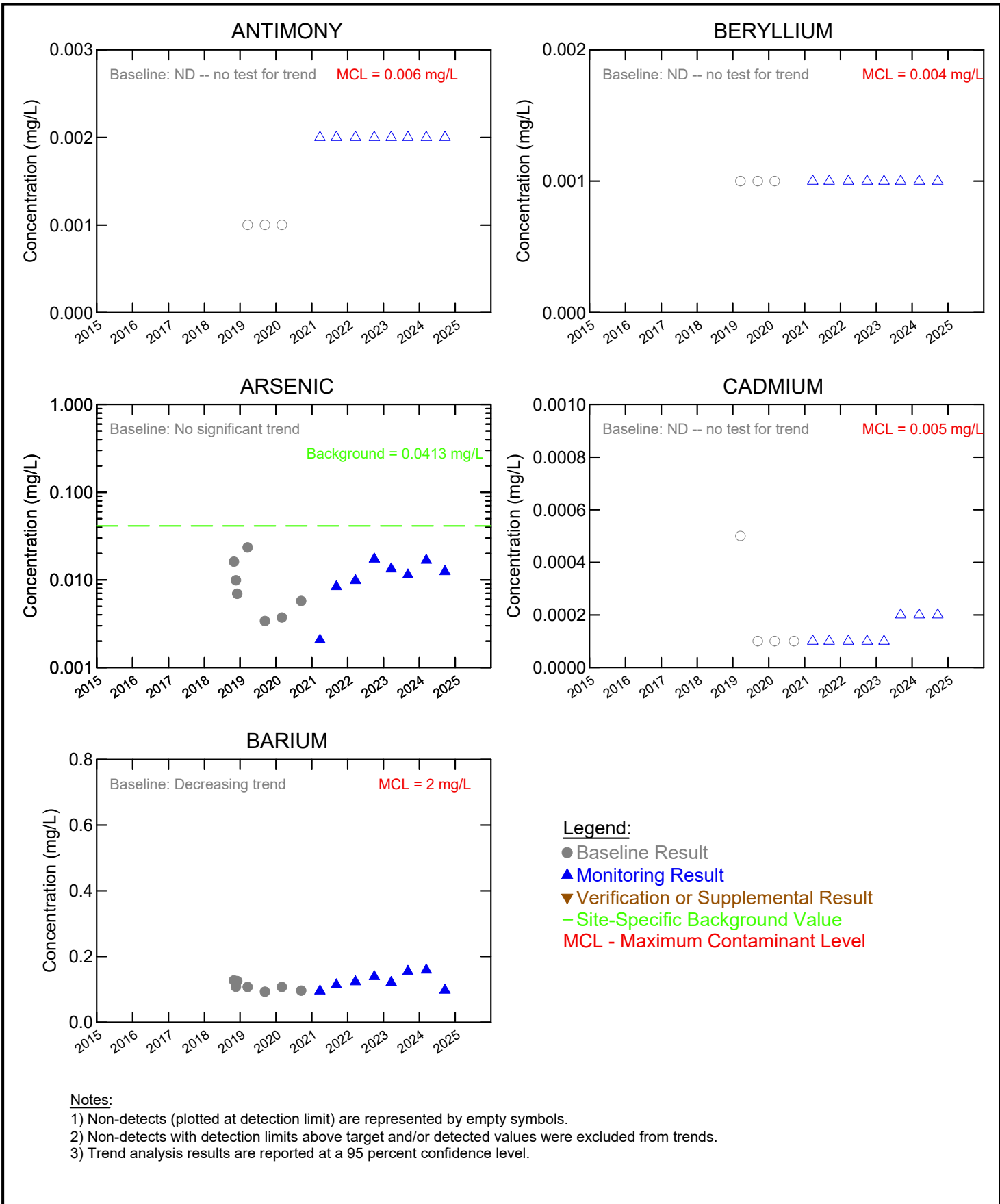


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Project No. 12576485
Date: Nov 14, 2024

**MW-20 -- APPENDIX III PARAMETERS
ANALYTE CONCENTRATION vs. TIME**

FIGURE 14.b



Notes:
 1) Non-detects (plotted at detection limit) are represented by empty symbols.
 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
 3) Trend analysis results are reported at a 95 percent confidence level.

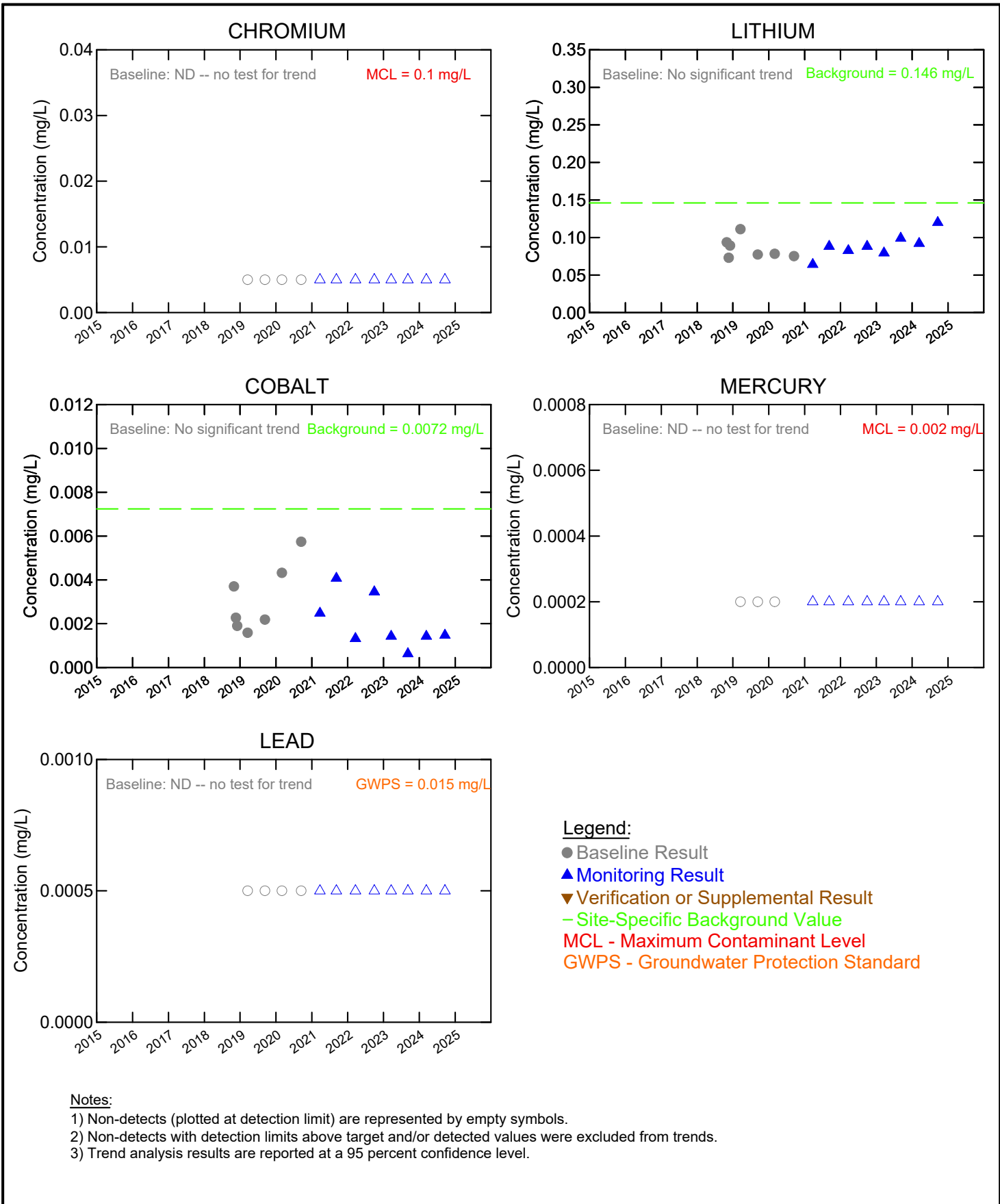


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 Date: Nov 28, 2024

**MW-20 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 14.c

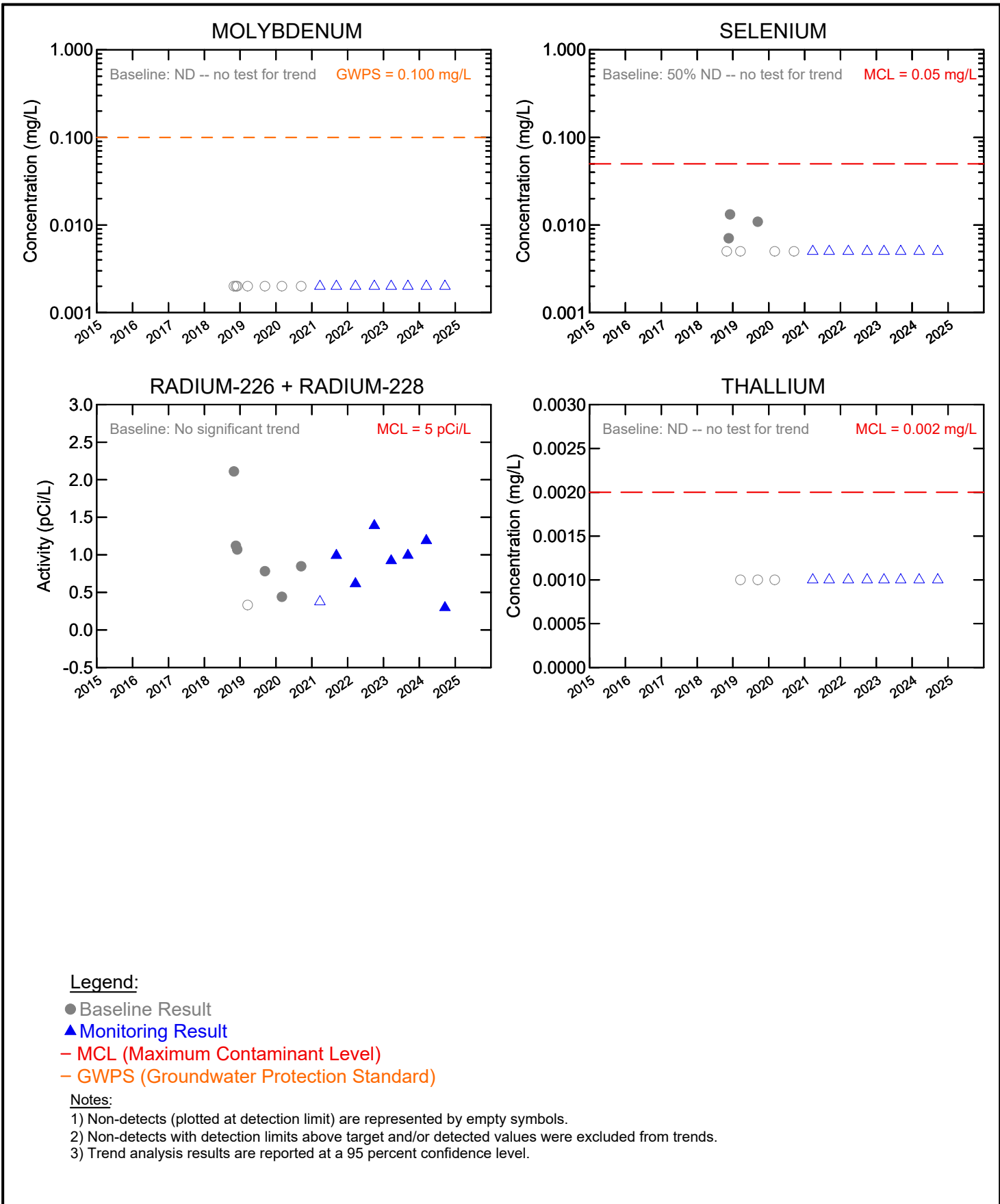


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 Date: Nov 13, 2024

**MW-20 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 14.d

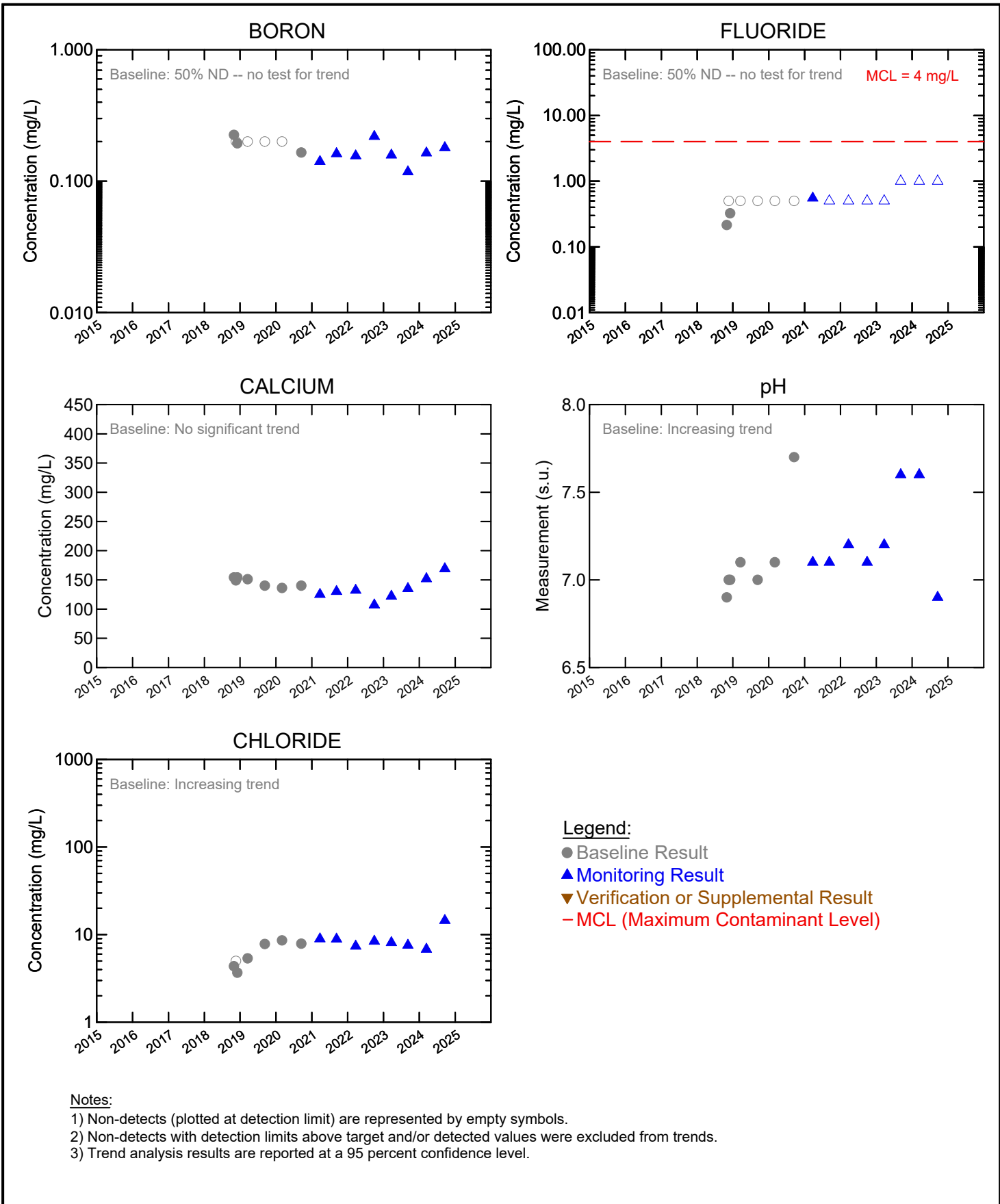


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 Date: Nov 14, 2024

**MW-20 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 14.e

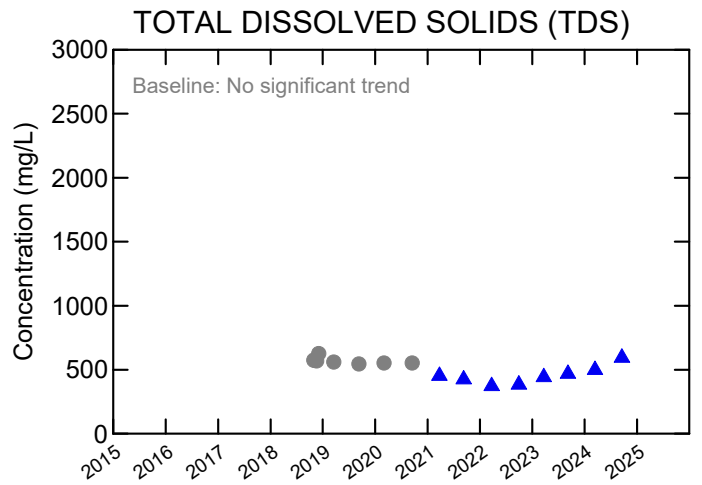
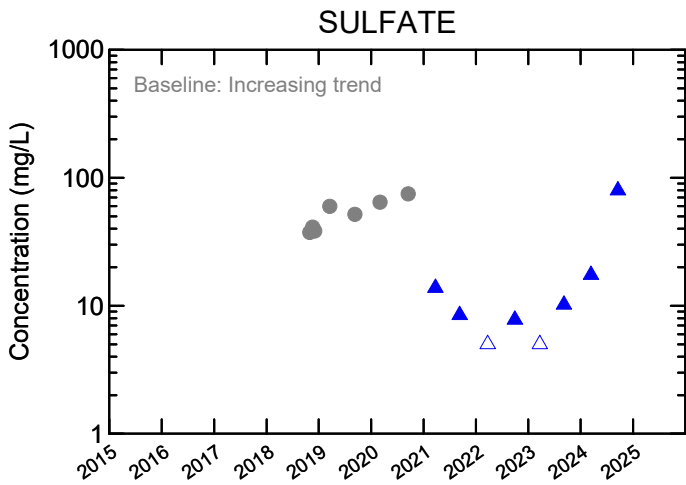


MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Project No. 12576485
 Date: Nov 14, 2024

**MW-21 -- APPENDIX III PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 15.a



Legend:

- Baseline Result
- ▲ Monitoring Result

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

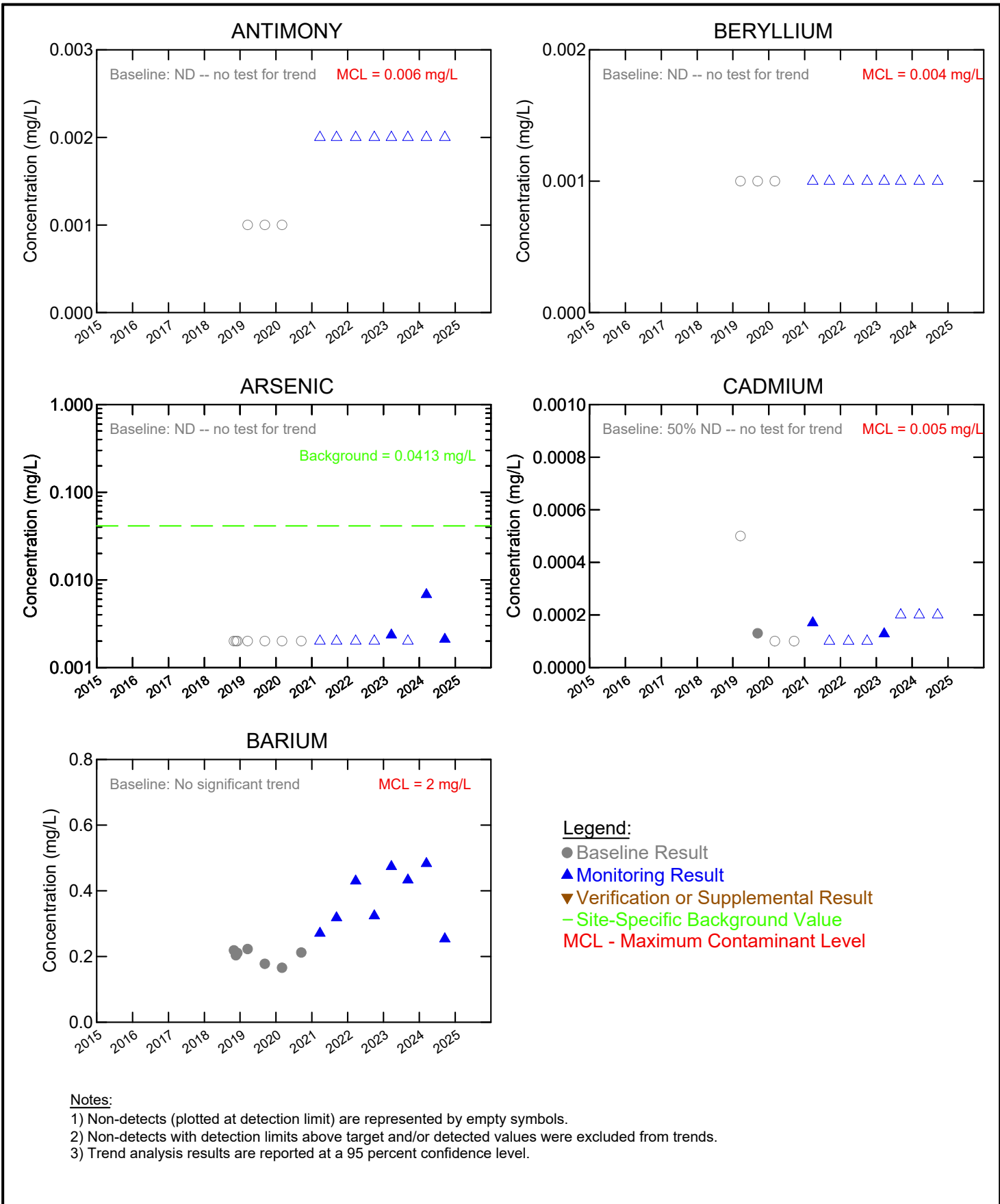


MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Project No. 12576485
Date: Nov 14, 2024

**MW-21 -- APPENDIX III PARAMETERS
ANALYTE CONCENTRATION vs. TIME**

FIGURE 15.b

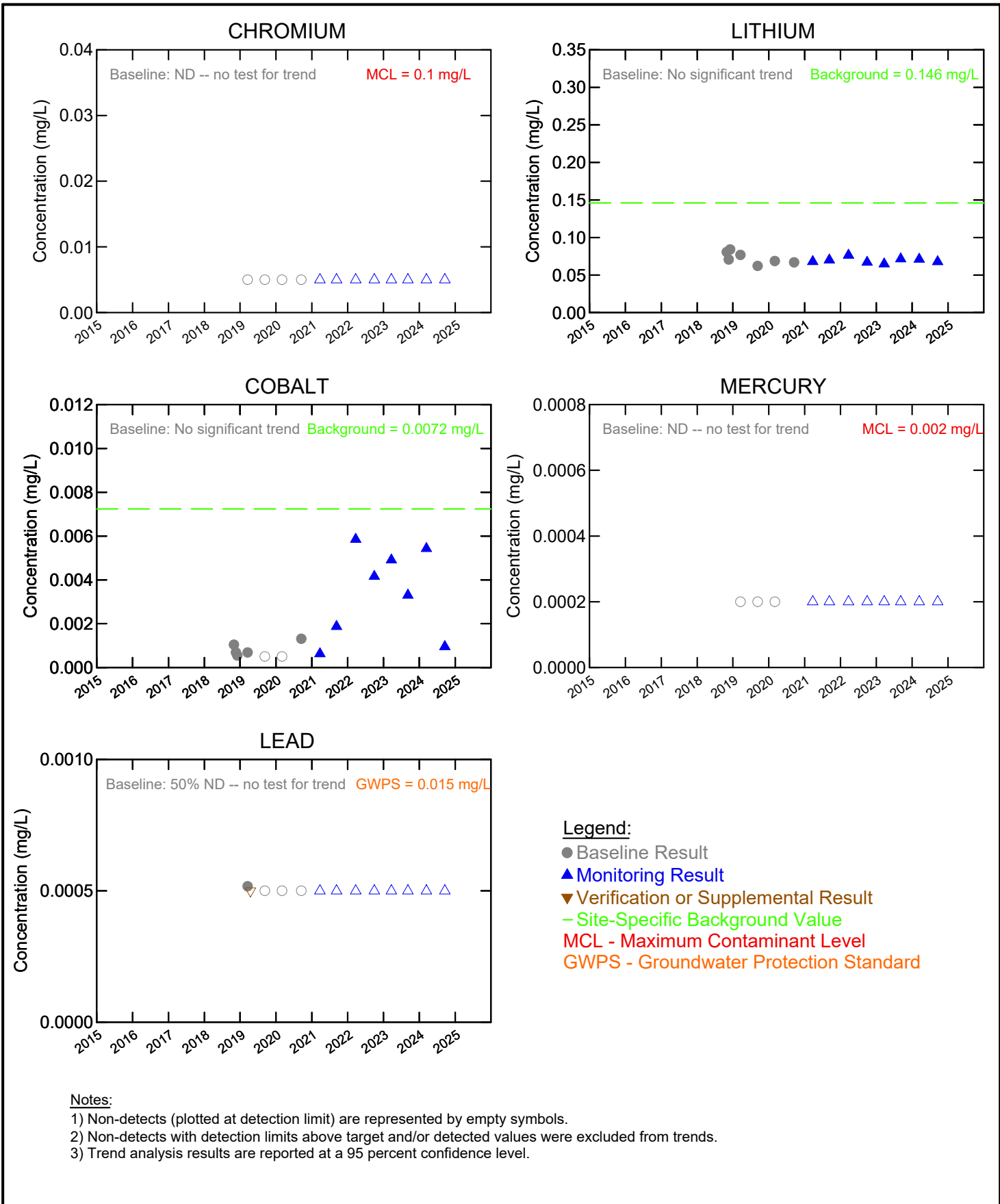


MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Project No. 12576485
 Date: Nov 28, 2024

**MW-21 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 15.c



Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.

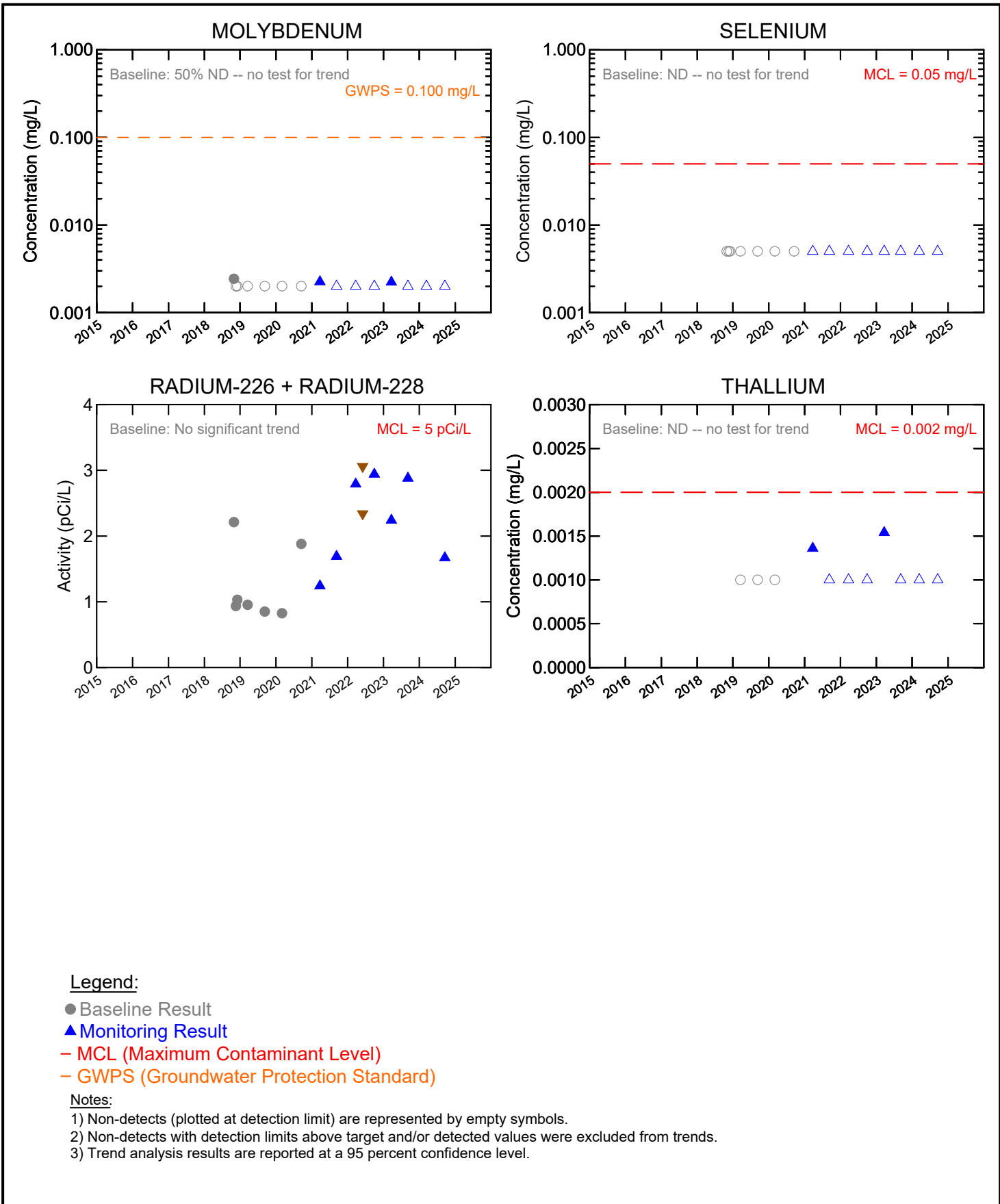


MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Project No. 12576485
 Date: Nov 13, 2024

**MW-21 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 15.d



Legend:

- Baseline Result
- ▲ Monitoring Result
- MCL (Maximum Contaminant Level)
- GWPS (Groundwater Protection Standard)

Notes:

- 1) Non-detects (plotted at detection limit) are represented by empty symbols.
- 2) Non-detects with detection limits above target and/or detected values were excluded from trends.
- 3) Trend analysis results are reported at a 95 percent confidence level.



MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

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**MW-21 -- APPENDIX IV PARAMETERS
 ANALYTE CONCENTRATION vs. TIME**

FIGURE 15.e

Appendix E

Groundwater Analytical Data Summary

Groundwater Analytical Data Summary
 MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Sample Location:	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2			
Sample ID:	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2			
Sample Date:	12/9/2015	3/1/2016	6/6/2016	9/20/2016	12/19/2016	2/20/2017	4/25/2017	7/5/2017	9/11/2017	4/18/2018	8/21/2018	9/4/2018	9/18/2018	12/4/2018	1/17/2019	3/19/2019	4/17/2019	9/11/2019	DP02-GW-0919	DP02-GW-0919	MW02-GW-1219	MW-2-GW-0320	DP-01-GW-0320	MW02-GW-0720	
	Site-Specific GWPS																								
Parameters	Units																				(Duplicate)	(Duplicate)			
Appendix III																									
Boron	mg/L	None	0.780	1.13	1.33	1.11	1.32	0.815	<0.200	<0.200	0.583	0.216	0.243	0.297	1.27	1.04	--	0.268	--	0.496	0.546	--	1.23	1.25	--
Calcium	mg/L	None	287	185	200	171	167	158	125	134	151	141	140	143	163	154	--	135	--	144	147	--	164	158	165
Chloride	mg/L	None	6.47	13.5	5.99	11.5	8.57	7.08	28.0	20.4	12.1	30.1 J	16.5	16.9	6.38	9.52	--	14.0	--	9.40	9.20	<5.00	7.05	6.18	--
Fluoride	mg/L	4.0	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	1.24	<0.500	<0.500	<0.500	<0.100	<0.100	<0.100	0.217	--	<0.500	--	<0.500	<0.500	--	<0.500	<0.500	--
pH, lab	s.u.	None	6.88 J	6.99 J	6.74 J	7.2 J	7.0 J	7.0 J	7.2 J	7.1 J	7.0 J	7.1 J	7.0 J	7.4 J	7.0 J	7.1 J	--	7.1 J	--	7.2 J	7.1 J	--	7.3 J	6.9 J	--
Sulfate	mg/L	None	360	182	178	98.3	105	70.0	49.9	48.0	82.3	51.2 J	52.7	48.6	89.8	91.1	--	35.5	--	54.3	55.2	--	70.6	68.3	110
Total dissolved solids (TDS)	mg/L	None	1280	864	848 J	760	768	734	588	1390	740	566	590	622	686	668	--	596	--	642	646	--	696	680	--
Appendix IV																									
Antimony	mg/L	0.006	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	--	--	--	--	--	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	--
Arsenic	mg/L	0.0413	0.0509	0.0632	0.0694	0.0539	0.0720	0.0386	0.0214	0.0156	--	0.0210	0.0201	0.0194	0.0245	0.0225	0.0310 J	0.108 J Dup 0.230 J	0.0484	0.0483	0.0474	0.0569	0.0580	0.0514	0.0724
Barium	mg/L	2.0	0.193	0.130	0.136	0.125	0.129	0.137	0.137	0.159	--	0.173	0.198	0.199	0.188	0.177	--	0.222	--	0.184	0.192	--	0.203	0.196	--
Beryllium	mg/L	0.004	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	--	--	--	--	--	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	--
Cadmium	mg/L	0.005	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	--	--	--	--	--	<0.000500	--	<0.000500	<0.000500	--	<0.000500	<0.000500	--
Chromium	mg/L	0.1	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	<0.00500	--	--	<0.00500	--	<0.00500	<0.00500	--	<0.00500	<0.00500	--
Cobalt	mg/L	0.00724	0.00331	0.00201	0.00159	0.00175	0.00198	0.00164	0.00144	0.00192	--	0.00204	0.00246	0.00271	0.00238	0.00255	--	0.00199	--	0.00170	0.00176	--	0.00200	0.00200	--
Lead	mg/L	0.015	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	--	--	--	--	--	<0.000500	--	<0.000500	<0.000500	--	<0.000500	<0.000500	--
Lithium	mg/L	0.146	0.131	0.100	0.108	0.0889	0.102	0.0821	0.0589	0.0739	--	0.0715	0.0708	0.0735	0.104	0.0974	--	0.0763	--	0.0737	0.0776	--	0.0863	0.0878	--
Mercury	mg/L	0.002	<0.000200	<0.000200	<0.000200	<0.000200 J	<0.000200	<0.000200	<0.000200	<0.000200	--	<0.000200	--	--	--	--	--	<0.000200	--	<0.000200	<0.000200	--	<0.000200	<0.000200	--
Molybdenum	mg/L	0.100	0.00266	0.00218	0.00243	0.00242	0.00269	0.00258	0.00200	<0.00200	--	0.00211	<0.00200	<0.00200	0.00233	<0.00200	--	<0.00200	--	0.00229	0.00246	--	0.00246	0.00227	--
Radium-226 & 228	pCi/L	5	0.234 U	0.360 U	0.896	0.575	0.791	0.164 U	<0.239	0.597	--	0.501	0.829	--	--	--	--	0.638	--	<0.476	0.960	--	0.697	0.718	--
Selenium	mg/L	0.05	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	0.00599	<0.00500	--	<0.00500	--	<0.00500	<0.00500	--	<0.00500	<0.00500	--
Thallium	mg/L	0.002	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	--	--	--	--	--	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	--
Other																									
Aluminum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0314	--	0.0379	0.0374	0.0467	--	--	--	--
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0181	--	--	--	--	--	--	--
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.002 J	--	--	--	--	--	--	--
Copper	mg/L	<0.00200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	mg/L	24.2	23.1	25.9	23.7	--	18.8	7.83	8.18	15.8	--	10.7	10.3	9.90	10.4	14.6	--	--	--	17.9	17.6	19.2	--	--	--
Iron (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14.7	--	--	--	14.8	14.7	18.0	--	--	--
Magnesium	mg/L	95.9	59.9	63.0	53.0	50.1	54.5	41.5	45.2	53.3	47.4	47.2	47.3	51.5	47.3	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	2.86	1.89	1.66	1.66	2.10	1.39	1.04	1.17	1.25	1.32	1.30	1.48	1.39	1.58	--	--	--	--	--	--	--	--	--	--
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	9.67	8.28	7.37	7.56	7.54	7.54	6.87	6.58	--	7.58	7.04	7.12	7.92	7.44	--	--	--	--	--	--	--	--	--	--
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	27.4	23.9	23.9	23.6	20.7	22.3	17.6	16.6	20.7	19.2	20.8	20.4	27.5	22.9	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	0.165	0.117	0.213	0.234	0.387 U	0.0886 U	0.102	0.168	--	0.178	0.371	--	--	--	--	--	0.164 J	--	<0.112	0.248	--	0.158	0.188	--
Radium-228	pCi/L	0.0686 U	0.242 U	0.683	0.341 U	0.403 U	0.0752 U	<0.136	0.429	--	<0.324	0.457	--	--	--	--	--	0.475	--	<0.364	0.712	--	0.539	0.530	--
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, bicarbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, carbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	536	--	--	--	--	579	584	--	--	--	--
Ammonia-N	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	1.08	--	--	--	--	--	--	--	--	--	--
Hardness	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate (as N)	mg/L	<2.00 J	<0.500 J	0.749 J	<0.500 J	<0.500 J	2.42 J	<0.500 J	<0.500 J	<0.500 J	<0.500 J	0.872 J	<0.100	<0.100	<0.100	0.506	--	--	--	--	--	--	--	--	--
Nitrite (as N)	mg/L	--	<0.500 J	<0.500 J	--	--	--	--	--	--	--	--	<0.100	<0.100	<0.100	<0.100	--	--	--	--	--	--	--	--	--
Silica (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC average duplicates	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total kjeldahl nitrogen (TKN)	mg/L	--	--	--	--	--	--	--	--	--	--	--	1.49	1.22	1.84 J-	1.75	--	--	--	--	--	--	--	--	--
Total nitrogen	mg/L	--	--	--																					

Appendix E
Groundwater Analytical Data Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Sample Location:	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2		
Sample ID:	DP01-GW-0720	MW2-GW-0920	DP02-GW-0920	MW02-GW-1020	MW02-GW-1120	MW02-GW-0321	DP01-GW-0321	MW02-GW-0621	DP01-GW-0621	MW02-GW-0921	MW02-GW-0322	DP01-GW-0322	MW02-GW-0622	DP01-GW-0622	MW02-GW-0922	DP01-GW-0922	MW02-GW-0323	DP01-GW-0323	MW02-GW-0923	DP01-GW-0923	
Sample Date:	7/28/2020	9/15/2020	9/15/2020	10/21/2020	11/17/2020	3/23/2021	3/23/2021	6/23/2021	6/23/2021	9/9/2021	3/22/2022	3/22/2022	6/2/2022	6/2/2022	9/27/2022	9/27/2022	3/22/2023	3/22/2023	9/6/2023	9/6/2023	
	(Duplicate)		(Duplicate)				(Duplicate)		(Duplicate)			(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)	
Parameters	Units																				
Appendix III																					
Boron	mg/L	--	0.663	0.642	--	--	0.727	0.653	--	--	0.170	0.585	0.589	0.253	0.256	0.287	0.314	0.503	0.526	0.315 J	0.179 J
Calcium	mg/L	169	172	167	163	163	150	147	147	146	135	149	153	--	--	168	170	155	154	170	189
Chloride	mg/L	--	8.45	8.28	--	--	22.7	22.2	--	--	58.7	35.2	35.5	--	--	22.4	23.3	15.6	15.3	6.73	7.07
Fluoride	mg/L	--	<0.500	<0.500	--	--	0.664	0.606	--	--	<0.500	<0.500	<0.500	--	--	<0.500	<0.500	<0.500	<0.500	<1.00	<1.00
pH, lab	s.u.	--	7.0 J	7.2 J	--	--	7.1 J	7.1 J	--	--	7.2 J	7.1 J	7.1 J	--	--	7.1 J	7.2 J	7.3 J	7.3 J	7.5 J	7.7 J
Sulfate	mg/L	108	77.5	77.1	109	86.7	71.1	69.8	65.2	62.9	55.0	129	132	--	--	65.0	65.7	121	121	97.3	95.0
Total dissolved solids (TDS)	mg/L	--	756	738	--	--	632	630	--	--	544	634	632	--	--	668	678	690	668	684	698
Appendix IV																					
Antimony	mg/L	--	--	--	--	--	<0.00200	<0.00200	--	--	<0.00200	<0.00200	<0.00200	--	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	0.0744	0.119	0.112	0.157	0.0992	0.0856	0.0788	0.0792	0.0797	0.0469	0.0348	0.0350	--	--	0.0276	0.0296	0.0135	0.0138	0.0170 J	0.0101 J
Barium	mg/L	--	0.217	0.210	--	--	0.191	0.186	--	--	0.177	0.205	0.209	--	--	0.227	0.232	0.153	0.151	0.217	0.229
Beryllium	mg/L	--	--	--	--	--	<0.00100	<0.00100	--	--	<0.00100	<0.00100	<0.00100	--	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	--	<0.000100	<0.000100	--	--	<0.000100	<0.000100	--	--	<0.000100	<0.000100	0.000107	--	--	<0.000100	<0.000100	<0.000100	<0.000100	<0.000200	<0.000200
Chromium	mg/L	--	<0.00500	<0.00500	--	--	<0.00500	<0.00500	--	--	<0.00500	<0.00500	<0.00500	--	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	--	0.00162	0.00162	--	--	0.00125	0.00132	--	--	0.00132	0.00168	0.00170	--	--	0.00223	0.00219	0.00325	0.00323	0.00301 J	0.00158 J
Lead	mg/L	--	<0.000500	<0.000500	--	--	<0.000500	<0.000500	--	--	<0.000500	<0.000500	<0.000500	--	--	<0.000500	<0.000500	<0.000500	<0.000500	0.000513	<0.000500
Lithium	mg/L	--	0.0807	0.0805	--	--	0.0903	0.0845	--	--	0.0664	0.0907	0.0908	--	--	0.0828	0.0845	0.0785	0.0848	0.0824	0.0971
Mercury	mg/L	--	--	--	--	--	<0.000200	<0.000200	--	--	<0.000200	<0.000200	<0.000200	--	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	--	0.00206	<0.00200	--	--	0.00207	0.00214	--	--	0.00224	<0.00200	<0.00200	--	--	0.00225	<0.00200	<0.00200	<0.00200	0.00256	<0.00200
Radium-226 & 228	pCi/L	--	0.832	1.00	--	--	0.600	0.566	--	--	1.21	0.919	0.919	--	--	1.69	0.710	0.973	0.970	0.987	0.987
Selenium	mg/L	--	<0.00500	<0.00500	--	--	<0.00500	<0.00500	--	--	<0.00500	<0.00500	<0.00500	--	--	<0.00500	<0.00500	0.0202	0.0195	<0.00500	<0.00500
Thallium	mg/L	--	--	--	--	--	<0.00100	<0.00100	--	--	<0.00100	<0.00100	<0.00100	--	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 J	<0.00100 J
Other																					
Aluminum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	--	0.453	0.335	--	--	0.267	0.185	--	--	0.430	0.240	0.262	--	--	0.330	0.269	0.240	<0.157	0.218	0.259
Radium-228	pCi/L	--	<0.379	0.667	--	--	<0.333	<0.381	--	--	0.784	<0.470	0.657	--	--	1.36	1.25	0.733	<0.596	0.692	0.728
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, bicarbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, carbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia-N	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate (as N)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite (as N)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC average duplicates	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total kjeldahl nitrogen (TKN)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total nitrogen	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total suspended solids (TSS)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix E

Groundwater Analytical Data Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Sample Location:	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	
Sample ID:	MW04-GW-0622	MW04-GW-0922	MW04-GW-0323	MW04-GW-0923	MW04-GW-0324	MW04-GW-0924	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	
Sample Date:	6/2/2022	9/28/2022	3/21/2023	9/7/2023	3/12/2024	9/18/2024	12/9/2015	2/29/2016	6/6/2016	9/19/2016	12/19/2016	2/21/2017	4/24/2017	7/5/2017	9/11/2017	1/30/2018	1/30/2018	4/18/2018	8/21/2018	3/18/2019	4/16/2019	9/10/2019	3/3/2020	9/15/2020		
		(Duplicate)																								
Parameters	Units																									
Appendix III																										
Boron	mg/L	0.317	0.263	0.243	0.228	0.223	0.222	3.44	4.01	1.23	4.91	5.38	4.00	0.712	0.703	2.80	--	--	0.999	1.14	2.47	1.45	1.61	2.71	3.14	
Calcium	mg/L	--	145	134	123	125	119	212	204	213	187	198	190	196	167	208	--	--	171	153	163	--	159	150	161	
Chloride	mg/L	--	27.1	7.80	26.9	29.6	32.6	5.07	5.90	<5.00	<5.00	<5.00	8.69	5.30	<5.00	5.60	--	--	8.23 J	4.80	7.19	--	6.70	13.3	7.99	
Fluoride	mg/L	--	<0.500	<0.500	<1.00	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	<0.500	2.31	<0.500	<0.500	<0.500	--	--	<0.500	<1.00	<0.500	--	<0.500	<0.500	<0.500	
pH, lab	s.u.	--	7.2 J	7.2 J	7.6 J	7.5 J	7.1 J	7.08 J	7.23 J	7.04 J	7.4 J	7.3 J	7.2 J	7.2 J	7.1 J	7.2 J	7.1 J	7.3 J	7.2 J	--	--	--	7.3 J	7.5 J	7.3 J	
Sulfate	mg/L	--	157	41.9	123	143	123	694	734	313	803	819	690	224	169	489	--	--	190 J	198	375	216	246	469	349	
Total dissolved solids (TDS)	mg/L	--	764	702	696	596	574	1590	1700	1060 J	1730	1790	1810	1160	1000	1610	--	--	870	920	1200	980	974	1120	1100	
Appendix IV																										
Antimony	mg/L	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	--	--	<0.00100	--	<0.00100	--	<0.00100	<0.00100	--	
Arsenic	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	--	--	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200	<0.00200	
Barium	mg/L	0.0824	0.0711	0.0607	0.0639	0.0578 J	0.111	0.0862	0.0926	0.0731	0.0736	0.0596	0.0751	0.0778	--	--	--	--	0.0714	0.0782	0.0705	--	0.0819	0.0697	0.0791	
Beryllium	mg/L	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	--	--	--	<0.00100	--	<0.00100	--	<0.00100	<0.00100	--	
Cadmium	mg/L	--	<0.000100	0.000196	<0.000200	<0.000200	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	--	<0.000500	--	<0.000500	--	<0.000500	<0.000500	<0.000500	
Chromium	mg/L	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	--	<0.00500	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	
Cobalt	mg/L	--	0.00311	0.00282	0.00262	0.00196	0.00200	0.00253	0.00344	0.00303	0.00248	0.00272	0.00211	0.00287	0.00313	--	--	--	0.00351	0.00297	0.00256	--	0.00276	0.00192	0.00395	
Lead	mg/L	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	--	--	<0.000500	<0.000500	<0.000500	--	<0.000500	<0.000500	<0.000500	
Lithium	mg/L	--	0.0780	0.0714	0.0555	0.0639	0.0572	0.0950	0.0743	0.106	<0.0500	0.0585	0.0684	0.111	0.103	--	--	--	0.104	0.0909	0.0850	--	0.0884	0.0563	0.0720	
Mercury	mg/L	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	--	--	--	<0.000200	--	<0.000200	--	<0.000200	<0.000200	--	
Molybdenum	mg/L	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.00589	0.0565	0.0184	0.143	0.0895	0.0398	0.0241	0.0165	--	--	--	0.0233	0.00976	0.0355	0.0178	0.0135	0.0303	0.0311	
Radium-226 & 228	pCi/L	0.652	1.42	0.777	0.893	0.130	0.535	0.290 U	0.644	0.641	0.657	0.377 U	<0.0102	0.959	--	--	--	--	0.481	0.722	0.410	--	0.589	<0.315	0.932	
Selenium	mg/L	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0985	0.0620	<0.00500	0.0672	0.00768	<0.00500	<0.00500	<0.00500	--	--	--	0.00590	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	
Thallium	mg/L	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	--	--	<0.00100	--	<0.00100	--	<0.00100	<0.00100	--	
Other																										
Aluminum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Arsenic (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Copper	mg/L	--	--	--	--	--	--	<0.00200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	--	--	--	--	--	
Iron	mg/L	--	--	--	--	--	--	<0.100	<0.100	1.50	<0.100	<1.00	0.469	0.733	1.25	1.27	--	--	--	2.83	--	--	--	--	--	
Iron (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Magnesium	mg/L	--	--	--	--	--	35.3	31.2	46.9	25.3	28.0	39.6	57.5	51.1	60.3	--	--	--	48.6	45.5	--	--	--	--	--	
Manganese	mg/L	--	--	--	--	--	1.28	1.96	2.16	1.56	2.05	1.75	3.81	3.29	3.06	--	--	--	3.47	3.02	--	--	--	--	--	
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Potassium	mg/L	--	--	--	--	--	20.1	19.5	12.5	18.9	19.2	16.0	10.4	8.11	--	--	--	--	10.5	6.56	--	--	--	--	--	
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sodium	mg/L	--	--	--	--	--	220	241	93.2	296	305	238	84.5	89.9	188	--	--	--	99.3	98.0	--	--	--	--	--	
Radium-226	pCi/L	0.141	<0.0532	<0.173	<0.113	<0.110	0.0976	0.108	0.181	0.308	0.251	0.165 U	0.139	<0.0459	0.184	--	--	--	0.185	0.300	0.135 J	--	<0.0953	<0.0985	0.262	
Radium-228	pCi/L	0.511	1.36	<0.604	0.779	<0.478	0.0328	0.428	0.109 U	0.336 U	0.390 U	0.493 U	0.239 U	<0.0356	0.776	--	--	--	<0.297	0.422	<0.275	--	0.493	<0.217	0.670	
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Alkalinity, bicarbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Alkalinity, carbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Ammonia-N	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Hardness	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Nitrate (as N)	mg/L	--	--	--	--	--	6.68 J	0.807 J	<0.500 J	0.525 J	<0.500 J	<0.500 J	<0.500	<0.500 J	<0.500 J	--	--	--	0.744 J	0.116 J	--	--	--	--	--	
Nitrite (as N)	mg/L	--	--	--	--	--	--	<0.500 J	<0.500 J	--	--	--	--	--	--	--	--	--	--	<0.100	--	--	--	--	--	
Silica (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
TOC average duplicates	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Total kjeldahl nitrogen (TKN)	mg/L	--																								

Groundwater Analytical Data Summary
 MidAmerican Energy Company
 Neal South CCR Monofill
 Salix, Iowa

Sample Location:	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10					
Sample ID:	MW-10	DP-01	MW-10	MW-10	MW-10	MW10-GW-0919	MW10-GW-1219	MW-10-GW-0320	DP-02-GW-0320	MW10-GW-0720	MW10-GW-0920	MW10-GW-1020	MW-10-GW-1120	MW10-GW-0621	MW10-GW-0921	MW10-GW-0322	MW10-GW-0922	MW10-GW-0323	MW10-GW-0923	MW10-GW-0324	MW10-GW-0924					
Sample Date:	9/18/2018	9/18/2018	12/4/2018	3/18/2019	4/16/2019	9/11/2019	12/12/2019	3/3/2020	3/3/2020	7/28/2020	9/15/2020	10/21/2020	11/17/2020	6/29/2021	9/8/2021	3/22/2022	9/28/2022	3/21/2023	9/6/2023	3/13/2024	9/17/2024					
			(Duplicate)						(Duplicate)																	
Parameters	Units																									
Appendix III																										
Boron	mg/L	2.53	2.40	0.759	0.361	0.334	0.633	--	0.553	0.505	--	0.611	--	--	0.365	0.456	0.330	0.299	0.391	0.545	0.486					
Calcium	mg/L	153	159	172	155	--	140	--	142	144	150	133	122	177	152	138	126	133	116	164	160					
Chloride	mg/L	3.36	3.39	2.94	6.92	--	<5.00	<5.00	<5.00	<5.00	--	6.00	--	--	<5.00	<5.00	5.93	7.48	7.33	7.09	9.45					
Fluoride	mg/L	<0.100	<0.100	0.381	1.99	<0.500	<0.500	--	<0.500	<0.500	--	<0.500	--	--	<0.500	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00					
pH, lab	s.u.	7.0 J	7.0 J	7.1 J	7.4 J	--	7.3 J	--	7.4 J	7.2 J	--	7.3 J	--	--	7.3 J	7.3 J	7.3 J	7.3 J	7.8 J	7.6 J	7.2 J					
Sulfate	mg/L	175	179	206	171	125	136	--	131	122	104	149	90.7	95.5	218	119	103	40.0	159	79.6	101					
Total dissolved solids (TDS)	mg/L	1100	1000	990	922	864	894	--	864	868	--	984	--	--	790	698	676	752	672	818	748					
Appendix IV																										
Antimony	mg/L	--	--	--	<0.00100	--	<0.00100	--	<0.00100	<0.00100	--	--	--	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200					
Arsenic	mg/L	0.00276	0.00240	0.00235	0.0302 J	0.0302	0.0121	0.0291	0.0531	0.0533	0.0654	0.0622	0.0617	0.0594	0.0495	0.0337	0.0344	0.0294	0.0318	0.0248	0.0467	0.0446				
Barium	mg/L	0.0780	0.0819	0.153	0.486	0.442	0.325	--	0.463	0.472	--	0.505	--	--	0.361	0.345	0.265	0.332	0.300	0.463 J+	0.343					
Beryllium	mg/L	--	--	--	<0.00100	--	<0.00100	--	<0.00100	<0.00100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100					
Cadmium	mg/L	--	--	--	<0.000500	--	<0.000100	--	<0.000100	<0.000100	--	<0.000100	--	--	<0.000100	<0.000100	<0.000100	<0.000100	<0.000200	<0.000200	<0.000200					
Chromium	mg/L	<0.00500	<0.00500	--	<0.00500	--	<0.00500	--	<0.00500	<0.00500	--	<0.00500	--	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500					
Cobalt	mg/L	<0.000500	<0.000500	0.00123	0.00128	--	0.00101	--	0.000876	0.000870	--	0.000834	--	--	0.000624	0.000559	<0.000500	0.000687	<0.000500	0.00115	0.00133					
Lead	mg/L	--	--	--	<0.000500	--	<0.000500	--	<0.000500	<0.000500	--	<0.000500	--	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500					
Lithium	mg/L	0.106	0.102	0.0895	0.0746	--	0.0767	--	0.0766	0.0801	--	0.0883	--	--	0.0823	0.0902	0.0852	0.0636	0.0957	0.109	0.0904					
Mercury	mg/L	--	--	--	<0.000200	--	<0.000200	--	<0.000200	<0.000200	--	--	--	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200					
Molybdenum	mg/L	0.00241	0.00253	0.00265	0.00345	0.00333	0.00314	--	0.00326	0.00322	--	0.00322	--	--	0.00204	0.00242	0.00281	0.00254	0.00347	0.00335	0.00443					
Radium-226 & 228	pCi/L	--	--	--	0.694	--	<0.313	--	<0.385	0.628	--	2.17	--	--	0.981	1.06	2.71	1.01	1.08	0.970	1.09					
Selenium	mg/L	0.0318	0.0326	<0.00500	<0.00500	--	<0.00500	--	<0.00500	<0.00500	--	<0.00500	--	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500					
Thallium	mg/L	--	--	--	<0.00100	--	<0.00100	--	<0.00100	<0.00100	--	--	--	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 J	<0.00100	<0.00100					
Other																										
Aluminum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Arsenic (dissolved)	mg/L	--	--	--	--	--	0.0114	0.0250	--	--	--	--	--	--	--	--	--	--	--	--	--					
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Copper	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Iron	mg/L	0.609	0.617	1.00	--	--	6.08	11.9	--	--	--	--	--	--	--	--	--	--	--	--	--					
Iron (dissolved)	mg/L	--	--	--	--	--	5.73	11.0	--	--	--	--	--	--	--	--	--	--	--	--	--					
Magnesium	mg/L	56.9	60.1	65.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Manganese	mg/L	0.0761	0.0797	0.582	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Potassium	mg/L	7.40	7.60	7.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Sodium	mg/L	145	152	108	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Radium-226	pCi/L	--	--	--	0.146 J	--	0.233	--	0.265	0.301	--	1.27	--	--	0.308	0.262	0.267	0.393	0.313	0.379	0.192					
Radium-228	pCi/L	--	--	--	0.548	--	<0.0793	--	<0.121	<0.328	--	0.906	--	--	0.673	0.799	2.44	<0.621	0.764	0.591	0.900					
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Alkalinity, bicarbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Alkalinity, carbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	--	718	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Ammonia-N	mg/L	--	--	0.587	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Hardness	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Nitrate (as N)	mg/L	<0.100	<0.100	<0.100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Nitrite (as N)	mg/L	<0.100	<0.100	<0.100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Silica (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
TOC average duplicates	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Total kjeldahl nitrogen (TKN)	mg/L	<1.00	<1.00	1.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Total nitrogen	mg/L	<1.00	<1.00	1.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
Total suspended solids (TSS)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					

Appendix E

Groundwater Analytical Data Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Sample Location:	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11		
Sample ID:	MW-11	DP-01	MW-11	DP-01	MW-11	DP-01	MW-11	DP-01	MW-11	DP-01	MW-11	DP-01	MW-11	DP-01	MW-11	DP-01	MW-11	DP-01	MW-11	DP-01	MW-11	DP-01	MW-11	DP-01	MW-11	DP-01	MW-11	DP-01	
Sample Date:	12/9/2015	12/9/2015	3/1/2016	3/1/2016	6/6/2016	6/6/2016	9/20/2016	9/20/2016	12/19/2016	12/19/2016	2/20/2017	2/20/2017	4/25/2017	4/25/2017	7/5/2017	7/5/2017	9/11/2017	9/11/2017	4/18/2018	4/18/2018	8/21/2018	3/18/2019	3/18/2019	4/16/2019	4/16/2019	9/10/2019	MW11-GW-0919	MW-11-GW-0320	
		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)		(Duplicate)	
Parameters	Units																												
Appendix III																													
Boron	mg/L	0.697	0.722	0.322	0.368	0.221 J	0.688 J	0.602	0.583	0.524	0.504	0.268	0.328	0.238	0.258	0.243	0.241	0.431	0.477	0.441	0.470	0.492	0.455	0.368	0.287	0.275	0.797	1.28	
Calcium	mg/L	225	222	243	237	238	255	279	272	264	237	243	240	239	251	225	218	252	246	255	253	233	210	226	251	249	265	264	
Chloride	mg/L	12.9	14.5	7.24	6.37	37.5	40.6	16.8	17.8	<2.0	19.1	7.39 J	21.0 J	11.2	12.1	6.10	5.91	8.91	8.54	5.85 J	<5.00	16.0	17.2	16.0	--	--	122	149	
Fluoride	mg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<2.00	<0.500	1.20 J	8.89 J	2.11 J	3.30 J	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.100	0.501	<0.500	<0.500	<0.500	<0.500
pH, lab	s.u.	6.93 J	7.00 J	7.02 J	7.02 J	6.88 J	6.71 J	7.1 J	7.3 J	7.3 J	7.0 J	7.0 J	7.0 J	6.9 J	7.0 J	7.0 J	7.1 J	7.0 J	7.2 J	7.1 J	7.0 J	6.9 J	--	--	7.0 J	7.2 J	7.2 J	7.2 J	
Sulfate	mg/L	303	301	315	323	240	249	352	349	309	326	340	339	321	330	339	354	368	370	427 J	435 J	450	406	410	391	383	321	312	
Total dissolved solids (TDS)	mg/L	1180	1170	1140	1190	1070 J	1100 J	1300	1260	1200	1190	1210	1180	1470	1300	1210	1280	1350	1310	1190	1300	1340	1190	1210	1240	1220	1340	1340	
Appendix IV																													
Antimony	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	--	<0.00100	<0.00100	--	<0.00100	<0.00100	--	--	<0.00100	<0.00100	
Arsenic	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	--	<0.00200	<0.00200	
Barium	mg/L	0.0853	0.0864	0.0651	0.0757	0.121	0.0752	0.0827	0.0795	0.0835	0.0767	0.0703	0.0695	0.0808	0.0824	0.0717	0.0694	--	--	0.0813	0.0825	0.0624	0.0546	0.0586	--	--	0.106	0.0989	
Beryllium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	--	<0.00100	<0.00100	--	<0.00100	<0.00100	--	--	<0.00100	<0.00100	
Cadmium	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	--	<0.000500	<0.000500	--	<0.000500	<0.000500	--	--	<0.000500	<0.000500	
Chromium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	<0.00500	<0.00500	
Cobalt	mg/L	0.00238	0.00240	0.00153	0.00182	<0.000500	0.000792	0.00155	0.00163	0.00212	0.00204	0.00282	0.00271	0.00279	0.00293	0.00331	0.00321	--	--	0.00323	0.00322	0.00251	0.00137	0.00171	--	--	0.00588	<0.000500	
Lead	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	--	<0.000500	<0.000500	--	<0.000500	<0.000500	--	--	<0.000500	<0.000500	
Lithium	mg/L	0.132	0.120	0.119	0.122	0.135	0.107	0.136	0.131	0.127	0.132	0.119	0.122	0.111	0.111	0.120	0.121	--	--	0.129	0.128	0.109	0.132	0.129	--	--	0.0987	0.0912	
Mercury	mg/L	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200 J	<0.000200 J	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	--	--	<0.000200	<0.000200	--	<0.000200	<0.000200	--	--	<0.000200	<0.000200	
Molybdenum	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	--	<0.00200	<0.00200	
Radium-226 & 228	pCi/L	0.321 U	0.827 U	0.246 U	0.0494 U	-0.00864 U	-0.0107 U	0.163 U	-0.0282 U	0.659	0.217 U	0.0642 U	0.0507 U	<0.0680	<0.120	0.330	0.576	--	--	<0.401	0.595	<0.296	0.436	<0.0335	--	--	<0.383	<0.0279	
Selenium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	0.0500 J	0.00609 J	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	0.0213	0.0100	
Thallium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	--	<0.00100	<0.00100	--	<0.00100	<0.00100	--	--	<0.00100	<0.00100	
Other																													
Aluminum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/L	<0.00200	<0.00200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	--	--	--	--	--	--
Iron	mg/L	<0.300	<0.300	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	0.994 J	<0.100 J	<0.100	--	<0.100	--	--	--	--	--	--	--
Iron (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	61.6	62.4	58.2	69.0	62.7	59.4	61.8	59.0	56.0	50.0	61.1	59.3	59.6	63.3	56.3	55.4	66.7	65.5	68.6	68.1	61.2	--	--	--	--	--	--	--
Manganese	mg/L	2.90	2.90	2.99	3.51	<0.0100	1.23	3.87	3.78	3.78	3.42	4.31	4.27	4.66	5.02	4.38	4.29	4.13	4.03	5.47	5.48	4.09	--	--	--	--	--	--	--
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	9.20	9.30	9.11	10.9	6.63	8.26	9.72	9.22	10.2	9.12	8.46	8.30	8.18	8.57	7.91	7.78	--	--	9.98	10.1	8.29	--	--	--	--	--	--	--
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	68.8	69.5	64.5	63.7	71.8	54.9	77.3	72.8	69.1	60.9	62.7	61.1	63.6	66.1	63.3	63.6	81.4	79.4	93.4	92.3	81.8	--	--	--	--	--	--	--
Radium-226	pCi/L	0.114 U	0.113 U	0.0605 U	0.0289 U	0.105	0.0267 U	0.124	0.130	0.147 U	-0.0449 U	0.0832 U	0.113 U	<0.0795	<0.0816	<0.0758	0.0899	--	--	0.124	<0.0463	0.148	<0.0426 J	<0.0552 J	--	--	<0.0364	<0.0503	
Radium-228	pCi/L	0.207 U	0.714 U	0.																									

Appendix E

Groundwater Analytical Data Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Sample Location:	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-13	MW-13	MW-13	MW-13
Sample ID:	MW12-GW-0919	MW-12-GW-0320	MW12-GW-0920	MW12-GW-0321	MW12-GW-0921	MW12-GW-0322	MW12-GW-0622	MW12-GW-0922	MW12-GW-1222	MW12-GW-0323	MW12-GW-0623	DP01-GW-0623	MW12-GW-0923	MW12-GW-0324	MW12-GW-0624	DP02-GW-0624	MW12-GW-0924	MW-13	MW-13	MW-13	MW-13	
Sample Date:	9/10/2019	3/4/2020	9/15/2020	3/23/2021	9/8/2021	3/23/2022	6/2/2022	9/27/2022	12/2/2022	3/22/2023	6/5/2023	(Duplicate)	6/5/2023	9/6/2023	3/12/2024	6/3/2024	6/3/2024	9/17/2024	12/9/2015	3/1/2016	6/6/2016	9/19/2016
	(Duplicate)												(Duplicate)									
Parameters	Units																					
Appendix III																						
Boron	mg/L	1.23	2.85	3.52	4.11	3.67	3.48	--	0.938	--	1.47	--	--	0.901	1.13	--	--	1.44	0.694	0.726	<0.200	1.60
Calcium	mg/L	197	217	223	208	233	243	--	256	--	260	--	--	228	261	--	--	263	230	258	194	262
Chloride	mg/L	27.2	248	333	331	216	301	--	9.29	--	48.6	--	--	8.56	38.5	--	--	76.2	6.18	<5.00	13.1	15.7
Fluoride	mg/L	<0.500	<0.500	<0.500	0.579	<0.500	<0.500	--	<0.500	--	<0.500	--	--	<1.00	<1.00	--	--	<1.00	<0.500	<0.500	0.775	<0.500
pH, lab	s.u.	7.2 J	7.4 J	7.5 J	7.1 J	7.2 J	7.2 J	--	7.2 J	--	7.3 J	--	--	7.6 J	7.3 J	--	--	7.0 J	6.90 J	6.98 J	6.91 J	7.1 J
Sulfate	mg/L	357	274	245	273	433	341	--	481	--	609	--	--	534	594	--	--	406	352	364	484	344
Total dissolved solids (TDS)	mg/L	1110	1350	1390	1300	1230	1420	1210	1160	--	1390	--	--	1280	1320	--	--	1230	1220	1280	1500 J	1270
Appendix IV																						
Antimony	mg/L	<0.00100	<0.00100	--	<0.00200	<0.00200	<0.00800	--	<0.00200	--	<0.00200	--	--	<0.00200	<0.00200	--	--	<0.00200	<0.00100	<0.00100	<0.00100	<0.00100
Arsenic	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00800	--	<0.00200	--	<0.00200	--	--	<0.00200	<0.00200	--	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Barium	mg/L	0.0693	0.0655	0.0706	0.0787	0.155	0.195	--	0.0579	--	0.0510	--	--	0.0440	0.0499 J+	--	--	0.0596	0.0530	0.0439	0.161	0.0418
Beryllium	mg/L	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00400	--	<0.00100	--	<0.00100	--	--	<0.00100	<0.00100	--	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	0.000267	0.000103	0.000451	0.000174	0.000383	0.00285	0.00278	0.000127	--	0.000250	--	--	<0.000200	<0.000200	--	--	<0.000200	<0.000500	<0.000500	<0.000500	<0.000500
Chromium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.0200	--	<0.00500	--	<0.00500	--	--	<0.00500	<0.00500	--	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	0.00860	0.0114	0.00107	--	<0.000500	--	--	0.000581	<0.000500	--	--	<0.000500	0.000796	0.00139	<0.000500	0.00103
Lead	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	0.00607	0.00406	<0.000500	--	<0.000500	--	--	<0.000500	<0.000500	--	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Lithium	mg/L	0.110	0.100	0.0986	0.0951	0.0970	0.118	--	0.131	--	0.154	--	--	0.140	0.152	0.144	0.141	0.133	0.122	0.116	0.102	0.121
Mercury	mg/L	<0.000200	<0.000200	--	<0.000200	<0.000200	<0.000200	--	<0.000200	--	<0.000200	--	--	<0.000200	<0.000200	--	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00800	--	<0.00200	--	<0.00200	--	--	<0.00200	<0.00200	--	--	<0.00200	<0.00200	<0.00200	0.00208	<0.00200
Radium-226 & 228	pCi/L	<0.351	<0.229	0.649	<0.114	<0.393	1.28	1.42	<0.446	--	<0.189	--	--	0.532	<0.00416	--	--	1.01	1.25	0.493	0.486	0.214 U
Selenium	mg/L	<0.00500	0.0242	0.0285	0.0280	<0.00500	1.01	1.14	0.00625	--	1.17	0.00816	0.0107	0.00825	0.293	0.00672	0.00617	0.193	0.0405	0.0624	0.0831	0.0258
Thallium	mg/L	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00400	--	<0.00100	--	<0.00100	--	--	<0.00100 J	<0.00100	--	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Other																						
Aluminum	mg/L	--	--	--	--	--	--	--	<0.0500	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	mg/L	--	--	--	--	--	--	--	0.136	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron (dissolved)	mg/L	--	--	--	--	--	--	--	0.130	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	68.6	--	--	--	--	--	--	--	--	--	76.3	70.9	48.1	66.6
Manganese	mg/L	--	--	--	--	--	--	--	2.89	--	--	--	--	--	--	--	--	0.801	1.04	<0.0100	1.40	
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	2.57	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	8.49	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	0.00889	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	85.5	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	<0.0637	<0.0985	0.366	<0.139	<0.187	<0.595	0.227	--	<0.0114	<0.0269	--	--	<0.0597	<0.0587	--	--	0.0562	0.0304 U	0.0584 U	0.167	0.122 U
Radium-228	pCi/L	<0.287	<0.131	<0.283	<0.0251	<0.205	<0.687	1.20	--	<0.435	<0.162	--	--	<0.472	<0.0629	--	--	0.956	1.22	0.435	0.319 U	0.0922 U
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--	--	--	487	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, bicarbonate	mg/L	--	--	--	--	--	--	--	487	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, carbonate	mg/L	--	--	--	--	--	--	--	<10.0	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia-N	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	mg/L	--	--	--	--	--	--	--	922	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate (as N)	mg/L	--	--	--	--	--	--	--	<0.100	--	--	--	--	--	--	--	--	--	7.02 J	11.6 J	16.0 J	1.11 J
Nitrite (as N)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.500 J	<0.500 J	--
Silica (dissolved)	mg/L	--	--	--	--	--	--	--	19.3	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC average duplicates	mg/L	--	--	--	--	--	--	--	2.75	--	--	--	--	--	--	--	--	--	--	--	--	--
Total kjeldahl nitrogen (TKN)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total nitrogen	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total suspended solids (TSS)	mg/L	--	--	--	--	--	--	--	<1.88	--	--	--	--	--	--	--	--	--	--	--	--	--

Groundwater Analytical Data Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Sample Location:	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-14			
Sample ID:	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-14			
Sample Date:	12/19/2016	2/20/2017	4/25/2017	7/5/2017	9/11/2017	4/18/2018	8/21/2018	9/4/2018	9/18/2018	3/18/2019	4/16/2019	9/10/2019	3/4/2020	9/15/2020	3/23/2021	9/8/2021	3/22/2022	9/28/2022	3/22/2023	9/6/2023	3/12/2024	9/17/2024	12/9/2015		
Parameters	Units																								
Appendix III																									
Boron	mg/L	1.33	1.21	0.747	1.26	1.19	1.29	1.37	1.30	1.32	1.30	2.01	1.15	1.00	1.58	2.43	1.91	1.64	1.72	1.50	1.96	1.80	1.31	1.19	
Calcium	mg/L	239	264	230	245	286	284	175	257	227	267	173	203	290	231	271	205	182	171	165	178	244	283	263	
Chloride	mg/L	54.9	18.1	17.6	17.5	21.3	12.3 J	9.24	10.9	9.33	16.0	--	9.29	18.4	48.6	52.5	22.9	10.7	10.1	11.1	11.3	11.5	11.0	6.40	
Fluoride	mg/L	8.21	0.848	1.89	<0.500	<0.500	<0.500	<0.100	<0.100	<0.100	<0.500	--	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	<1.00	<0.500	
pH, lab	s.u.	7.1 J	7.0 J	6.9 J	7.0 J	6.9 J	6.9 J	6.9 J	7.2 J	7.2 J	7.6 J	7.0 J	--	7.2 J	7.3 J	7.6 J	7.2 J	7.3 J	7.2 J	7.3 J	7.6 J	7.4 J	6.9 J	6.80 J	
Sulfate	mg/L	324	451	461	524	485	536 J	543	464	469	618	535	495	597	469	546	472	398	443	459	437	558	473	386	
Total dissolved solids (TDS)	mg/L	1140	1330	1210	1590	1770	1250	1410	1320	1390	1380	1200	1200	1640	1450	1360	1000	1230	1160	1220	1310	1300	1370		
Appendix IV																									
Antimony	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	--	--	--	<0.00100	--	<0.00100	<0.00100	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00100	
Arsenic	mg/L	0.00388	0.00223	0.00339	0.00360	--	<0.00200	<0.00200	<0.00200	<0.00200	0.00675 J	--	0.00251	<0.00200	0.00238	<0.00200	<0.00200	<0.00200	0.00462	0.00204	0.00550	<0.00200	0.00215	<0.00200	
Barium	mg/L	0.0571	0.0477	0.0808	0.0768	--	0.0517	0.0458	0.0480	0.0408	0.0579	--	0.0478	0.0389	0.0368	0.0327	0.0406	0.0369	0.0448	0.0379	0.0443	0.0354 J+	0.0420	0.133	
Beryllium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	--	--	--	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	
Cadmium	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	--	--	--	<0.000500	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	
Chromium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	
Cobalt	mg/L	0.00105	0.00187	0.00624	0.00116	--	0.00304	0.00185	0.00245	0.00190	0.00158	--	0.00191	0.000776	0.00323	0.00254	0.00323	0.000974	<0.000500	0.00145	0.000712	0.00112	0.00179	0.00311	
Lead	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	--	--	--	<0.000500	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	
Lithium	mg/L	0.110	0.120	0.0830	0.105	--	0.120	0.0745	0.109	0.109	0.118	--	0.0937	0.128	0.0997	0.128	0.0894	0.0934	0.0794	0.0726	0.0944	0.112	0.138	0.162	
Mercury	mg/L	<0.000200	<0.000200	<0.000200	<0.000200	--	<0.000200	--	--	--	<0.000200	--	<0.000200	<0.000200	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	
Molybdenum	mg/L	<0.00200	<0.00200	0.00296	0.00235	--	<0.00200	0.00205	<0.00200	<0.00200	0.00276	--	<0.00200	<0.00200	0.00273	0.00214	0.00222	0.00231	0.00304	<0.00200	<0.00200	<0.00200	<0.00200	0.00207	
Radium-226 & 228	pCi/L	0.370 U	0.0861 U	0.389	0.579	--	0.737	0.653	--	--	<0.00847	--	<0.255	<0.115	0.622	0.486	0.770	0.639	1.59	0.759	0.913	<0.448	1.60	1.79	
Selenium	mg/L	0.00616	0.0196	<0.00500	<0.00500	--	0.0205	<0.00500	0.0158	<0.00500	<0.00500	--	<0.00500	0.0326	<0.00500	<0.00500	<0.00500	<0.00500	0.00876	<0.00500	<0.00500	0.00751	0.0148		
Thallium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	--	--	--	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	
Other																									
Aluminum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.00200
Iron	mg/L	--	2.66	10.0	8.22	0.283	--	3.10	0.861	0.503	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.100
Iron (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	61.1	75.2	66.8	67.1	87.0	78.6	47.6	69.8	62.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	83.2
Manganese	mg/L	1.25	1.83	2.27	1.70	0.667	2.55	1.35	1.05	1.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.54
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	9.93	10.2	10.3	10.1	--	11.7	10.3	11.7	11.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12.7
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	57.8	64.7	78.0	100	86.0	82.3	129	101	121	--	--	--	--	--	--	--	--	--	--	--	--	--	--	116
Radium-226	pCi/L	0.107 U	0.104	0.138	0.157	--	0.0752	0.302	--	--	0.110 J	--	<0.0311	<0.00864	<0.0545	<0.0159	0.236	<0.0345	<0.112	<0.209	<0.0383	<0.593	0.216	0.454	
Radium-228	pCi/L	0.263 U	-0.0180 U	<0.251	0.422	--	0.661	<0.351	--	--	<-0.101	--	<0.224	<0.124	0.568	0.470	0.534	0.674	1.48	0.551	0.874	<-0.145	1.38	1.34	
Alkalinity (as CaCO ₃ pH=4.5)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, bicarbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, carbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, total (as CaCO ₃)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia-N	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate (as N)	mg/L	2.20 J	2.81 J	0.710 J	<0.500 J	15.9 J	4.27 J	0.125 J	<0.100	<0.100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<2.00 J
Nitrite (as N)	mg/L	--	--	--	--	--	--	<0.100	<0.100	<0.100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC average duplicates	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total kjeldahl nitrogen (TKN)	mg/L	--	--	--	--	--	--	<1.00	<1.00	<1.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total nitrogen	mg/L	--	--	--	--	--	--	<1.00	<1.00	<1.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total suspended solids (TSS)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix E

Groundwater Analytical Data Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Sample Location:	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14		
Sample ID:	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14-GW-0919	MW-14-GW-0320	MW14-GW-0920	MW14-GW-0321	MW14-GW-0921	MW14-GW-0322	MW14-GW-0622	MW14-GW-0922	MW14-GW-0323	MW14-GW-0923	MW14-GW-0324
Sample Date:	3/1/2016	6/6/2016	9/20/2016	12/19/2016	2/20/2017	4/25/2017	7/5/2017	9/11/2017	4/18/2018	8/21/2018	3/19/2019	4/16/2019	9/10/2019	3/4/2020	9/15/2020	3/23/2021	9/9/2021	3/21/2022	6/2/2022	9/28/2022	3/22/2023	9/7/2023	3/11/2024	

Parameters	Units																							
Appendix III																								
Boron	mg/L	1.11	0.593	1.47	1.05	0.883	0.343	0.281	1.36	0.322	0.312	0.855	0.531	1.01	2.64	2.41	2.13	0.900	0.729	--	0.319	0.261	0.341	0.332
Calcium	mg/L	256	246	246	301	270	235	198	238	231	198	224	234	200	193	213	214	282	197	--	208	188	183	220
Chloride	mg/L	<5.00	5.86	5.47	<5.00	8.67	23.2	8.21	<5.00	<5.00	4.32	5.77	--	29.6	54.2	32.4	6.28	<5.00	--	5.14	5.72	<5.00	5.41	
Fluoride	mg/L	<0.500	<0.500	<0.500	<0.500	2.17	14.9	3.01	<0.500	<0.500	<0.100	<0.500	--	<0.500	<0.500	<0.500	0.540	<0.500	<0.500	--	<0.500	<0.500	<1.00	<1.00
pH, lab	s.u.	6.91 J	6.87 J	7.0 J	6.9 J	6.9 J	6.9 J	6.9 J	7.0 J	7.0 J	7.8 J	7.0 J	--	7.0 J	7.3 J	7.4 J	7.1 J	7.2 J	7.0 J	--	7.2 J	7.2 J	7.6 J	7.4 J
Sulfate	mg/L	346	311	324	274	428	277	220	357	279 J	278	239	246	218	252	260	324	414	292	--	173	218	169	236
Total dissolved solids (TDS)	mg/L	1280	1160 J	1300	1810	1600	1220	1030	1420	1000	1100	1020	1070	1060	1310	1300	1230	1290	1020	--	938	884	904	942
Appendix IV																								
Antimony	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	--	<0.00100	--	<0.00100	<0.00100	--	<0.00200	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Barium	mg/L	0.0798	0.0857	0.0656	0.0882	0.0768	0.0695	0.0604	--	0.0646	0.0619	0.0605	--	0.0634	0.0640	0.0655	0.0731	0.0741	0.0619	--	0.0643	0.0574	0.0574	0.0731 J+
Beryllium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	--	<0.00100	--	<0.00100	<0.00100	0.000153	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	--	<0.000500	--	<0.000500	<0.000500	0.000153	<0.000500	0.000213	0.000117	--	0.000137	0.000132	<0.000200	<0.000200
Chromium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	0.00278	0.00237	0.00259	0.00465	0.00494	0.00329	0.00327	--	0.00277	0.00319	0.00174	--	0.000759	0.00155	0.00219	0.000749	0.00194	0.00260	--	0.00360	0.00317	0.00331	0.00277
Lead	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	--	<0.000500	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Lithium	mg/L	0.143	0.129	0.152	0.133	0.142	0.0959	0.105	--	0.105	0.0814	0.125	--	0.104	0.128	0.130	0.147	0.144	0.153	0.125	0.124	0.106	0.136	0.137
Mercury	mg/L	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	--	<0.000200	--	<0.000200	--	<0.000200	<0.000200	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	<0.00200	<0.00200	<0.00200	0.00222	0.00222	0.00209	<0.00200	--	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200	0.00224	0.00220	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Radium-226 & 228	pCi/L	0.597	0.789	0.879	1.05	0.879	0.324	0.557	--	0.445	0.702	0.616	--	<0.311	1.18	0.679	<0.218	0.910	1.26	1.18	1.22	0.889	0.800	7.61
Selenium	mg/L	0.0216	0.0146	0.0289	0.0126	0.00695	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	--	0.0102	0.0176	0.0165	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Thallium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	--	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Other																								
Aluminum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	mg/L	<0.100	<0.100	<0.100	<0.100	0.159	<0.100	<0.100	<0.100	<0.100	<0.100	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	65.1	61.6	57.0	65.7	73.5	68.0	59.6	70.1	68.1	56.7	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	1.47	1.72	1.09	2.19	2.30	2.03	1.90	1.88	2.21	2.45	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	11.3	9.04	11.4	11.3	10.6	9.39	8.17	--	9.05	7.89	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	118	77.9	134	94.8	99.3	54.9	43.0	135	47.6	43.2	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	0.319	0.368	0.340	0.265 U	0.160	0.156	0.216	--	0.139	0.338	0.130 J	--	<0.109	0.221	0.347	<0.126	<0.320	0.361	--	<0.110	<0.184	0.130	<0.0721
Radium-228	pCi/L	0.278 U	0.421 U	0.539	0.789	0.398 U	<0.167	0.341	--	<0.306	<0.364	0.486	--	<0.202	0.458	0.837	<0.0924	0.590	0.897	--	1.11	0.705	0.670	7.53
Alkalinity (as CaCO ₃ pH=4.5)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, bicarbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, carbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, total (as CaCO ₃)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia-N	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate (as N)	mg/L	<0.500 J	0.828 J	<0.500 J	<0.500 J	0.868 J	1.47 J	<0.500 J	<0.500 J	<0.500 J	<0.100	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite (as N)	mg/L	<0.500 J	<0.500 J	--	--	--	--	--	--	--	<0.100	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC average duplicates	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total kjeldahl nitrogen (TKN)	mg/L	--	--	--	--	--	--	--	--	--	<1.00	--	--	--	--	--								

Groundwater Analytical Data Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Sample Location:	MW-15	MW-15	MW-15	MW-15	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16			
Sample ID:	MW15-GW-0923	MW15-GW-0324	MW15-GW-0624	MW15-GW-0924	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW16-GW-0919	MW-16-GW-0320	MW16-GW-0920	MW16-GW-0321	MW16-GW-0921	MW-16-GW-0322	MW-16-GW-0622	MW16-GW-0922		
Sample Date:	9/7/2023	3/13/2024	6/3/2024	9/18/2024	10/30/2018	10/30/2018	11/20/2018	12/4/2018	1/3/2019	1/16/2019	1/28/2019	2/21/2019	3/7/2019	3/20/2019	4/17/2019	9/10/2019	3/4/2020	9/15/2020	3/23/2021	9/9/2021	3/21/2022	6/2/2022	9/27/2022		
(Duplicate)																									
Parameters	Units																								
Appendix III																									
Boron	mg/L	0.400	0.960	--	0.785	<0.200	0.202	<0.200	0.183	<0.200	<0.200	<0.200	<0.200	0.212	0.214	--	<0.200	0.233	0.216	0.185	0.196	0.267	0.219	0.186	
Calcium	mg/L	112	208	--	129	143	164	117	155	151	112	163	153	166	160	--	142	139	134	138	150	147	--	128	
Chloride	mg/L	31.4	26.1	--	16.9	2.47	2.50	<5.00	1.87	<5.00	<5.00	<5.00	<5.00	<5.00	5.63	--	<5.00	5.68	5.66	<5.00	7.11	<5.00	--	6.02	
Fluoride	mg/L	<1.00	<1.00	--	<1.00	0.241	0.239	<0.500	0.280	<0.500	<0.500	<0.500	<0.500	0.590	<0.500	<0.500	<0.500	<0.500	<0.500	0.729	<0.500	<0.500	--	<0.500	
pH, lab	s.u.	7.6 J	7.4 J	--	7.1 J	7.1 J	7.1 J	7.4 J	7.3 J	7.3	7.3 J	7.2 J	7.2 J	7.0 J	7.1 J	--	7.1 J	7.0 J	7.8 J	7.1 J	7.1 J	7.2 J	--	7.3 J	
Sulfate	mg/L	163	374	--	116	67.7	68.4	72.8	80.8	79.4	78.4	74.3	73.1	70.2	35.8	--	56.9	50.7	40.4	61.1	51.2	51.2	--	17.5	
Total dissolved solids (TDS)	mg/L	594	1140	--	746	636	638	660	618	630	624	628	632	618	644	--	<30.0	542	632	592	650	560	--	614	
Appendix IV																									
Antimony	mg/L	<0.00200	<0.00200	--	<0.00200	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	<0.00100	--	<0.00200	<0.00200	<0.00200	--	<0.00200	
Arsenic	mg/L	<0.00200	<0.00200	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	<0.00200	
Barium	mg/L	0.0413	0.0665 J+	--	0.110 J+	0.220	0.255	0.152	0.189	0.181	0.164	0.188	0.195	0.194	0.201	--	0.242	0.163	0.197	0.233	0.322	0.261	--	0.329	
Beryllium	mg/L	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00100	--	<0.00100	
Cadmium	mg/L	<0.000200	<0.000200	--	<0.000200	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000226	<0.00169	--	<0.000206	
Chromium	mg/L	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	<0.00500	
Cobalt	mg/L	0.00206	0.00113	--	0.00241	0.00187	0.00218	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	<0.000500	0.000523	<0.000500	0.000736	0.000683	--	0.00156	
Lead	mg/L	<0.000500	<0.000500	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	
Lithium	mg/L	0.0781	0.0754	--	0.0578	0.0596	0.0679	0.0458	0.0685	0.0591	0.0599	0.0632	0.0716	0.0706	0.0700	--	0.0592	0.0573	0.0616	0.0655	0.0660	0.0705	--	0.0614	
Mercury	mg/L	<0.000200	<0.000200	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	--	<0.000200	<0.000200	--	<0.000200	<0.000200	<0.000200	--	<0.000200	
Molybdenum	mg/L	<0.00200	<0.00200	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	<0.00200	
Radium-226 & 228	pCi/L	1.59	<0.483	--	0.213	2.38	2.02	1.08	0.844	1.29	0.739	0.732	0.656	0.432	0.584	--	<0.301	0.842	0.536	1.34	1.25	1.31	--	0.830	
Selenium	mg/L	<0.00500	0.0677	0.0227	0.00854	0.0334	0.0403	0.0268	0.0332	0.0299	0.0304	0.0333	0.0230	0.0167	<0.00500	--	0.0169	0.0178	<0.00500	<0.00500	<0.00500	0.0124	--	<0.00500	
Thallium	mg/L	<0.00100 J	<0.00100	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00100	--	<0.00100	
Other																									
Aluminum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.0500	
Arsenic (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Copper	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Iron	mg/L	--	--	--	--	<0.100	<0.100	<0.100	0.0871	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.362	
Iron (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.100	
Magnesium	mg/L	--	--	--	--	35.3	40.8	27.9	38.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	32.9	
Manganese	mg/L	--	--	--	--	0.674	0.793	0.149	0.138	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.48	
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.68	
Potassium	mg/L	--	--	--	--	5.82	6.69	4.11	5.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.28	
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sodium	mg/L	--	--	--	--	28.6	29.4	15.1	18.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	76.1	
Radium-226	pCi/L	0.192	<0.0328	--	0.156	1.13	1.23	0.464	0.303	0.239	0.231	0.273	0.171	0.189	0.183	--	0.300	0.256	0.229	0.255	0.456	0.414	--	0.204	
Radium-228	pCi/L	1.40	<0.450	--	0.0570	1.24	0.787	0.614	0.541	1.05 U	0.509	0.459	0.485	<0.242	0.401	--	1.04	<0.0447	0.613	<0.282	0.791	0.894	--	0.627	
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	571	
Alkalinity, bicarbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	571	
Alkalinity, carbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<10.0	
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Ammonia-N	mg/L	--	--	--	--	<0.200	<0.200	<0.200	<0.200	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	455	
Nitrate (as N)	mg/L	--	--	--	--	0.500	0.503	1.10	1.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.100	
Nitrite (as N)	mg/L	--	--	--	--	<0.100	<0.100	<0.100	<0.100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Silica (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24.8	
TOC average duplicates	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.69	
Total kjeldahl nitrogen (TKN)	mg/L	--	--	--	--	<1.00	<1.00	<1.00	<1.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Total nitrogen	mg/L	--	--	--	--	<1.00	<1.00	<1.00	1.29	--	--	--	--</												

Appendix E
Groundwater Analytical Data Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Sample Location:	MW-16	MW-16	MW-16	MW-16	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	
Sample ID:	MW16-GW-0323	MW16-GW-0923	MW16-GW-0324	MW16-GW-0924	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17-GW-0919	MW17-GW-0320	MW17-GW-0920	MW17-GW-0321	MW17-GW-0921	MW17-GW-0322	MW17-GW-0922	MW17-GW-1222	
Sample Date:	3/22/2023	9/5/2023	3/11/2024	9/18/2024	10/30/2018	11/20/2018	12/4/2018	1/3/2019	1/16/2019	1/28/2019	2/21/2019	3/7/2019	3/21/2019	4/17/2019	9/10/2019	3/3/2020	9/14/2020	3/24/2021	9/8/2021	3/23/2022	9/27/2022	12/2/2022	
Parameters	Units																						
Appendix III																							
Boron	mg/L	0.161	0.220	0.184	0.184	<0.200	<0.200	0.191	<0.200	0.206	0.221	0.238	0.253	0.208	--	<0.200	0.236	0.243	0.197	0.209	0.219	0.217	--
Calcium	mg/L	120	130	142	170	143	148	148	148	119	171	173	198	175	--	166	163	181	176	177	168	165	--
Chloride	mg/L	7.87	<5.00	6.08	5.86	16.5	18.9	22.5	17.9	18.0	17.5	14.5	13.3	14.9	--	14.1	<5.00	13.0	13.4	18.8	18.8	21.3	--
Fluoride	mg/L	<0.500	<1.00	<1.00	<1.00	0.217	<0.500	0.267	<0.500	<0.500	<0.500	<0.500	<0.500	0.527	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	--
pH, lab	s.u.	7.3 J	7.6 J	7.6 J	7.0 J	7.1 J	7.2 J	7.2 J	7.3	7.1 J	7.3 J	7.3 J	7.1 J	7.2 J	--	7.3 J	6.9 J	7.8 J	7.2 J	7.2 J	7.3 J	7.3 J	--
Sulfate	mg/L	21.3	46.5	38.2	72.0	68.1	62.4	68.0	61.7	64.0	61.4	67.3	72.8	76.3	--	66.9	70.6	93.7	113	98.0	90.8	73.2	--
Total dissolved solids (TDS)	mg/L	594	684	600	716	654	674	638	654	656	654	740	680	726	--	732	716	764	770	718	690	684	--
Appendix IV																							
Antimony	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	<0.00100	--	<0.00200	<0.00200	<0.00200	<0.00200	--
Arsenic	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	0.00569	0.0109	0.0115	0.00915	0.0104 J	0.00933	0.0103	0.0123	0.0176	--	0.0113	0.00650	0.0184	0.0158	0.0330	0.0264	0.0260	--
Barium	mg/L	0.262	0.342	0.266 J+	0.350 J+	0.157	0.154	0.161	0.167	0.171	0.178	0.197	0.204	0.181	--	0.185	0.166	0.207	0.188	0.141	0.126	0.122	--
Beryllium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00100	<0.00100	--
Cadmium	mg/L	0.000187	<0.000200	<0.000200	<0.000200	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--
Chromium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--
Cobalt	mg/L	0.000872	0.00146	0.00111	0.00158	0.00346	0.00396	0.00379	0.00335	0.00340	0.00344	0.00318	0.00328	0.00269	--	0.00313	0.00243	0.00319	0.00289	0.00214	0.00159	0.00172	--
Lead	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	<0.000500	<0.000500	<0.000500	0.000638	<0.000500	<0.000500	<0.000500	--
Lithium	mg/L	0.0539	0.0640	0.0573	0.0616	0.0737	0.0724	0.0831	0.0721	0.0769	0.0764	0.0929	0.0867	0.0828	--	0.0771	0.114	0.0921	0.0890	0.0835	0.0910	0.0834	--
Mercury	mg/L	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	--	<0.000200	<0.000200	--	<0.000200	<0.000200	<0.000200	<0.000200	--
Molybdenum	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200	<0.00200	<0.00200	0.00205	0.00272	0.00312	--
Radium-226 & 228	pCi/L	1.74	1.45	0.705	0.691	2.27	1.21	1.21	1.19	1.21	0.943	0.650	0.778	0.696	--	1.10	0.835	1.25	0.872	1.25	1.47	--	1.09
Selenium	mg/L	<0.00500	<0.00500	0.0214	0.118	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--
Thallium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00100	<0.00100	--
Other																							
Aluminum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.0500	--
Arsenic (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	mg/L	--	--	--	--	1.81	4.09	4.53	--	--	--	--	--	--	--	--	--	--	--	--	--	12.8	--
Iron (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11.7	--
Magnesium	mg/L	--	--	--	--	46.8	44.5	47.2	--	--	--	--	--	--	--	--	--	--	--	--	--	51.7	--
Manganese	mg/L	--	--	--	--	1.78	1.90	2.09	--	--	--	--	--	--	--	--	--	--	--	--	--	2.13	--
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.07	--
Potassium	mg/L	--	--	--	--	5.92	5.71	5.92	--	--	--	--	--	--	--	--	--	--	--	--	--	6.19	--
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	26.6	22.1	22.8	--	--	--	--	--	--	--	--	--	--	--	--	--	36.2	--
Radium-226	pCi/L	0.302	0.226	<0.126	0.0944	0.960	0.592	0.402	0.341	0.409	0.408	0.324	0.224	0.321	--	0.258	0.311	0.340	0.344	0.455	<0.443	--	<0.0869
Radium-228	pCi/L	1.44	1.23	0.579	0.596	1.31	0.619	0.804	0.852 U	0.803	0.534	0.326	0.554	<0.374	--	0.943	0.523	0.765	0.529	0.792	1.02	--	1.01
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	521	--
Alkalinity, bicarbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	521	--
Alkalinity, carbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<10.0	--
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia-N	mg/L	--	--	--	--	0.714	0.667	0.734	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	625	--
Nitrate (as N)	mg/L	--	--	--	--	0.184	<0.100	<0.100	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.100	--
Nitrite (as N)	mg/L	--	--	--	--	<0.100	<0.100	0.135	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19.7	--
TOC average duplicates	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.01	--
Total kjeldahl nitrogen (TKN)	mg/L	--	--	--	--	1.22	1.09	1.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total nitrogen	mg/L	--	--	--	--	1.40	1.09	1.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total suspended solids (TSS)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	30.0	--

Appendix E
Groundwater Analytical Data Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Sample Location:	MW-17	MW-17	MW-17	MW-17	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18			
Sample ID:	MW17-GW-0323	MW17-GW-0923	MW17-GW-0324	MW17-GW-0924	MW-18	MW-18	DUP-1	MW-18	DUP-1	MW-18	DP-01	MW-18	DP-01	MW-18	DP-01	MW-18	DP-01	MW-18	DP-01	MW-18	DP-02	MW-18	DP-02	MW-18-GW-0919	MW-18-GW-0320		
Sample Date:	3/22/2023	9/6/2023	3/12/2024	9/18/2024	10/31/2018	11/20/2018	11/20/2018	12/4/2018	12/4/2018	1/3/2019	1/3/2019	1/16/2019	1/16/2019	1/28/2019	1/28/2019	2/21/2019	2/21/2019	3/7/2019	3/7/2019	3/21/2019	3/21/2019	4/17/2019	4/17/2019	9/10/2019	3/3/2020		
							(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)	(Duplicate)				
Parameters	Units																										
Appendix III																											
Boron	mg/L	0.242	0.245	0.194	0.229	0.266	<0.200	0.222	0.225	0.240	<0.200	<0.200	0.209	0.208	0.238	0.238	0.258	0.216	0.290	0.215	<0.200	0.233	--	--	0.210	0.230	
Calcium	mg/L	159	173	161	180	167	150	165	162	165	162	166	122	131	187	175	170	178	182	164	151	174	--	--	166	180	
Chloride	mg/L	23.7	23.8	14.7	23.9	<5.00	<5.00	<5.00	2.74	2.96	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	--	--	<5.00	11.4	
Fluoride	mg/L	<0.500	<1.00	<1.00	<1.00	<0.500	<0.500	<0.500	0.324	0.348	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.594	0.584	0.535	<0.500	<0.500	<0.500	
pH, lab	s.u.	7.3 J	7.7 J	7.5 J	7.0 J	7.0 J	7.1 J	7.1 J	7.1 J	7.1 J	7.3	7.3 J	7.0 J	7.2 J	7.3 J	7.4 J	7.2 J	6.9 J	7.0 J	7.1 J	7.1 J	--	--	7.1 J	7.0 J		
Sulfate	mg/L	83.6	80.4	97.1	70.5	79.6	77.7	78.2	81.7	82.4	75.9	73.9	80.8	79.6	77.3	77.7	87.2	86.5	85.0	87.0	79.9	81.6	--	--	83.2	75.7	
Total dissolved solids (TDS)	mg/L	678	682	658	712	716	728	708	748	754	694	688	706	722	788	786	804	912	732	756	720	692	--	--	808	748	
Appendix IV																											
Antimony	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	--	<0.00100	<0.00100	
Arsenic	mg/L	0.0265	0.0143	0.0157	0.0190	0.0208	0.0206	0.0224	0.0199	0.0202	0.00578	0.00531	0.0126 J	0.0126 J	0.0141	0.0140	0.0191	0.0200	0.0181	0.0165	0.00450	0.00468	--	--	0.00523	0.00780	
Barium	mg/L	0.106	0.121	0.105 J+	0.143 J+	0.132	0.126	0.136	0.141	0.145	0.169	0.167	0.133	0.143	0.149	0.140	0.145	0.148	0.137	0.123	0.121	0.133	--	--	0.164	0.206	
Beryllium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	--	<0.00100	<0.00100	
Cadmium	mg/L	<0.000100	0.000222	<0.000200	<0.000200	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	--	<0.000500	<0.000500	
Chromium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	<0.00500	<0.00500	
Cobalt	mg/L	0.00193	0.00165	0.000878	0.00148	0.00511	0.00661	0.00724	0.00586	0.00605	0.00306	0.00278	0.00303	0.00278	0.00303	0.00324	0.00335	0.00286	0.00295	0.00294	0.00266	0.00154	0.00190	--	--	0.00392	0.00282
Lead	mg/L	<0.000500	0.000782	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	--	<0.000500	<0.000500	
Lithium	mg/L	0.0881	0.0837	0.0780	0.0752	0.129	0.107	0.116	0.121	0.132	0.101	0.103	0.103	0.107	0.118	0.120	0.125	0.129	0.133	0.136	0.0991	0.115	--	--	0.118	0.0878	
Mercury	mg/L	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	--	--	<0.000200	<0.000200	
Molybdenum	mg/L	0.00332	0.00484	0.00283	0.00349	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.00263	0.00202	0.00202	<0.00200	<0.00200	<0.00200	<0.00200	0.00284	0.00207	<0.00200	<0.00200	<0.00200	<0.00200	
Radium-226 & 228	pCi/L	1.19	1.40	1.71	1.16	1.61	1.52	1.61	1.32	0.713	1.28	1.44	1.84	1.00	0.840	0.989	0.822	1.11	0.807	1.18	1.07	--	--	1.51	0.856		
Selenium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	<0.00500	<0.00500	
Thallium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	--	<0.00100	<0.00100	
Other																											
Aluminum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Arsenic (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Copper	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Iron	mg/L	--	--	--	--	10.1	8.70	9.42	8.62	8.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Iron (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Magnesium	mg/L	--	--	--	--	52.6	46.8	50.2	50.5	53.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Manganese	mg/L	--	--	--	--	2.68	2.52	2.72	2.57	2.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Potassium	mg/L	--	--	--	--	7.91	7.39	7.89	7.95	8.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sodium	mg/L	--	--	--	--	50.9	36.0	38.3	44.9	47.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Radium-226	pCi/L	0.425	<0.116	0.352	0.227	0.736	0.625	0.686	0.671	0.596	0.477	0.605	0.548	0.594	0.462	0.448	0.383	0.317	0.373	0.299	0.300	0.234	--	--	0.348	0.209	
Radium-228	pCi/L	0.765	1.28	1.36	0.938	0.873	0.891	0.921	0.653	1.16	0.236	0.676 U	0.895	1.25	0.541	<0.392	0.606	0.505	0.736	0.508	0.877	0.832	--	--	1.16	0.647	
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Alkalinity, bicarbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Alkalinity, carbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Ammonia-N	mg/L	--	--	--	--	0.898	0.689	0.676	0.815	0.809	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Hardness	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Nitrate (as N)	mg/L	--	--																								

Appendix E

Groundwater Analytical Data Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Sample Location:	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	
Sample ID:	MW19-GW-0321	MW19-GW-0921	MW19-GW-0322	MW19-GW-0922	MW19-GW-0323	MW19-GW-0923	MW19-GW-0324	MW19-GW-0924	MW20	MW20	MW20	MW20	MW20	MW20-GW-0919	MW20-GW-0320	MW20-GW-0920	MW20-GW-0321	MW20-GW-0921	MW20-GW-0322	MW20-GW-0922	MW20-GW-0323	
Sample Date:	3/24/2021	9/7/2021	3/21/2022	9/29/2022	3/20/2023	9/6/2023	3/12/2024	9/18/2024	10/30/2018	11/19/2018	12/3/2018	3/18/2019	4/17/2019	9/11/2019	3/2/2020	9/14/2020	3/24/2021	9/7/2021	3/21/2022	9/29/2022	3/20/2023	
Parameters	Units																					
Appendix III																						
Boron	mg/L	0.286	0.248	0.283	0.426	0.370	0.209	0.466	0.460	0.812	0.516	0.637	1.04	1.06	0.527	0.665	0.566	0.349	0.611	0.730	0.846	0.745
Calcium	mg/L	218	215	219	270	239	236	247	317	179	144	149	180	--	143	141	131	117	152	133	143	138
Chloride	mg/L	10.9	10.9	17.1	35.5	47.2	25.7	57.0	62.6	19.4	11.1	7.58	23.8	13.6	<5.00	<5.00	<5.00	<5.00	6.66	<5.00	7.05	19.5
Fluoride	mg/L	0.560	<0.500	<0.500	<0.500	<0.500	<1.00	<1.00	<1.00	0.233	<0.500	0.227	<0.500	--	<0.500	<0.500	<0.500	0.521	<0.500	<0.500	<0.500	<0.500
pH, lab	s.u.	7.1 J	7.1 J	7.0 J	6.9 J	7.0 J	7.5 J	7.0 J	7.5 J	7.1 J	7.3 J	7.1 J	7.1 J	--	7.2 J	7.0 J	7.6 J	7.3 J	7.2 J	7.3 J	7.2 J	7.2 J
Sulfate	mg/L	373	336	290	282	239	254	244	365	184	151	146	236	240	112	106	103	60.3	112	69.2	107	104
Total dissolved solids (TDS)	mg/L	1030	1030	1050	1220	1080	<50.0	1110	1360	808	716	674	908	900	624	632	628	486	636	458	614	610
Appendix IV																						
Antimony	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	--	--	<0.00100	--	<0.00100	<0.00100	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.0161	0.00988	0.00693	0.0234 J	--	0.00339	0.00371	0.00574	0.00206	0.00835	0.00982	0.0173	0.0133
Barium	mg/L	0.184	0.143	0.163	0.133	0.155	0.133	0.139 J+	0.0942 J+	0.127	0.108	0.125	0.107	--	0.0930	0.107	0.0962	0.0954	0.114	0.123	0.139	0.121
Beryllium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	--	--	--	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	<0.000100	<0.000100	<0.000100	0.000113	0.000102	<0.000200	<0.000200	<0.000200	<0.000200	--	--	<0.000500	--	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100
Chromium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	--	<0.00500	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	0.0102	0.00847	0.00862	0.00669	0.00955	0.00388	0.00636	0.00173	0.00370	0.00227	0.00190	0.00158	--	0.00218	0.00432	0.00574	0.00248	0.00407	0.00132	0.00345	0.00142
Lead	mg/L	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	--	--	<0.000500	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Lithium	mg/L	0.112	0.111	0.124	0.159	0.151	0.146	0.144	0.182	0.0936	0.0730	0.0891	0.111	--	0.0773	0.0782	0.0752	0.0641	0.0883	0.0827	0.0882	0.0794
Mercury	mg/L	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200	--	--	--	<0.000200	--	<0.000200	<0.000200	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Radium-226 & 228	pCi/L	1.08	0.859	1.21	1.09	1.04	1.09	1.04	0.843	2.11	1.12	1.07	<0.331	--	0.782	0.440	0.847	0.375	0.992	0.616	1.39	0.921
Selenium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00706	0.0132	<0.00500	--	0.0109	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Thallium	mg/L	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 J	<0.00100	<0.00100	--	--	--	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Other																						
Aluminum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	mg/L	--	--	--	--	--	--	--	--	6.51	3.84	2.69	--	--	--	--	--	--	--	--	--	--
Iron (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	--	--	--	--	--	51.2	39.7	41.4	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	--	--	--	--	--	2.51	1.47	1.13	--	--	--	--	--	--	--	--	--	--
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	--	--	--	--	--	8.08	6.44	6.81	--	--	--	--	--	--	--	--	--	--
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--	--	--	38.1	29.7	29.3	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	0.488	0.356	0.610	0.260	0.314	0.326	0.307	0.231	0.737	0.445	0.460	0.115 J	--	<0.111	0.146	0.198	0.202	<0.180	0.143	0.266	0.295
Radium-228	pCi/L	0.590	0.503	<0.603	1.42	0.771	0.714	1.44	0.613	1.37	0.674	0.609	<0.216	--	0.671	<0.295	0.649	<0.173	0.812	0.473	1.12	0.626
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, bicarbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, carbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia-N	mg/L	--	--	--	--	--	--	--	--	0.301	<0.200	<0.200	--	--	--	--	--	--	--	--	--	--
Hardness	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate (as N)	mg/L	--	--	--	--	--	--	--	--	<0.100	1.01	2.27	--	--	--	--	--	--	--	--	--	--
Nitrite (as N)	mg/L	--	--	--	--	--	--	--	--	<0.100	0.153	0.138	--	--	--	--	--	--	--	--	--	--
Silica (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC average duplicates	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total kjeldahl nitrogen (TKN)	mg/L	--	--	--	--	--	--	--	--	<1.00	<1.00	<1.00	--	--	--	--	--	--	--	--	--	--
Total nitrogen	mg/L	--	--	--	--	--	--	--	--	<1.00	1.16	2.41	--	--	--	--	--	--	--	--	--	--
Total suspended solids (TSS)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix E
Groundwater Analytical Data Summary
MidAmerican Energy Company
Neal South CCR Monofill
Salix, Iowa

Sample Location:	MW-20	MW-20	MW-20	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	
Sample ID:	MW20-GW-0923	MW20-GW-0324	MW20-GW-0924	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21-GW-0919	MW-21-GW-0320	MW21-GW-0920	MW21-GW-0321	MW21-GW-0921	MW21-GW-0322	MW21-GW-0622	DP02-GW-0622	MW21-GW-0922	MW21-GW-0323	MW21-GW-0923	MW21-GW-0324	MW21-GW-0924	
Sample Date:	9/6/2023	3/12/2024	9/18/2024	10/30/2018	11/19/2018	12/4/2018	3/18/2019	4/16/2019	9/10/2019	3/3/2020	9/15/2020	3/24/2021	9/9/2021	3/23/2022	6/2/2022	6/2/2022	9/29/2022	3/22/2023	9/6/2023	3/13/2024	9/17/2024	
(Duplicate)																						
Parameters	Units																					
Appendix III																						
Boron	mg/L	0.542	0.909	1.55	0.225	<0.200	0.194	<0.200	--	<0.200	<0.200	0.165	0.141	0.162	0.156	--	--	0.219	0.158	0.118	0.164	0.180
Calcium	mg/L	193	205	262	154	149	154	151	--	140	136	140	125	130	132	--	--	107	122	135	152	169
Chloride	mg/L	63.4	156	61.6	4.36	<5.00	3.68	5.36	--	7.82	8.61	7.89	8.95	8.89	7.39	--	--	8.42	8.12	7.57	6.82	14.5
Fluoride	mg/L	<1.00	<1.00	<1.00	0.215	<0.500	0.325	<0.500	--	<0.500	<0.500	0.553	<0.500	<0.500	<0.500	--	--	<0.500	<0.500	<1.00	<1.00	<1.00
pH, lab	s.u.	7.6 J	7.5 J	7.1 J	6.9 J	7.0 J	7.1 J	7.1 J	--	7.0 J	7.1 J	7.1 J	7.1 J	7.2 J	7.2 J	--	--	7.1 J	7.2 J	7.6 J	7.6 J	6.9 J
Sulfate	mg/L	176	181	398	37.4	41.0	38.3	59.6	--	51.6	64.4	74.8	13.8	8.46	<5.00	--	--	7.78	<5.00	10.2	17.4	79.7
Total dissolved solids (TDS)	mg/L	854	1000	1230	574	568	626	560	--	544	552	452	424	372	--	--	--	384	442	468	498	594
Appendix IV																						
Antimony	mg/L	<0.00200	<0.00200	<0.00200	--	--	--	<0.00100	--	<0.00100	<0.00100	--	<0.00200	<0.00200	<0.00200	--	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200
Arsenic	mg/L	0.0114	0.0167	0.0124	<0.00200	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--	--	<0.00200	0.00235	<0.00200	0.00680	0.00210
Barium	mg/L	0.155	0.159 J+	0.0975 J+	0.219	0.204	0.211	0.223	--	0.178	0.166	0.212	0.271	0.318	0.430	--	--	0.324	0.474	0.433	0.483 J+	0.254
Beryllium	mg/L	<0.00100	<0.00100	<0.00100	--	--	--	<0.00100	--	<0.00100	<0.00100	--	<0.00100	<0.00100	<0.00100	--	--	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cadmium	mg/L	<0.000200	<0.000200	<0.000200	--	--	--	<0.000500	--	<0.000130	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	--	--	<0.000100	<0.000100	<0.000100	<0.000200	<0.000200
Chromium	mg/L	<0.00500	<0.00500	<0.00500	--	--	--	<0.00500	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Cobalt	mg/L	0.000623	0.00142	0.00147	0.00104	0.000684	0.000545	0.000683	--	<0.000500	<0.000500	0.00131	0.000624	0.00187	0.00585	--	--	0.00416	0.00491	0.00330	0.00543	0.000951
Lead	mg/L	<0.000500	<0.000500	<0.000500	--	--	--	0.000517	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	--	--	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Lithium	mg/L	0.0990	0.0921	0.120	0.0806	0.0707	0.0841	0.0768	--	0.0621	0.0686	0.0669	0.0680	0.0701	0.0764	--	--	0.0670	0.0648	0.0716	0.0711	0.0677
Mercury	mg/L	<0.000200	<0.000200	<0.000200	--	--	--	<0.000200	--	<0.000200	<0.000200	--	<0.000200	<0.000200	<0.000200	--	--	<0.000200	<0.000200	<0.000200	<0.000200	<0.000200
Molybdenum	mg/L	<0.00200	<0.00200	<0.00200	0.00243	<0.00200	<0.00200	<0.00200	--	<0.00200	<0.00200	<0.00200	0.00225	<0.00200	<0.00200	--	--	<0.00200	0.00223	<0.00200	<0.00200	<0.00200
Radium-226 & 228	pCi/L	0.993	1.19	0.297	2.21	0.934	1.03	0.952	--	0.850	0.825	1.24	1.69	1.88	2.79	3.06	2.34	2.94	2.24	2.88	4.56	1.67
Selenium	mg/L	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	--	--	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Thallium	mg/L	<0.00100 J	<0.00100	<0.00100	--	--	--	<0.00100	--	<0.00100	<0.00100	--	0.00136	<0.00100	<0.00100	--	--	<0.00100	0.00154	<0.00100 J	<0.00100	<0.00100
Other																						
Aluminum	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic III	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic V	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	mg/L	--	--	--	<0.100	<0.100	0.0526	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/L	--	--	--	40.3	37.2	38.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	mg/L	--	--	--	0.344	0.245	0.205	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	mg/L	--	--	--	9.61	8.98	9.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	mg/L	--	--	--	7.41	6.58	6.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	0.276	0.224	0.224	0.688	0.399	0.178	0.256 J	--	0.121	0.150	0.784	0.416	0.456	1.00	0.789	0.571	0.440	0.533	0.552	0.653	0.175
Radium-228	pCi/L	0.717	0.963	0.0734	1.52	0.535	0.856	0.697	--	0.729	0.675	1.10	0.825	1.24	1.79	2.27	1.77	2.50	1.70	2.33	3.90	1.50
Alkalinity (as CaCO3 pH=4.5)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, bicarbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, carbonate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity, total (as CaCO3)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia-N	mg/L	--	--	--	<0.200	<0.200	<0.200	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate (as N)	mg/L	--	--	--	4.25	4.70	4.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrite (as N)	mg/L	--	--	--	<0.100	<0.100	0.128	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silica (dissolved)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOC average duplicates	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total kjeldahl nitrogen (TKN)	mg/L	--	--	--	<1.00	<1.00	<1.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total nitrogen	mg/L	--	--	--	4.25	4.70	4.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total suspended solids (TSS)	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
U - Not detected at the associated reporting limit.
J - Estimated concentration.

Appendix F

Performance Monitoring Evaluation Report



Performance Monitoring Evaluation Report

**IDNR Permit 97-SDP-13-98C
EPA UIC ID No. IAS193260006
Neal South CCR Monofill
Salix, Iowa**

MidAmerican Energy Company

January 31, 2025

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Figure 3.13	MW-43 Performance Monitoring Evaluation Graph
Figure 3.14	MW-49 Performance Monitoring Evaluation Graph
Figure 3.15	MW-50 Performance Monitoring Evaluation Graph
Figure 3.16	MW-51 Performance Monitoring Evaluation Graph
Figure 3.17	MW-52 Performance Monitoring Evaluation Graph
Figure 3.18	MW-53 Performance Monitoring Evaluation Graph

Appendices

Appendix A	Groundwater Flow Maps for Corrective Action Monitoring Events
Appendix B	Performance Monitoring Evaluation Data Summary
Appendix C	Mann-Kendall Analyses

1. Introduction

This Performance Monitoring Evaluation (PME) Report provides a summary of post-injection monitoring data associated with remedial activities at MidAmerican Energy Company's (MidAmerican's) Neal South Energy Center (Neal South) Coal Combustion Residue (CCR) Monofill (Monofill). The corrective action associated with the Neal South CCR Monofill is in situ injection of calcium polysulfide in the vicinity of monitoring wells MW-2 and MW-10 to treat arsenic present in groundwater above the site-specific groundwater protection standard (GWPS) for arsenic, which was 0.0224 milligrams per liter (mg/L) at the time of the injection. The background value for arsenic, which is the site-specific GWPS, has been updated to 0.0413 mg/L this reporting period reflecting changing upgradient conditions as discussed in Section 4.1 of this report. The injections were completed in August 2020 and this PME Report summarizes data collected through September 2024.

The Neal South Monofill is located in Section 24, Township 86N, Range 47W in Woodbury County, Iowa. The site location map and monitoring well network are illustrated on Figure 1.1 and Figure 1.2, respectively.

2. Treatment Overview

In situ chemical injections occurred August 5 through 12 and August 17 through 19, 2020 (GHD, 2020b). A solution of Remotox (29% calcium polysulfide) was injected into direct-push injection borings for the treatment of arsenic in groundwater. The injection point locations were surveyed and staked prior to mobilization and injection. Injections were planned on roughly a 30-foot spacing interval (15-foot radius of influence) and a 20-foot vertical injection interval. The MW-2 area is approximately 34,600 square feet and had a total of 51 injection locations completed along four east-west transects (Figure 1.3). The MW-10 area is approximately 18,200 square feet and had a total of 29 locations completed generally along four east-west transects (Figure 1.4).

3. Groundwater Monitoring

The site-specific GWPS for arsenic is based on local background groundwater conditions. The groundwater monitoring data presented in this PME Report were generated in accordance with the PME Plan (GHD, 2020a) developed for the Neal South CCR Monofill corrective measures. The Hydrologic Monitoring System Plan (HMSP) for the Neal South Monofil (GHD, 2020c) was developed to meet the Federal CCR rule monitoring and reporting requirements. The PME Plan is written to supplement the HMSP to comply with 40 Code of Federal Regulations (CFR) §257.98 (a)(1) to establish and implement a groundwater monitoring program that documents the effectiveness of the corrective action remedy.

Currently, semiannual assessment groundwater monitoring is completed in accordance with the procedures outlined in the November 10, 2020 HMSP (GHD, 2020c) and the January 31, 2019 Groundwater Monitoring System Certification for the Neal South CCR Monofill (Certification) (GHD, 2019). Assessment groundwater monitoring is summarized in the Annual Groundwater Monitoring and Corrective Action Report (AGWMCAR), due by January 31 of each year.

Semiannual assessment monitoring events are conducted in accordance with 40 CFR §257. Multiple groundwater monitoring events specific to the corrective action were also completed since 2020 as described in the PME Plan (GHD, 2020a). The following groundwater monitoring events were completed in accordance with the PME Plan in support of the corrective action:

- July 28-29, 2020 (pre-injection groundwater monitoring event)
- September 14-16, 2020 (post-injection monitoring event)
- October 21-22, 2020 (post-injection monitoring event)
- November 16-18, 2020 (post-injection monitoring event)
- March 22-23 and 29, 2021 (post-injection monitoring event)
- June 22-23, 2021 (post-injection monitoring event)
- September 8-9, 2021 (post-injection monitoring event)
- March 21-23, 2022 (post-injection monitoring event)
- September 27-29, 2022 (post-injection monitoring event)
- March 20-24, 2023; April 4, 2023 (post-injection monitoring event)
- September 5-6, 2023 (post-injection monitoring event)
- March 11-12, 2024 (post-injection monitoring event)
- September 16-17, 2024 (post-injection monitoring event)

Groundwater flow maps for each of the 2024 corrective action monitoring events are provided in Appendix A.

4. Performance Evaluation

As outlined in the PME Plan, a five-year post-injection monitoring period was established to evaluate the overall effectiveness of the in situ injection corrective measure. The factors specified in 40 CFR §257.97(d) were considered in developing the anticipated five-year monitoring period; this monitoring period is expected to allow time for the effect of the in situ injection along with the closure of the Neal South Monofill (including capping and installation/operation of a leachate collection system) to be evaluated.

The following Sections evaluate monitoring data obtained from the upgradient/background well network (Section 4.1), the MW-2 Area (Section 4.2), and the MW-10 Area (Section 4.3). Data obtained to date represent four years of the five-year evaluation period with the first year representative of disturbed subsurface conditions. Observed trends discussed in Sections 4.2 and 4.3 are considered preliminary. PME water quality data are summarized in Appendix B. A Mann-Kendall statistical analysis of the dataset has been performed to provide an objective evaluation of trends for each area with outputs summarized in Appendix C.

4.1 Upgradient/Background Concentrations

Spatial and temporal variability of arsenic concentrations in the upgradient, background wells (MW-16, MW-17, and MW-18) is evident as discussed in the annual groundwater monitoring and corrective action reports (GHD, 2020d, 2021, 2022a, 2023a). In the initial evaluation of the baseline data (GHD, 2020d), the presence of spatial variability among Neal South Monofill background wells (MW-16, MW-17, and MW-18) was evident for many detected constituents. The spatial variability affects inter-well comparisons for downgradient wells since observed differences between downgradient and upgradient conditions could be due to natural variability or could be due to effects of the Neal South Monofill. An inter-well comparison alone could not distinguish between these two possibilities.

To further evaluate the background monitoring locations, MW-16, MW-17, and MW-18 data were graphed on Figures 3.1 through 3.3. Monitoring well MW-18 has historically shown variability in arsenic concentrations below the GWPS, however, the sampling result from March 2021 showed an increase in arsenic (Figure 3.3). The March 2021

arsenic result was identified as a potential high outlier (GHD, 2022a), but there was no identified basis for a likely error or discrepancy to warrant removal of the sample result from the evaluation. The September 2021 sample showed a decrease in the arsenic concentration at MW-18. The March 2022 and September 2022 arsenic results from MW-18 were generally consistent with the September 2021 result. As a result, the background arsenic concentration was recalculated, removing the March 2021 arsenic result as a high outlier.

Arsenic data at upgradient wells MW-16, MW-17, and MW-18 were identified with a statistically significant trend over time (violating the stationarity assumption of the tolerance limit calculations), therefore a recent period was selected that represented a more stable condition. The arsenic upper tolerance limit (UTL) was then calculated using data from 2020 through to 2024 as the inter-well baseline period. Both 2024 sampling events were slightly higher than the 2023 sampling events for MW-18, but were fairly consistent with arsenic concentrations reported since September 2021 (0.0260 mg/L in March 2024 and 0.0243 mg/L in September 2024). The calcium and sulfate concentrations continue to show increasing patterns in concentrations during the post-injection period, however, due to the spatial separation between injection locations and MW-18 the increase is not attributed to injection activities.

During the corrective action planning and injection, the site-specific GWPS for arsenic was 0.0224 mg/L. Initially, the background arsenic data set consisted of groundwater samples collected between October 2018 and September 2022 at upgradient wells MW-16, MW-17, and MW-18. Arsenic data were combined from the three upgradient wells to calculate the background value. A total of 48 results (16 results per well) were available, with a 33% non-detect rate (MW-16 arsenic concentrations were all non-detect). One outlier was detected (0.224 ug/L at well MW-18 sampled in March 2021) and removed from the background evaluation. A Regional Kendall trend test case was conducted to evaluate the trend in the data set and an increasing trend was identified in the pooled arsenic data.

Due to continued variability in background water quality near the Neal South Monofill an update to the site-specific GWPS for arsenic was warranted for this reported period. In the evaluation for this reporting period, the arsenic UTL was calculated using data from September 2020 through September 2024 (with the exception of the potential outlier datapoint for March 2021 arsenic at MW-18) to reflect the changing upgradient conditions. A total of 26 samples with arsenic detections were used in this calculation. In the dataset used from September 2020 to September 2024, 35% of the samples were non-detect. The 95/95 UTL was recalculated as 0.0413 mg/L and the 99/95 UTL was recalculated as 0.0509 mg/L. For purposes of the 2024 PME, both the original site-specific GWPS (0.0224 mg/L) and the 2024 updated site-specific GWPS (0.0413 mg/L) values are considered.

A recent period consisting of the last 9 arsenic results in each well was selected in an attempt to avoid a trend in the data set. The combined data set consisted of a total of 26 arsenic analyses (9 per upgradient well) and did not have a statistically significant trend. Therefore, this data set was used to calculate updated GWPS in this reporting period. Calculations were completed using EPA's ProUCL software.

4.2 MW-2 Area Evaluation

Figures 3.4 through 3.11 provide stacked trend charts for groundwater elevation and turbidity above arsenic, calcium, and sulfate concentrations for the MW-2 area (MW-2, MW-26, MW-28, MW-30, MW-32, MW-33, MW-34, and MW-36). Figure 1.2 shows the monitoring locations. Table 1 provides a summary of key observations related to the performance monitoring data collected to date for the MW-2 area.

Table 1 MW-2 Area Mann-Kendall Trend Analysis Summary for Arsenic.

Monitoring Well (September 2024 Arsenic Result)	Mann-Kendall Trend (0.95 Confidence)	Comparison to SS-GWPS of 0.0224 mg/L	Comparison to SS-GWPS of 0.0413 mg/L	Observation(s)
MW-2 (0.0200 mg/L)	Decreasing	Below in September 2024	Below in September 2024	MW-2 had a sharp increase in arsenic concentration following the corrective measures injection (Figure 3.4). The arsenic concentration has been below the pre-corrective measures concentration for the last seven sampling events.

Monitoring Well (September 2024 Arsenic Result)	Mann-Kendall Trend (0.95 Confidence)	Comparison to SS-GWPS of 0.0224 mg/L	Comparison to SS-GWPS of 0.0413 mg/L	Observation(s)
MW-26 (<0.00200 mg/L)	No trend identified	Below in September 2024	Below in September 2024	MW-26 remains non-detect for arsenic (Figure 3.5).
MW-28 (0.0274 mg/L)	Decreasing	Above in September 2024	Below in September 2024	MW-28 continued an upward trend for one sampling event following the injection but trended to below the site-specific GWPS of 0.0413 mg/L for the next eleven events (Figure 3.6). MW-28 had been below the original site-specific GWPS (0.0224 mg/L) since September 2022 but was above in September 2024.
MW-30 (0.0599 mg/L)	No trend identified	Above in September 2024	Above in September 2024	MW-30 exhibited variability in arsenic concentrations since the injection, with the most recent result above both the original site-specific GWPS (0.0224 mg/L) and the updated site-specific GWPS (0.0413 mg/L) (Figure 3.7).
MW-32 (0.0256 mg/L)	Increasing	Above in September 2024	Below in September 2024	MW-32 was above the original site-specific GWPS (0.0224 mg/L) but below the updated site-specific GWPS (0.0413 mg/L) for arsenic (Figure 3.8).
MW-33 (0.0149 mg/L)	No trend identified	Below in September 2024	Below in September 2024	MW-33 continued an upward trend for one sampling event following the injection and decreased to below the site-specific GWPS for arsenic (Figure 3.9).
MW-34 (0.0157 mg/L)	No trend identified	Below in September 2024	Below in September 2024	MW-34 remained below the site-specific GWPS for arsenic of 0.0413 mg/L (Figure 3.10).
MW-36 (0.0102 mg/L)	No trend identified	Below in September 2024	Below in September 2024	MW-36 exhibited variable arsenic concentrations but remained below the site-specific GWPS for arsenic of 0.0413 mg/L (Figure 3.11).

4.3 MW-10 Area Evaluation

Figures 3.12 through 3.18 provide stacked trend charts for groundwater elevation and turbidity above arsenic, calcium, and sulfate concentrations for the MW-10 area (MW-10, MW-43, MW-49, MW-50, MW-51, MW-52, and MW-53). Figure 1.2 shows the monitoring locations. Table 2 provides a summary of key observations related to the performance monitoring data collected to date for the MW-10 area.

Table 2 MW-10 Area Mann-Kendall Trend Analysis Summary for Arsenic.

Monitoring Well (September 2024 Arsenic Result)	Mann-Kendall Trend (0.95 Confidence)	Comparison to SS-GWPS of 0.0224 mg/L	Comparison to SS-GWPS of 0.0413 mg/L	Observation(s)
MW-10 (0.0446 mg/L)	Decreasing	Above in September 2024	Above in September 2024	MW-10 showed a decreasing arsenic concentration trend following the injection event (Figure 3.12) and was below the updated site-specific GWPS (0.0413 mg/L) from September 2021 through September 2023. During 2024, MW-10 was above the updated site-specific GWPS for arsenic for both sampling events.

Monitoring Well (September 2024 Arsenic Result)	Mann-Kendall Trend (0.95 Confidence)	Comparison to SS-GWPS of 0.0224 mg/L	Comparison to SS-GWPS of 0.0413 mg/L	Observation(s)
MW-43 (0.0896 mg/L)	Increasing	Above in September 2024	Above in September 2024	MW-43 maintained pre-injection arsenic concentrations for one event, had a steep decline in arsenic concentration from October 2020 to March 2021, and has been above the updated GWPS since June 2021 (Figure 3.13).
MW-49 (0.0443 mg/L)	No trend identified	Above in September 2024	Above in September 2024	MW-49 remained relatively consistent following the injection event with a slight decrease in arsenic concentrations following the injection event. Arsenic concentrations have been variable, with the most recent sample above the updated site-specific GWPS of 0.0413 mg/L (Figure 3.14).
MW-50 (0.00900 mg/L)	Decreasing	Below in September 2024	Below in September 2024	MW-50 arsenic concentrations decreased following the injection and remain relatively consistent (Figure 3.15).
MW-51 (0.00250 mg/L)	Increasing	Below in September 2024	Below in September 2024	MW-51 arsenic concentrations remained relatively consistent for three events following the injection, however results since then trended above the updated site-specific GWPS for arsenic, with the exception of the most recent sampling event (Figure 3.16).
MW-52 (<0.00200 mg/L)	No trend identified	Below in September 2024	Below in September 2024	MW-52 remained below the updated site-specific GWPS for arsenic following the injection (Figure 3.17).
MW-53 (<0.00200 mg/L)	No trend identified	Below in September 2024	Below in September 2024	MW-53 remained below the site-specific GWPS for arsenic following the injection (Figure 3.18).

5. Summary and Recommendations

Arsenic concentrations at the Neal South Monofill are below the updated site-specific GWPS for arsenic, with the exception of MW-30 in the MW-2 area and MW-10, MW-43, and MW-49 in the MW-10 area. Distribution of calcium polysulfide in the subsurface is evident by increases in calcium and sulfate following the injections. Continued groundwater monitoring in accordance with the PME Plan is recommended.

Continued evaluation of upgradient, background concentrations of arsenic and other Appendix III and Appendix IV parameters will be completed in accordance with the requirements of 40 CFR §257.

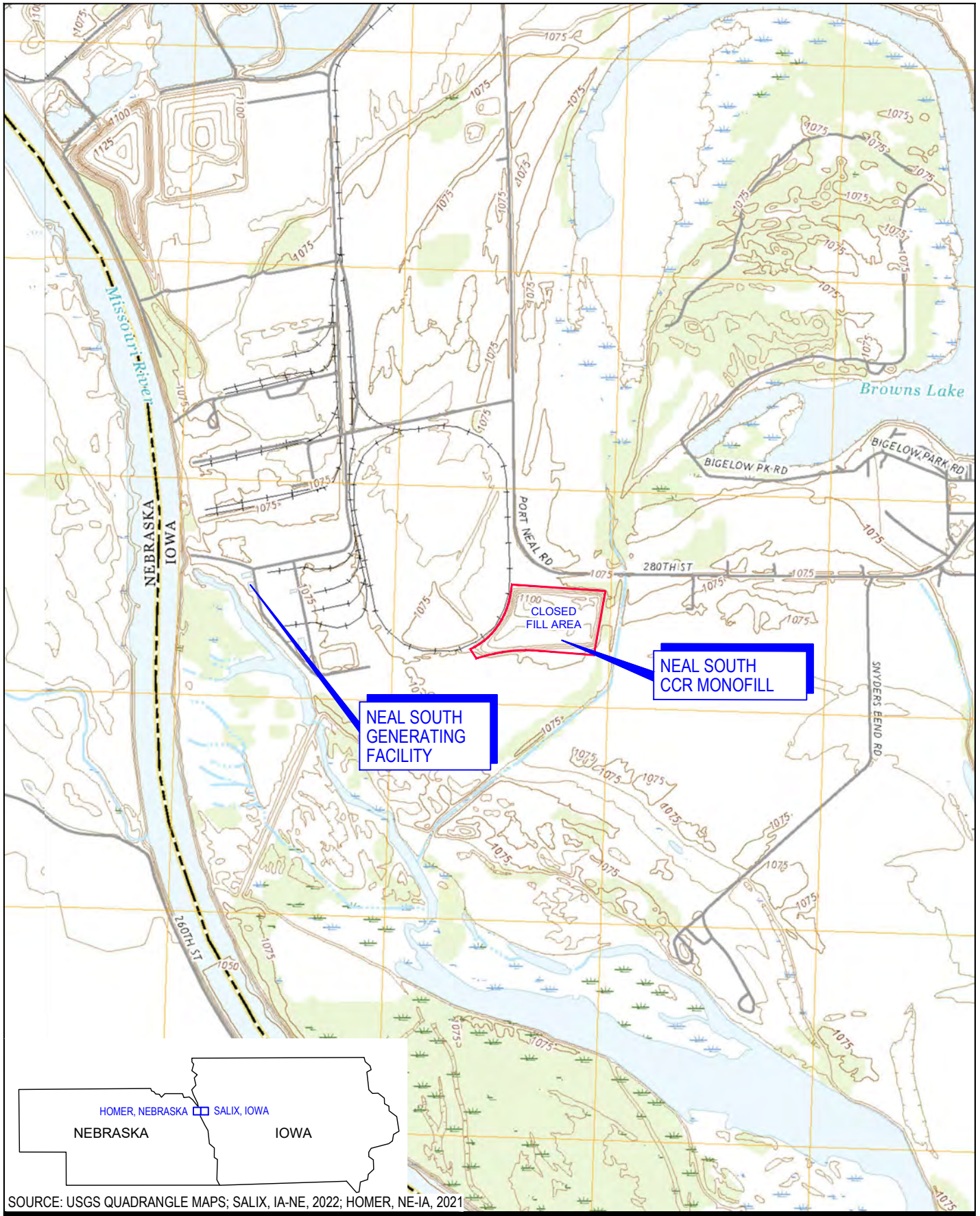
6. References

GHD, 2019. Groundwater Monitoring System Certification for the Neal South CCR Monofill, Salix, Iowa. Permit No. 97-SDP-13-98P. January 31, 2019.

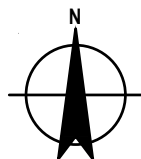
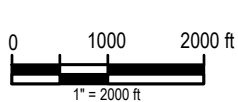
GHD, 2020a. Performance Monitoring Evaluation Plan for the Neal South CCR Monofill, Salix, Iowa. Permit No. 97-SDP-13-98P. June 3, 2020.

- GHD, 2020b. Corrective Measures Summary Report for In Situ Injections at the Neal South CCR Monofill. Permit No. 97-SDP-13-98P. October 13, 2020.
- GHD, 2020c. Hydrologic Monitoring System Plan, Neal South Energy Center Coal Combustion Residue Monofill, Salix, Iowa. Permit No. 97-SDP-13-98P. November 10, 2020.
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- GHD, 2023b. Performance Evaluation Report, IDNR Permit 97-SDP-13-98P, EPA UIC ID No. IAS193260006, Neal South CCR Monofill, Salix, Iowa. January 31, 2023.
- GHD, 2024a. Annual Groundwater Monitoring and Corrective Actions Report for the Neal South CCR Monofill, Salix, Iowa. Permit No. 97-SDP-13-98C. January 31, 2024.
- GHD, 2024b. Performance Evaluation Report, IDNR Permit 97-SDP-13-98P, EPA UIC ID No. IAS193260006, Neal South CCR Monofill, Salix, Iowa. January 31, 2024.

Figures



SOURCE: USGS QUADRANGLE MAPS; SALIX, IA-NE, 2022; HOMER, NE-IA, 2021



MIDAMERICAN ENERGY COMPANY
NEAL SOUTH CCR MONOFILL
SALIX, IOWA

Project No. 12576485
Date November 2024

SITE LOCATION

FIGURE 1.1

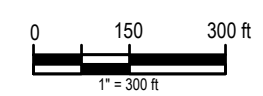


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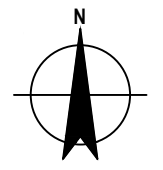
LEGEND

● MW-8	SHALLOW GROUNDWATER MONITORING WELL
● MW-7	DEEP GROUNDWATER MONITORING WELL
● MW-6	ABANDONED MONITORING WELL

△	UPGRADIENT SAMPLING LOCATION
□	DOWNGRADIENT SAMPLING LOCATION
◇	GAUGING LOCATION



Coordinate System:
NA83 STATE PLANE
IOWA NORTH

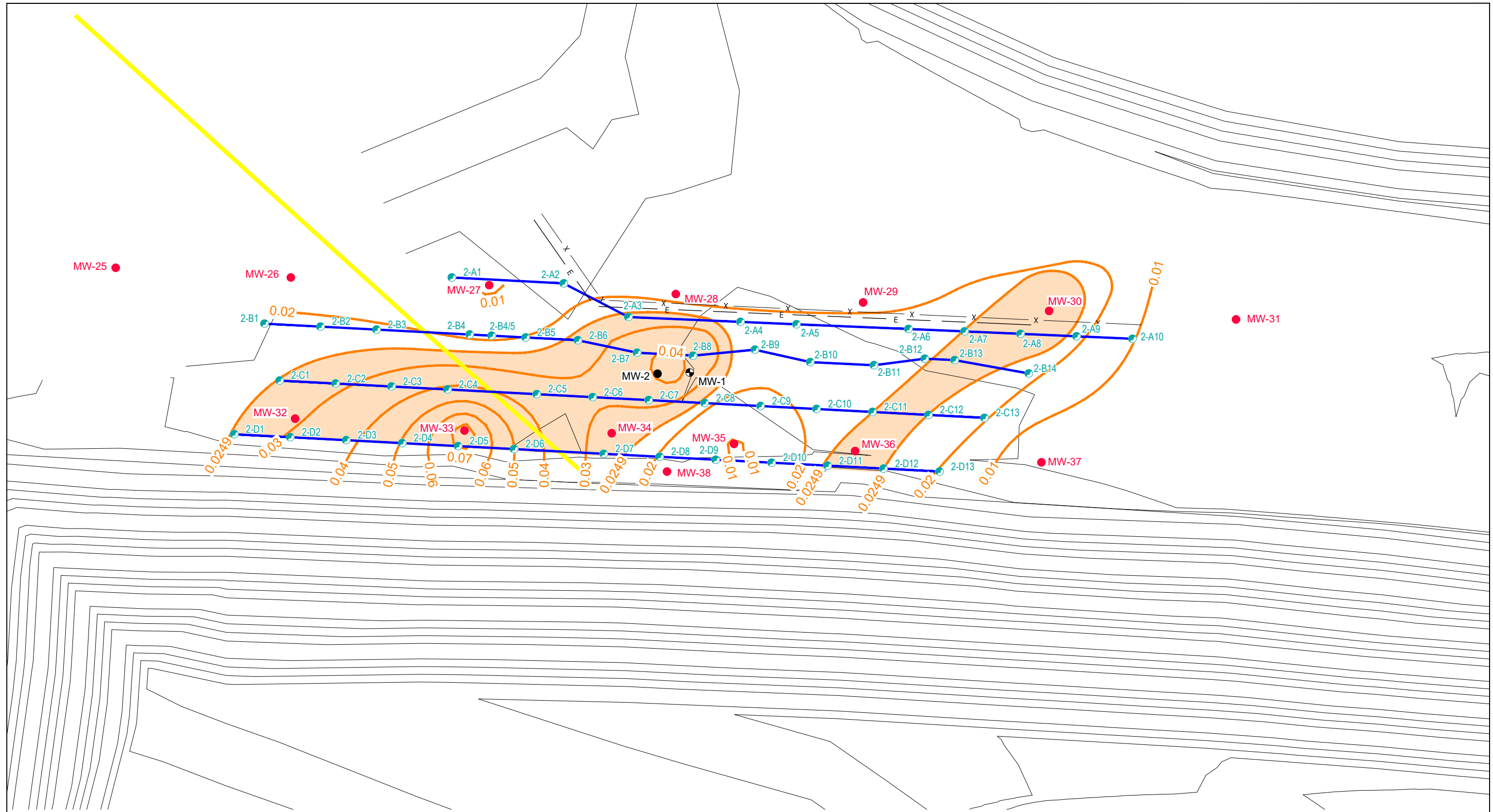


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NEAL SOUTH CCR MONOFILL
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**SITE MAP AND MONITORING WELL
LOCATIONS**

Project No. 12576485
Date November 2024

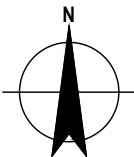
FIGURE 1.2



LEGEND

- MW-8 SHALLOW GROUNDWATER MONITORING WELL
- MW-7 DEEP GROUNDWATER MONITORING WELL
- PRE-DESIGN INVESTIGATION (SHALLOW MONITORING WELL)
- MW-6 ABANDONED MONITORING WELL
- INJECTION POINT
- AMMONIA PIPELINE (LOCATION APPROXIMATE)
- INJECTION TRANSECT
- 0.01 — DECEMBER 2019 ARSENIC CONCENTRATION CONTOUR (MG/L)
- x — FENCE LINE
- E — UNDERGROUND ELECTRICAL

0 25 50 ft



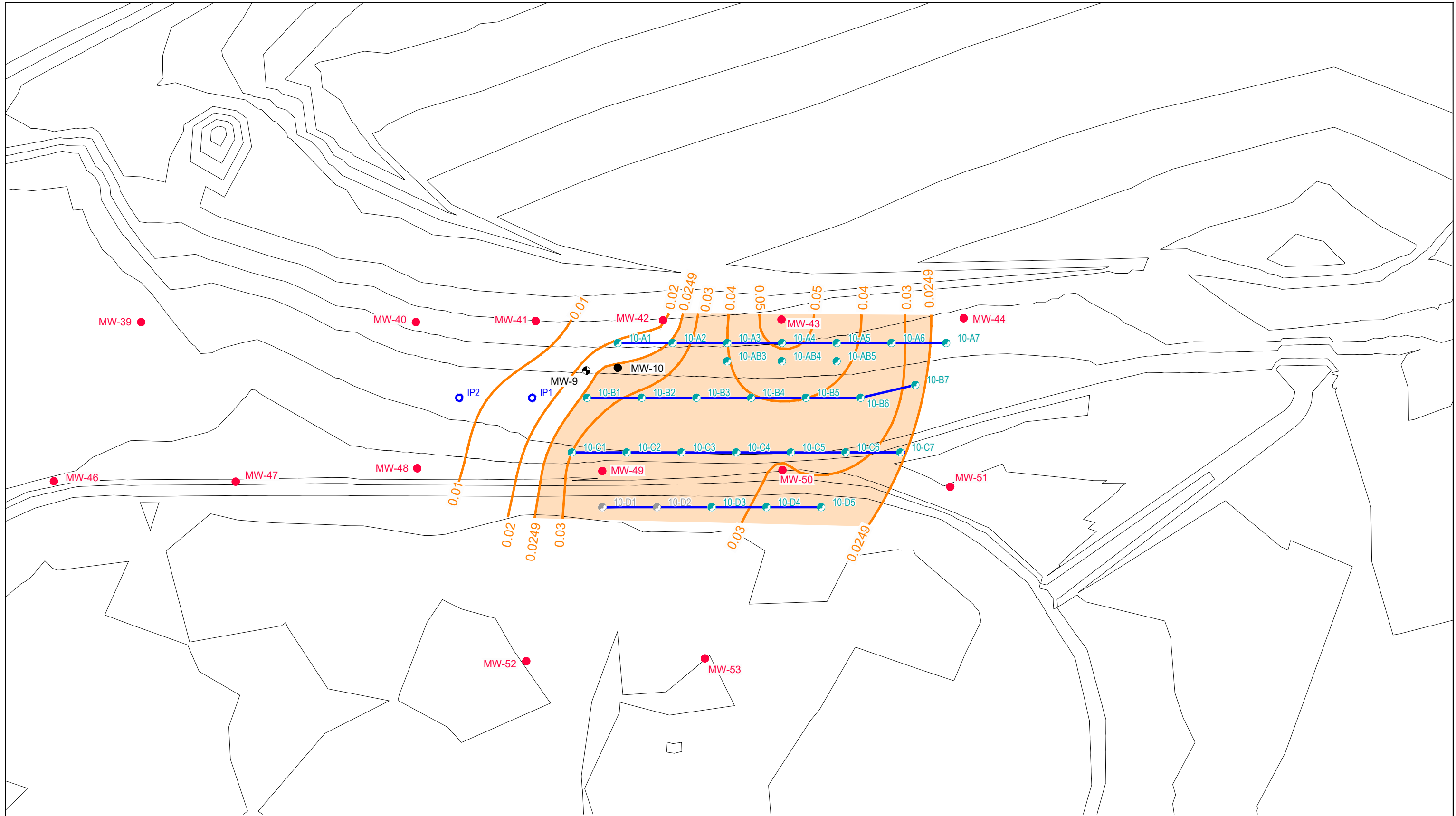
Coordinate System:
NA83 STATE PLANE
IOWA NORTH



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NEAL SOUTH CCR MONOFILL
SALIX, IOWA
**MW-2 AREA INJECTION TRANSECTS
(AUGUST 2020)**

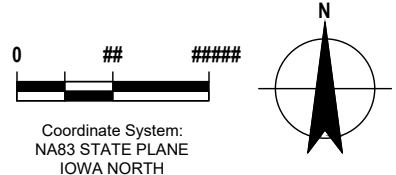
Project No. 12576485
Date November 2024

FIGURE 1.3



LEGEND

- MW-8 SHALLOW GROUNDWATER MONITORING WELL
- ⊕ MW-7 DEEP GROUNDWATER MONITORING WELL
- PRE-DESIGN INVESTIGATION (SHALLOW MONITORING WELL)
- ⊖ MW-6 ABANDONED MONITORING WELL
- MONITORING WELL
- INJECTION POINT
- RINSE-WATER INJECTION LOCATION
- AMMONIA PIPELINE (LOCATION APPROXIMATE)
- INJECTION TRANSECT
- 0.01 — DECEMBER 2019 ARSENIC CONCENTRATION CONTOUR (MG/L)



Coordinate System:
NA83 STATE PLANE
IOWA NORTH

NOTE:
INJECTIONS NOT COMPLETED AT 10-D1 AND 10-D2 DUE TO DAYLIGHTING OF INJECTANT. 10-AB3, 10-AB4 AND 10-AB5 ADDED IN PLACE OF 10-D1 AND 10-D2

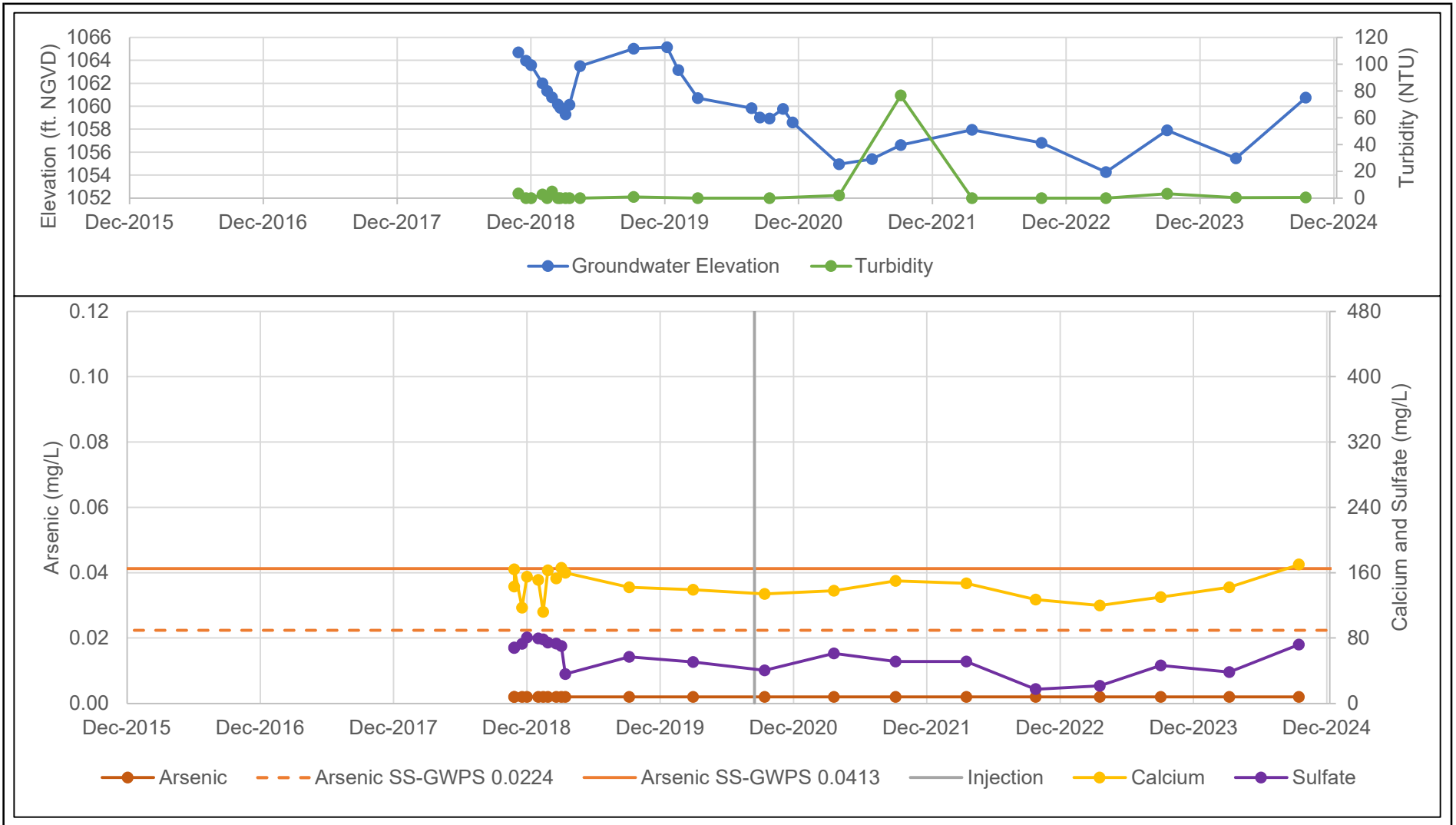


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SALIX, IOWA

**MW-10 AREA INJECTION TRANSECTS
(AUGUST 2020)**

Project No. 12576485
Date November 2024

FIGURE 1.4



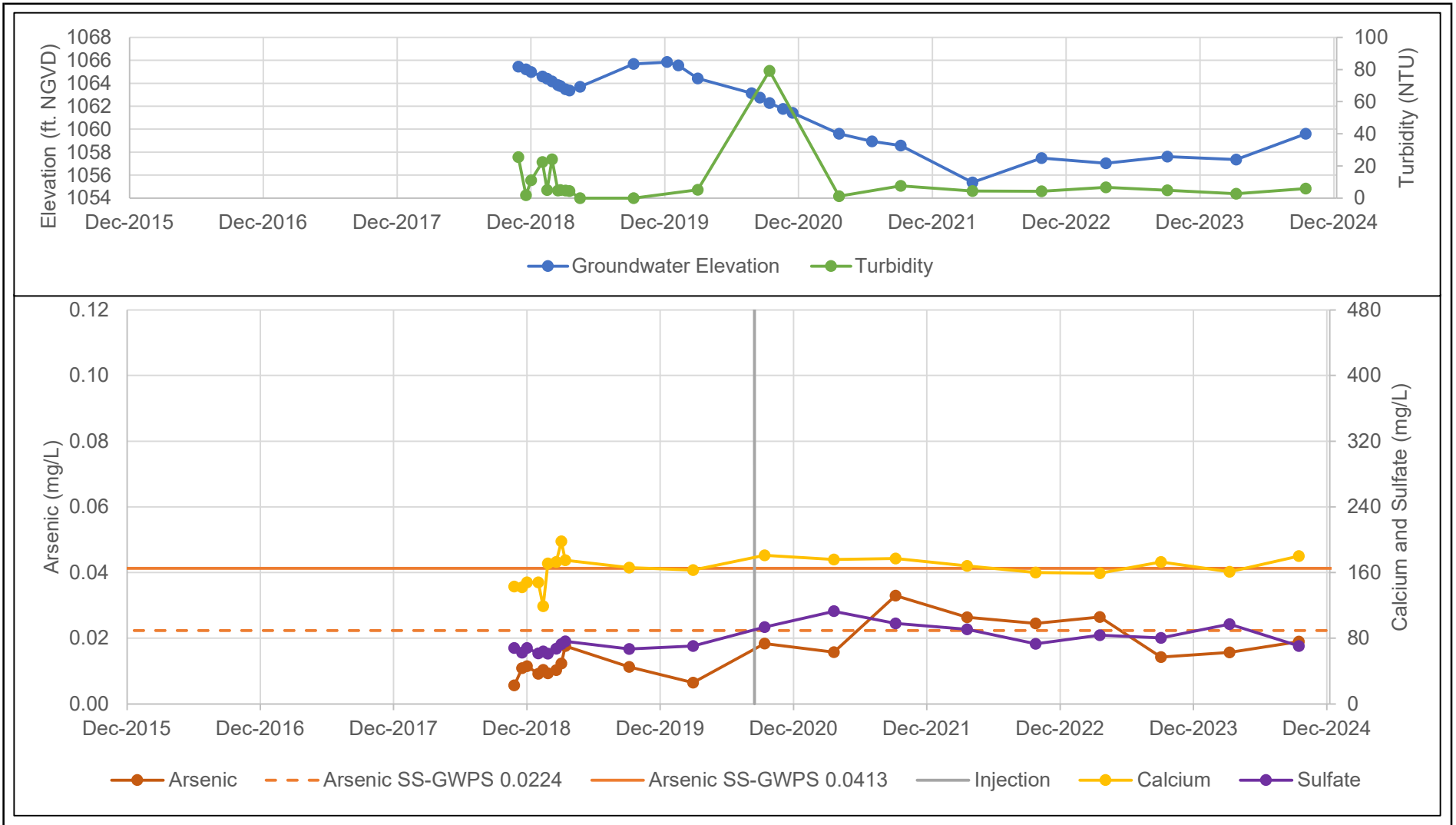
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 NEAL SOUTH CCR MONOFILL
 SALIX, IOWA

11205258

DEC. 16, 2024

MW-16 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.1

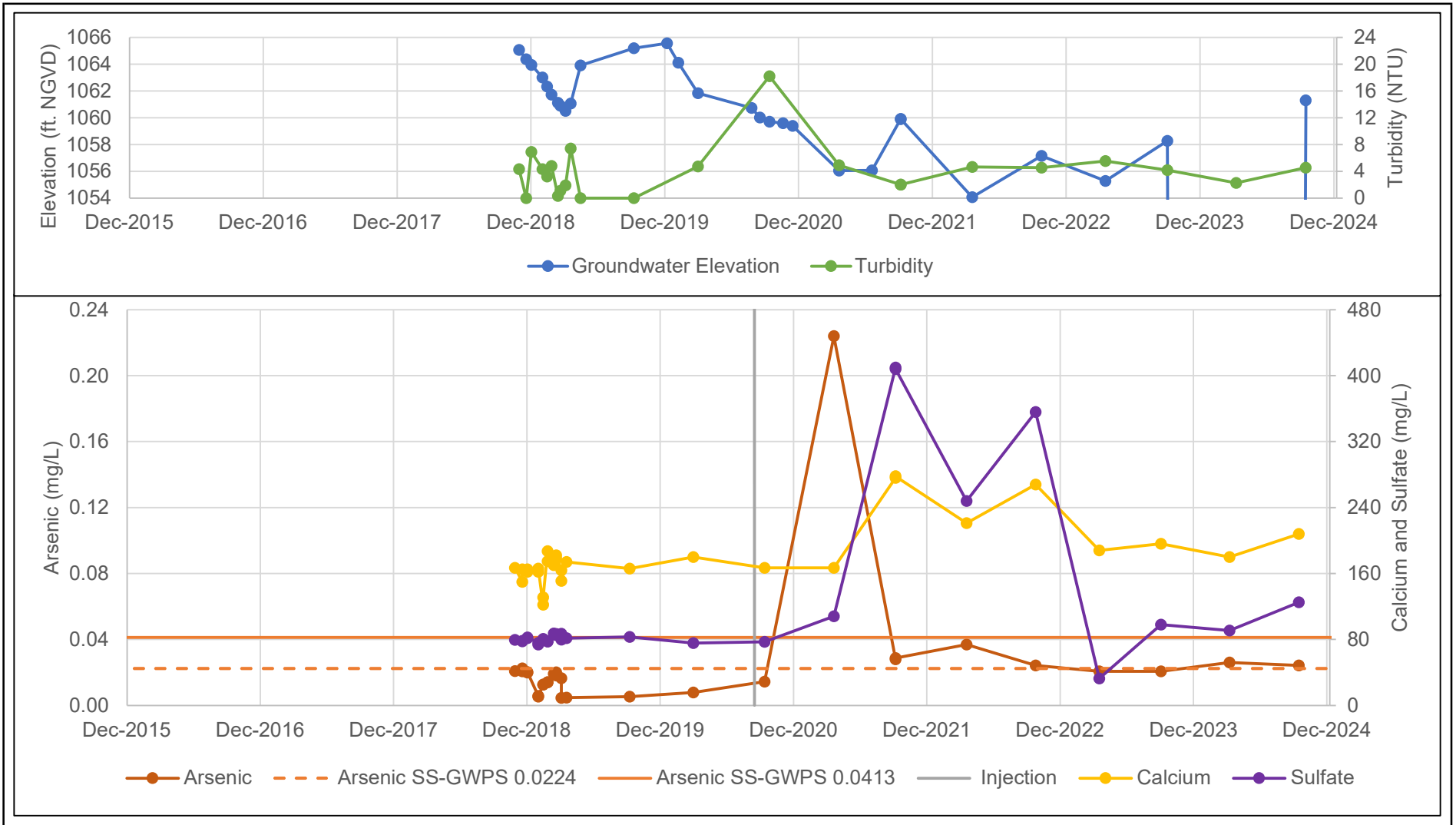


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MW-17 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.2

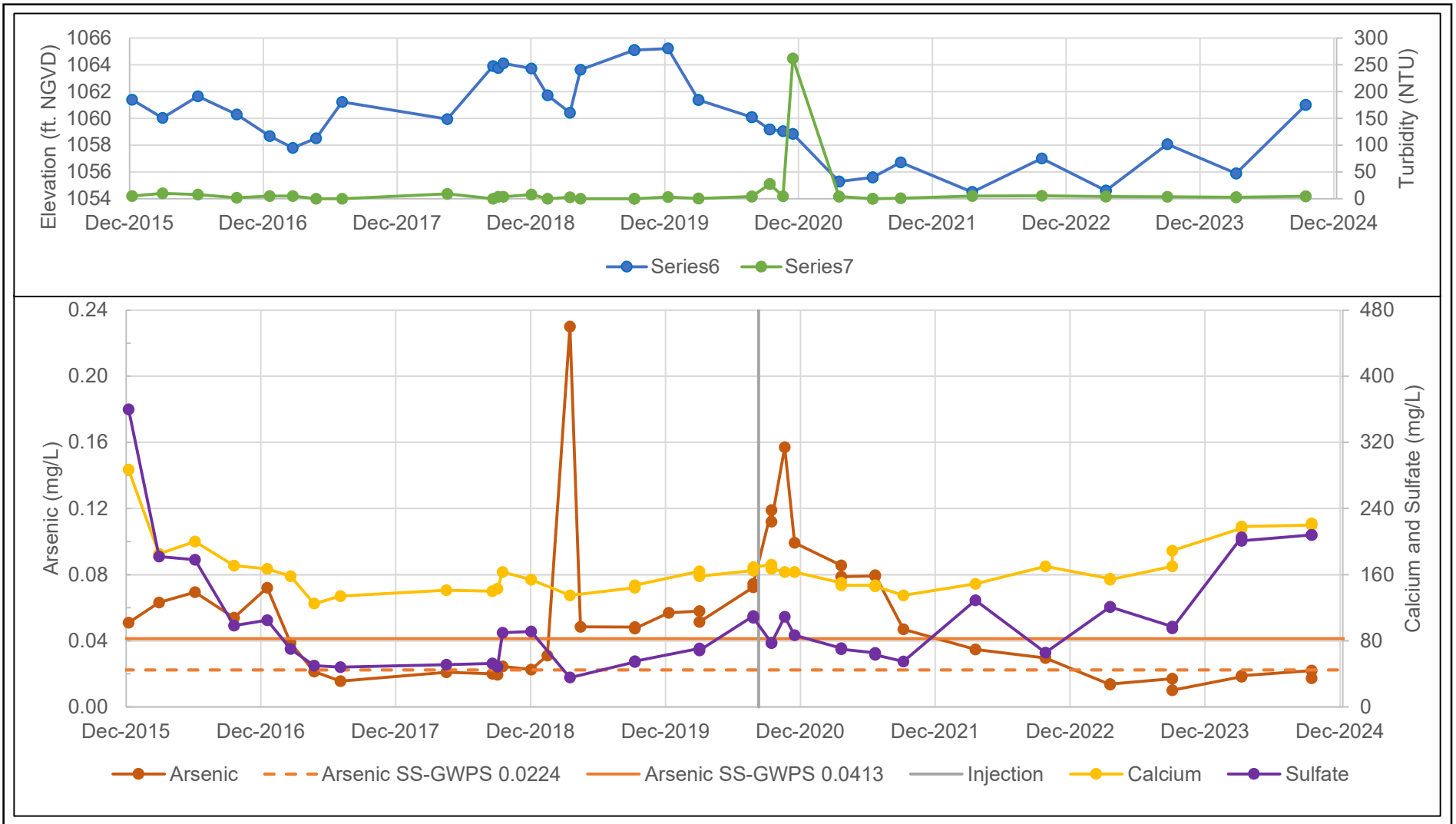


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MW-18 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.3



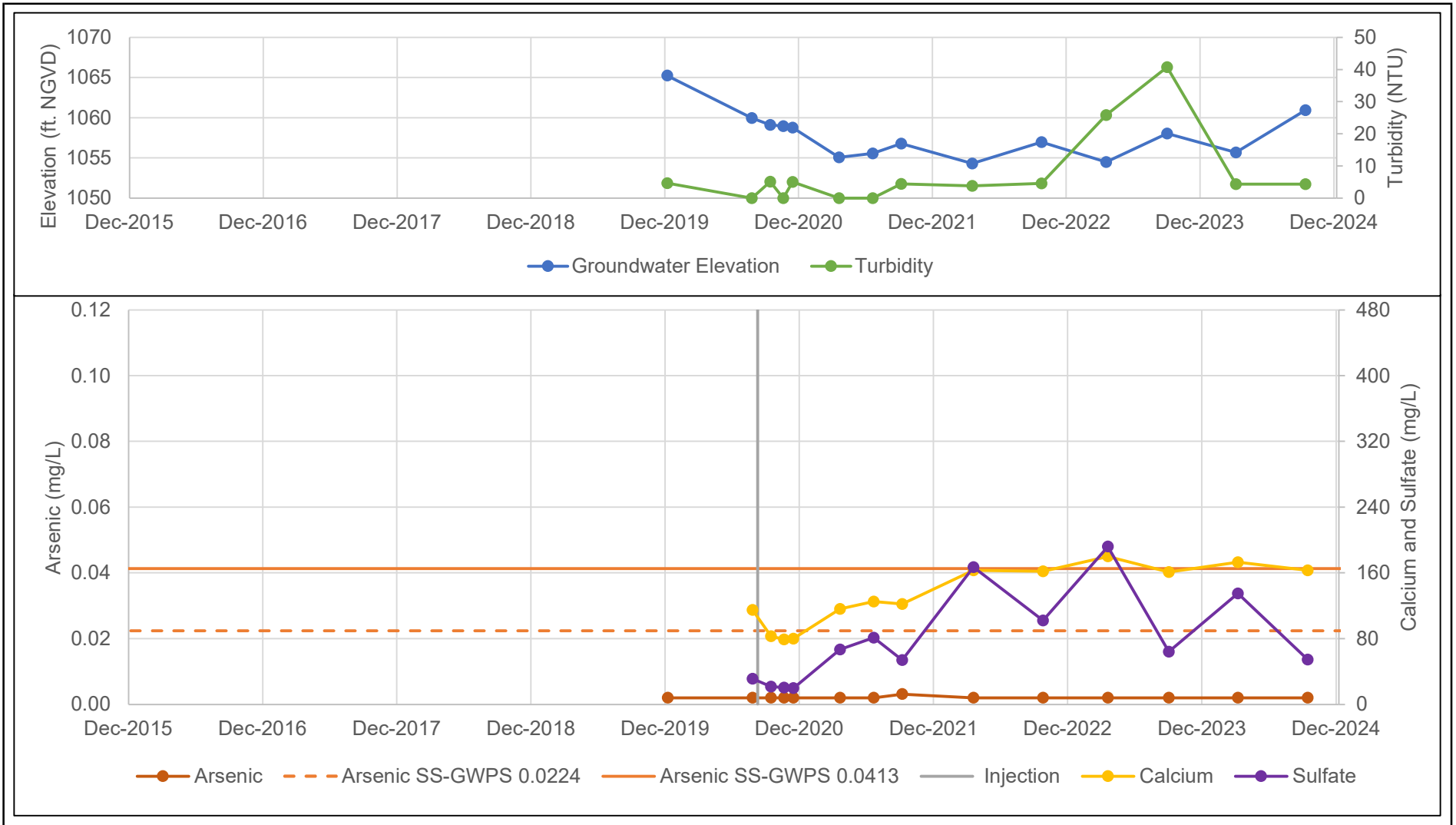
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DEC. 16, 2024

MW-2 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.4



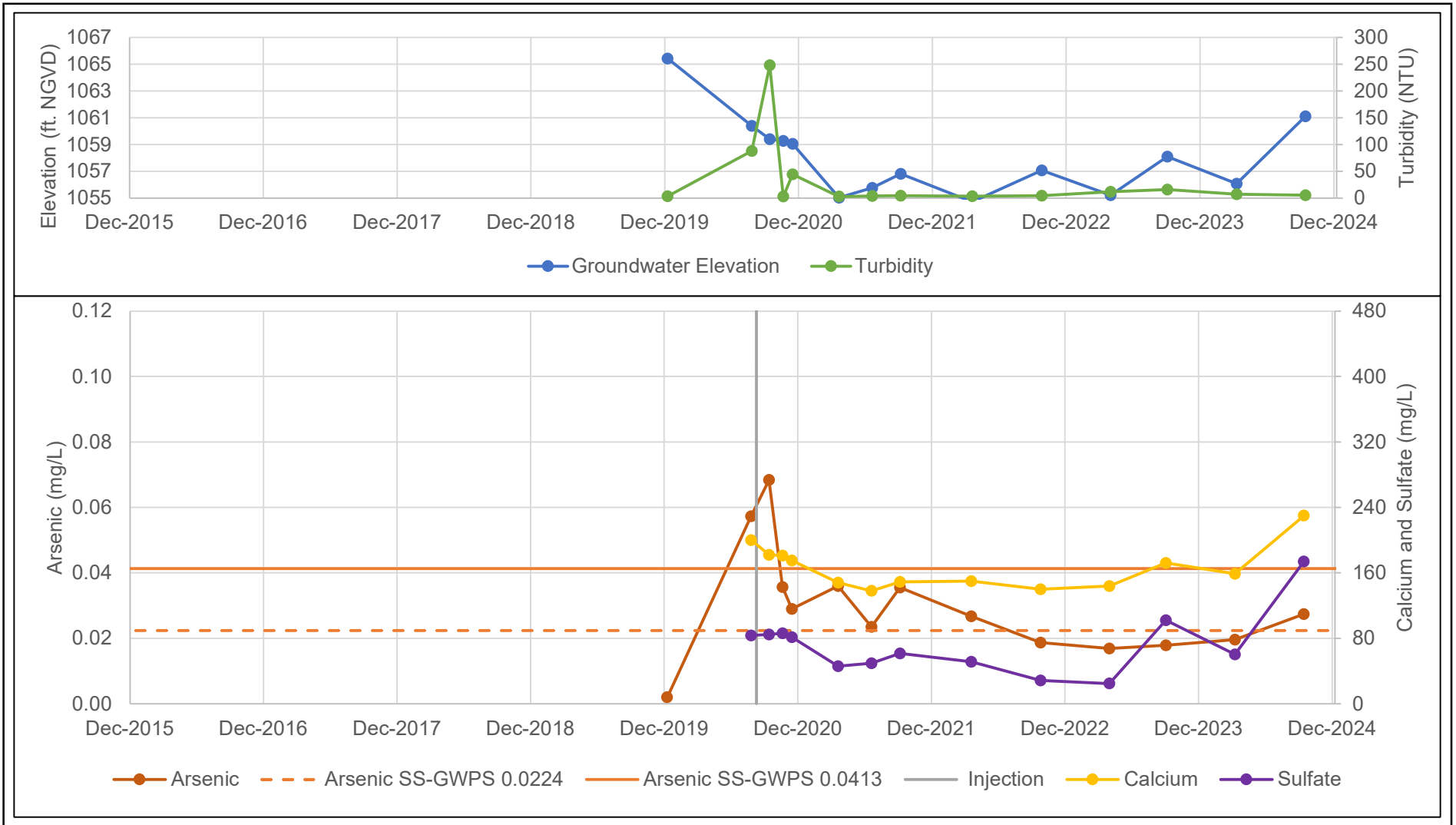
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DEC. 16, 2024

MW-26 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.5

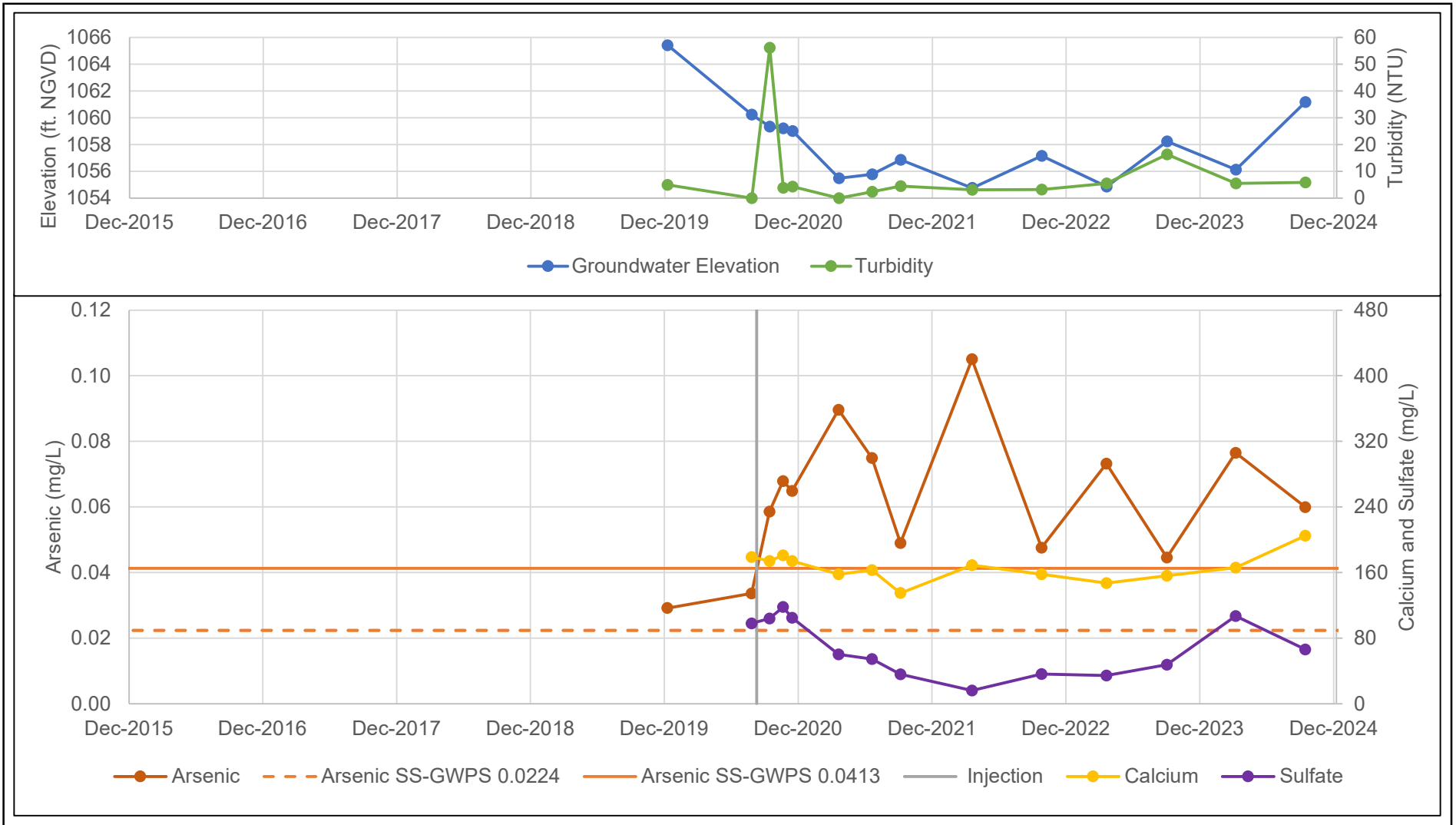


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 DEC. 16, 2024

MW-28 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.6



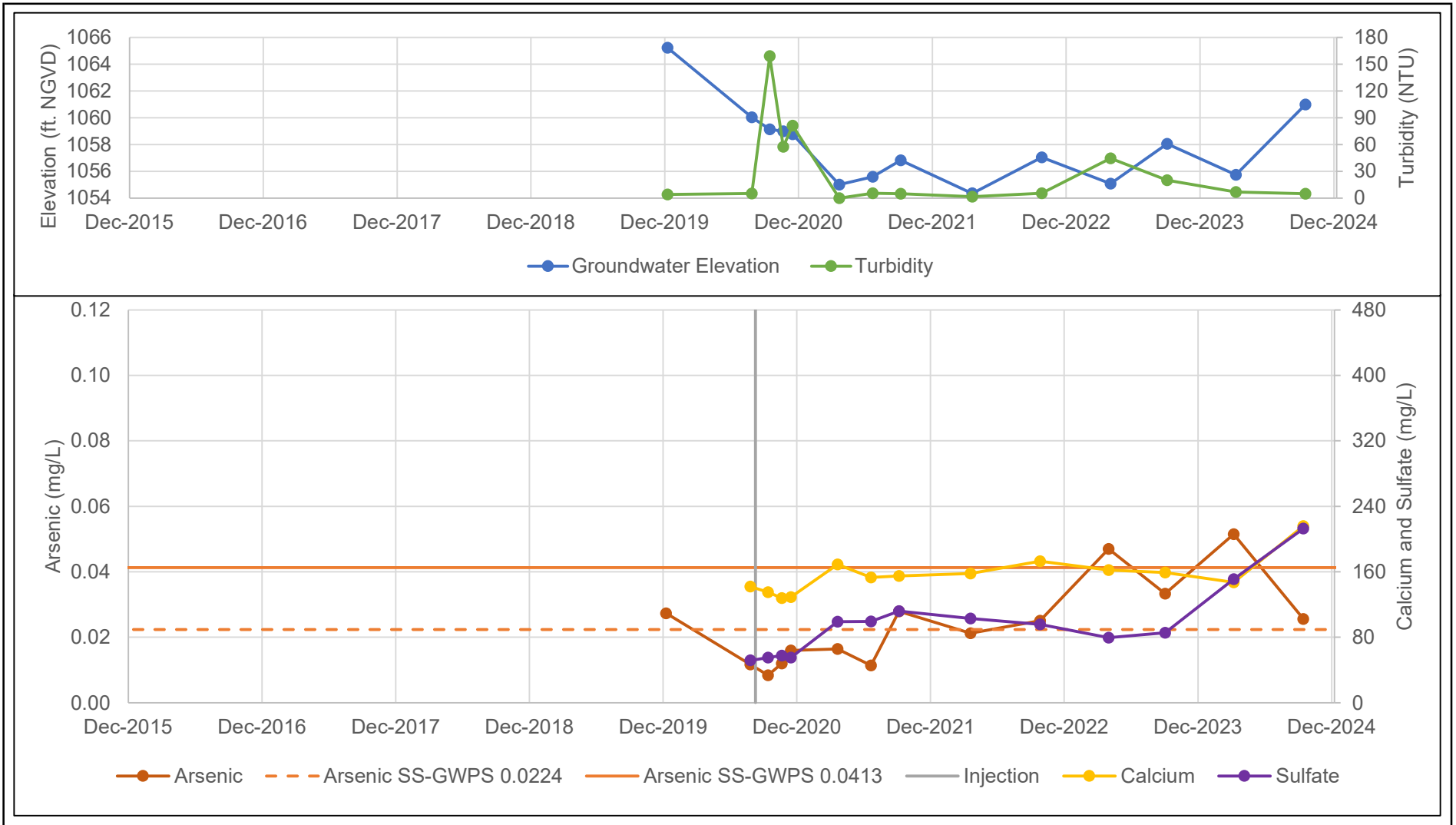
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DEC. 16, 2024

MW-30 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.7



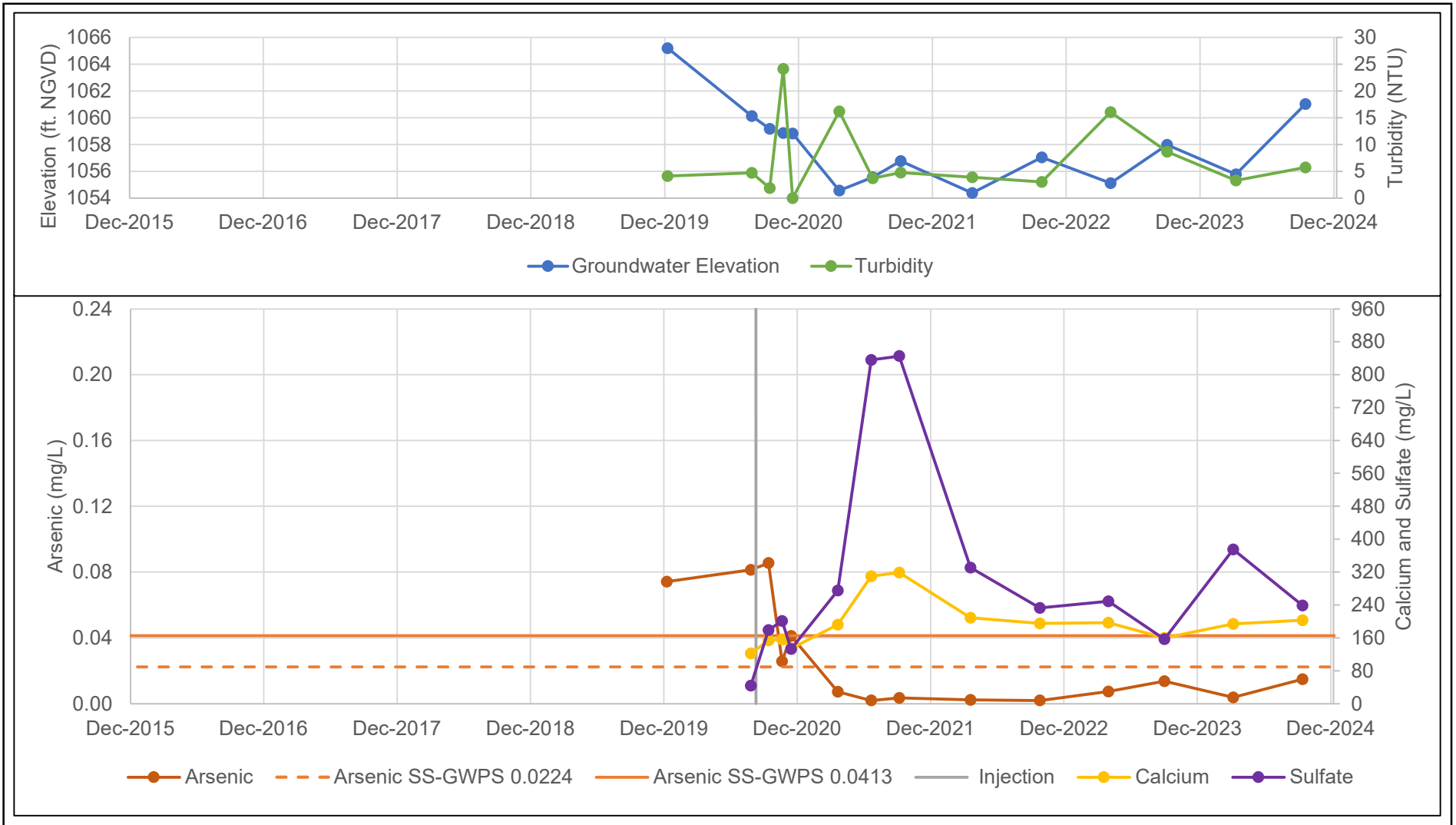
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DEC. 16, 2024

MW-32 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.8



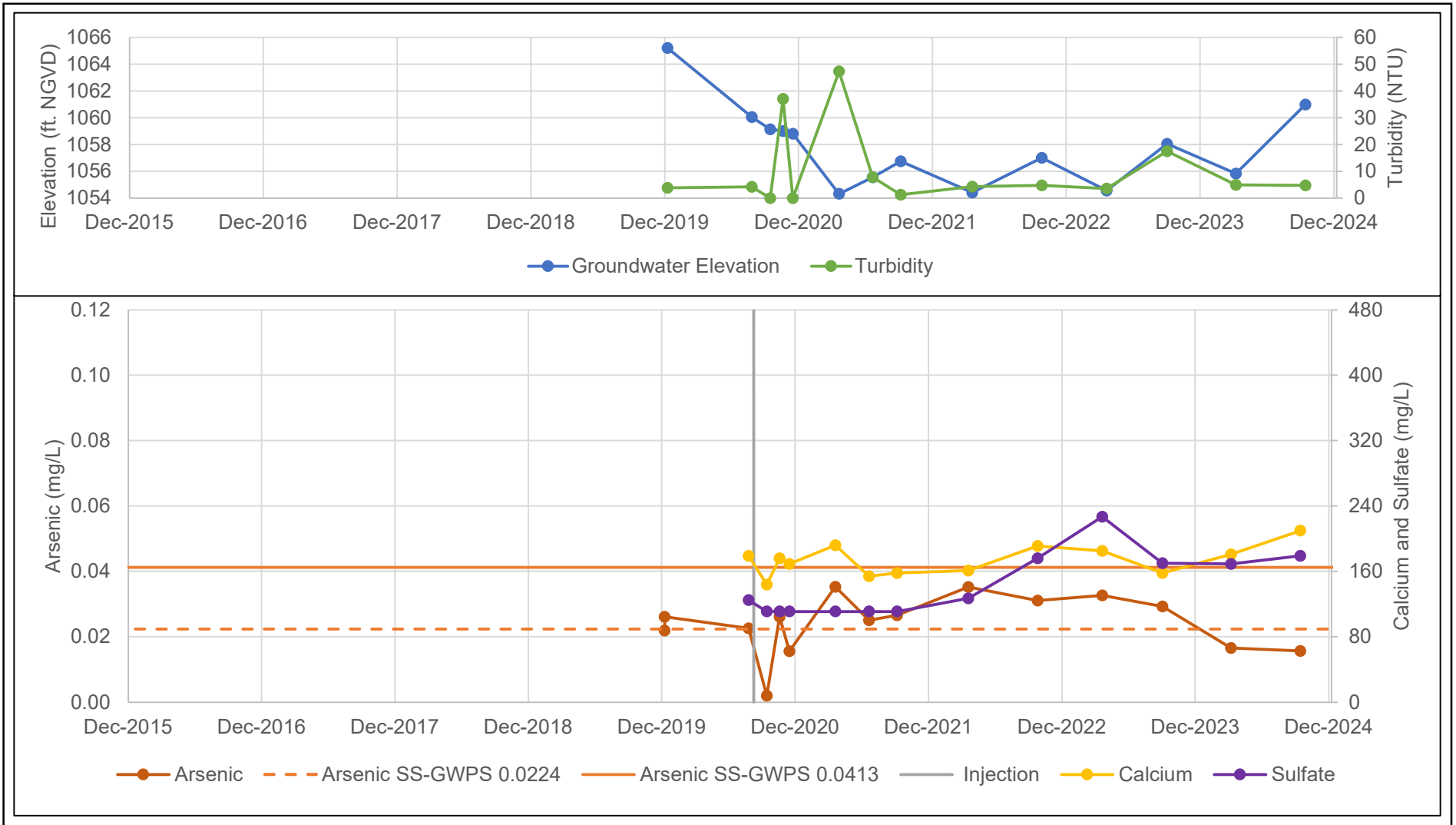
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DEC. 16, 2024

MW-33 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.9

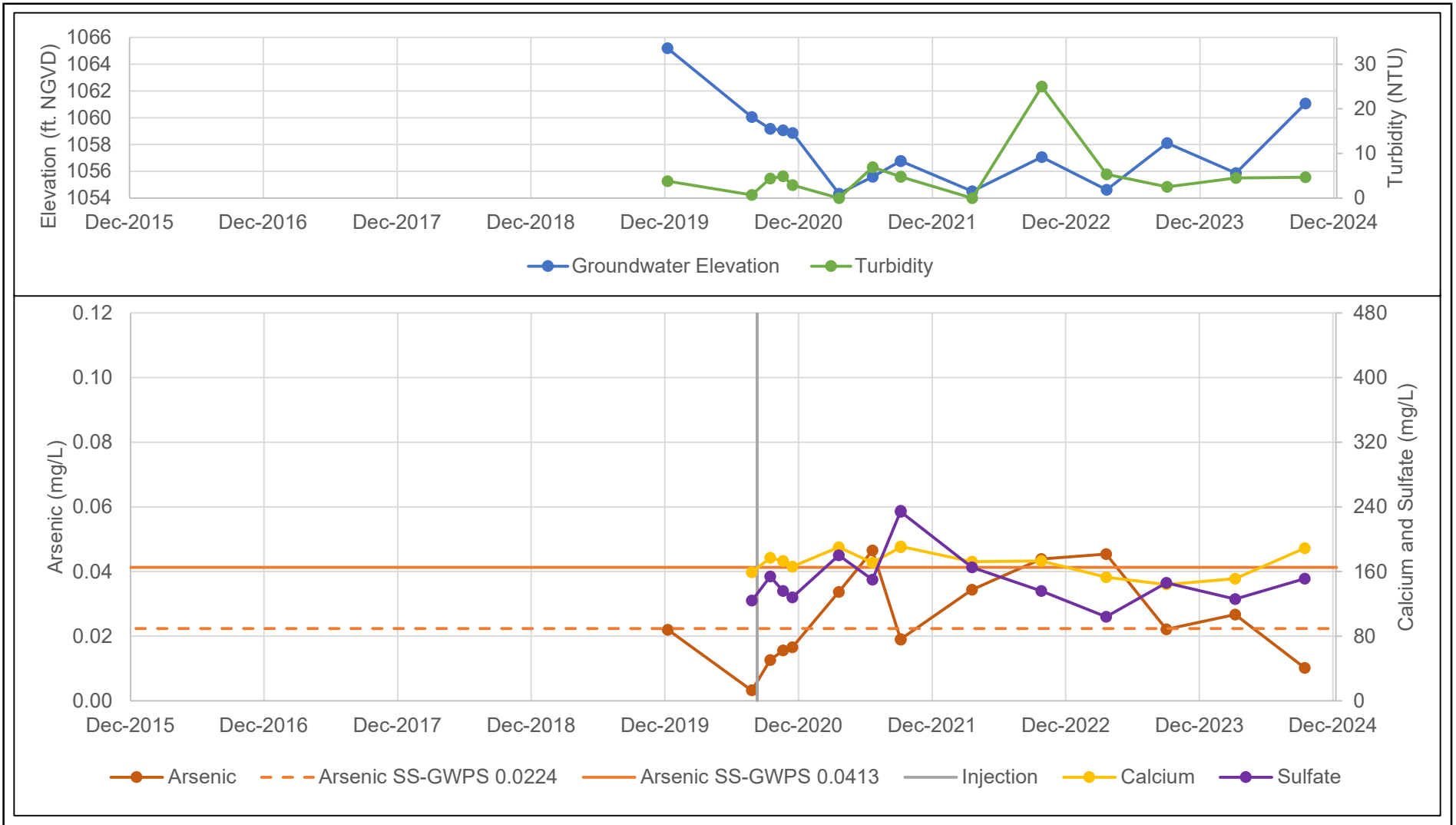


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 DEC. 16, 2024

MW-34 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.10



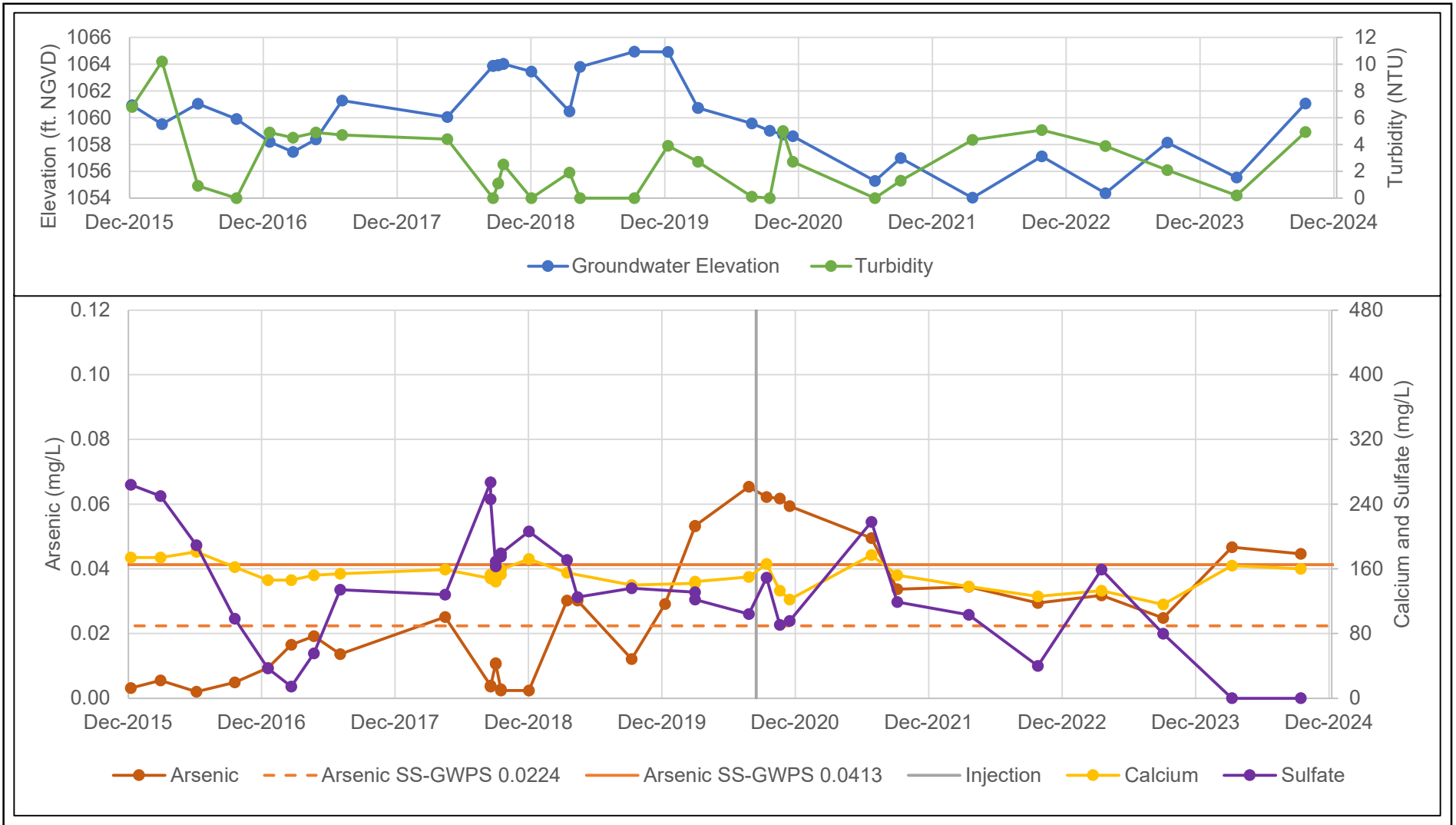
MIDAMERICAN ENERGY COMPANY
 NEAL SOUTH CCR MONOFILL
 SALIX, IOWA

11205258

DEC. 16, 2024

MW-36 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.11

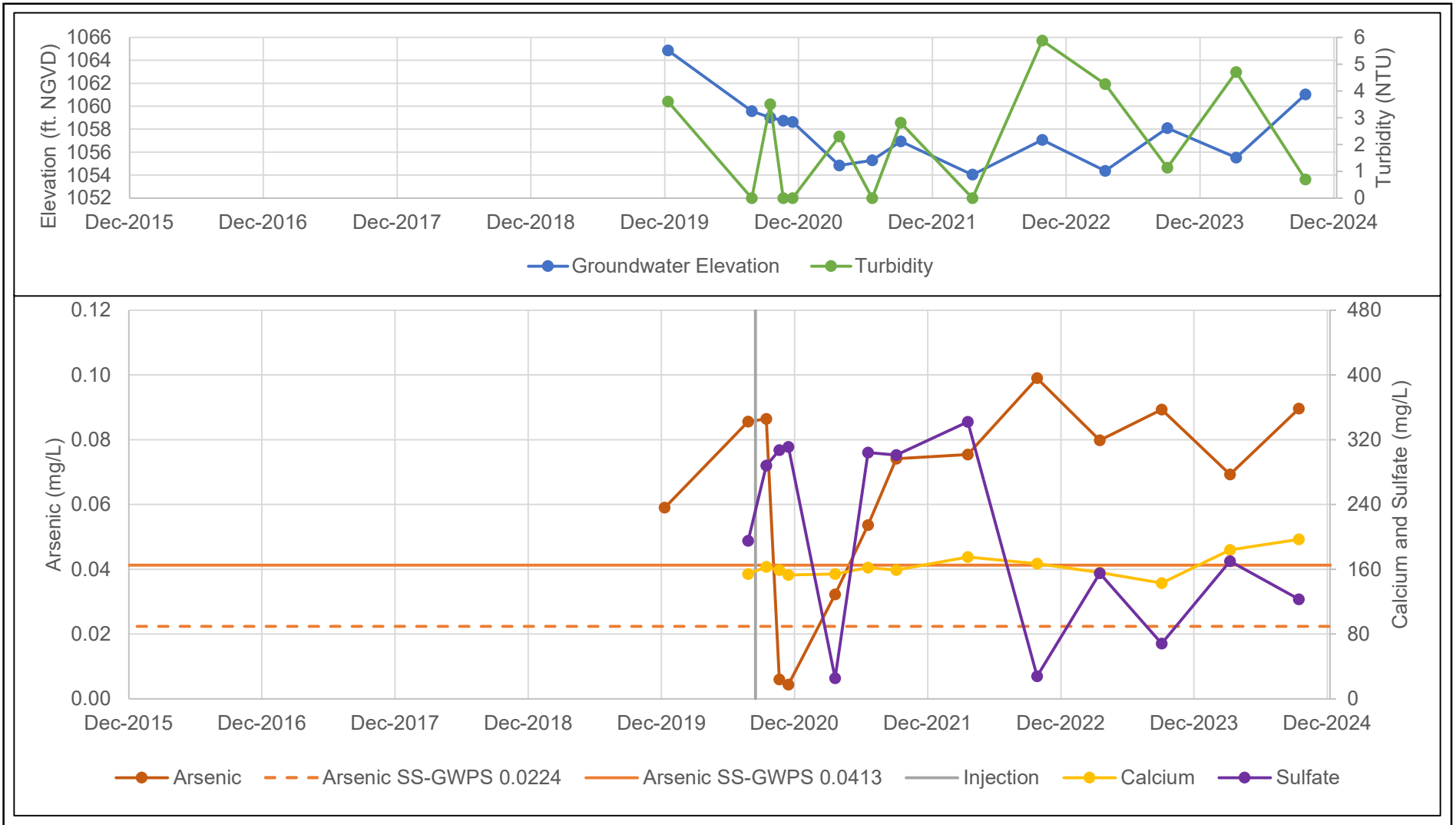


MIDAMERICAN ENERGY COMPANY
 NEAL SOUTH CCR MONOFILL
 SALIX, IOWA

11205258
 DEC. 16, 2024

MW-10 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.12

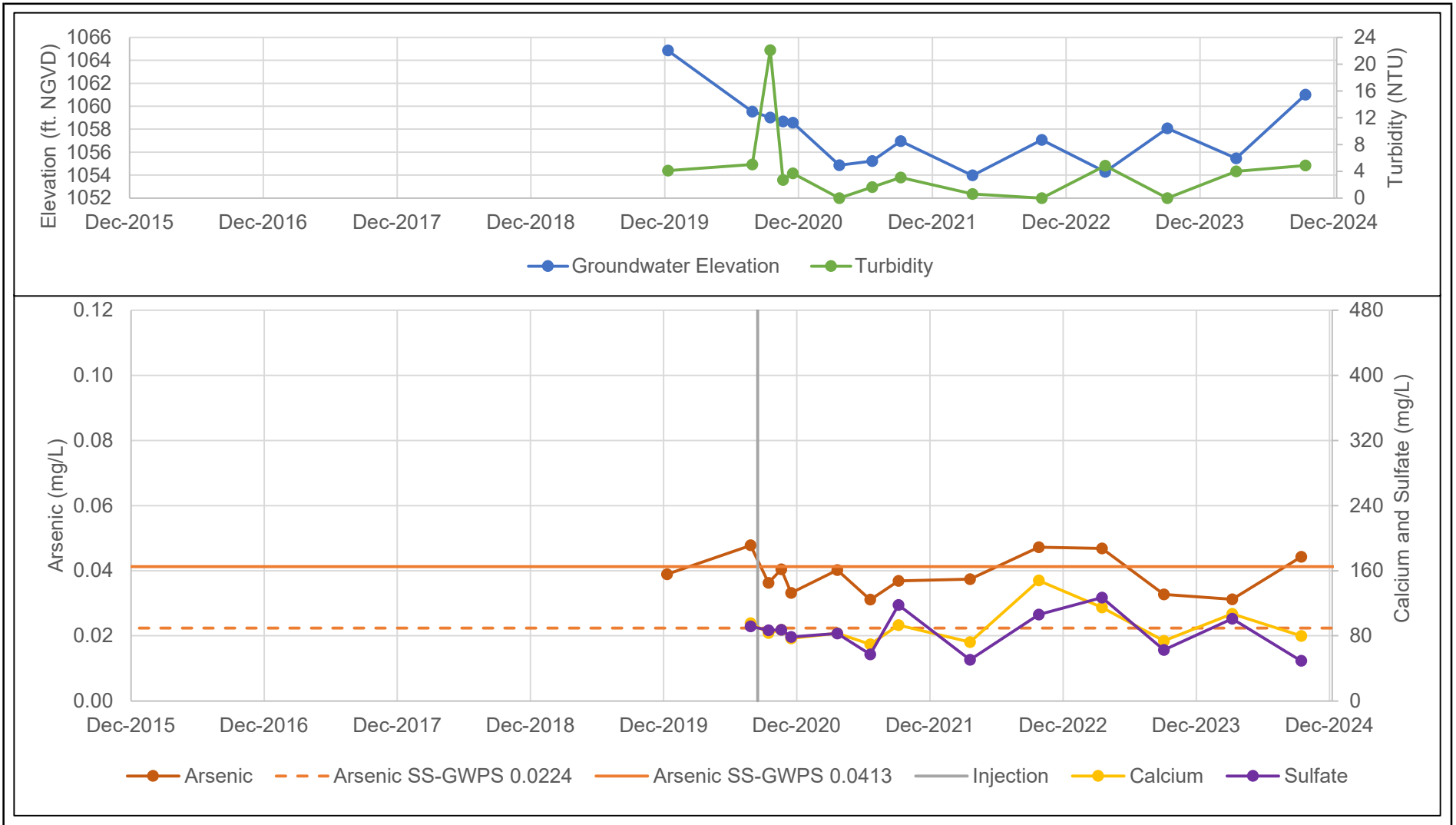


MIDAMERICAN ENERGY COMPANY
 NEAL SOUTH CCR MONOFILL
 SALIX, IOWA

11205258
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MW-43 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.13

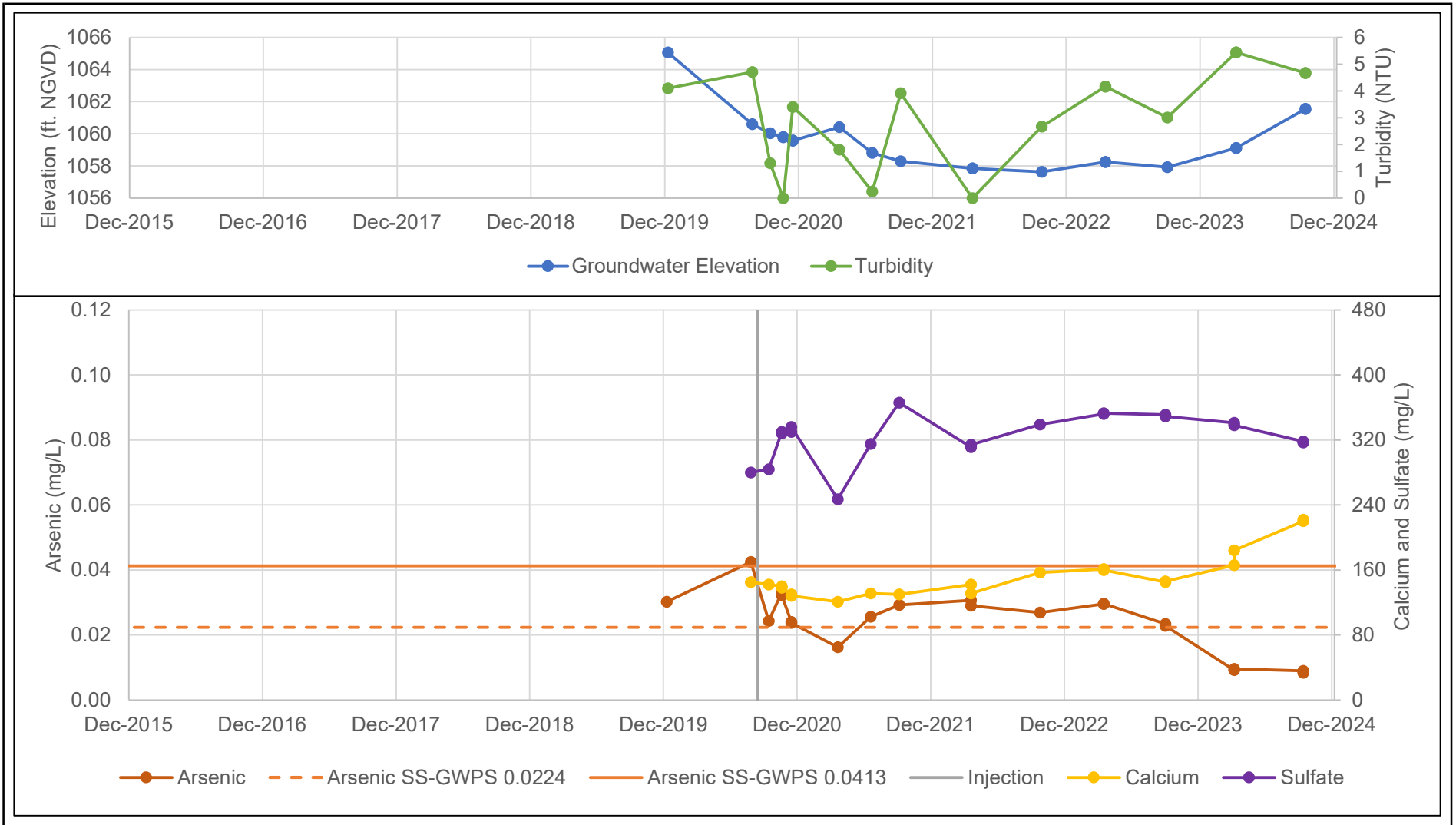


MIDAMERICAN ENERGY COMPANY
 NEAL SOUTH CCR MONOFILL
 SALIX, IOWA

11205258
 DEC. 16, 2024

MW-49 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.14

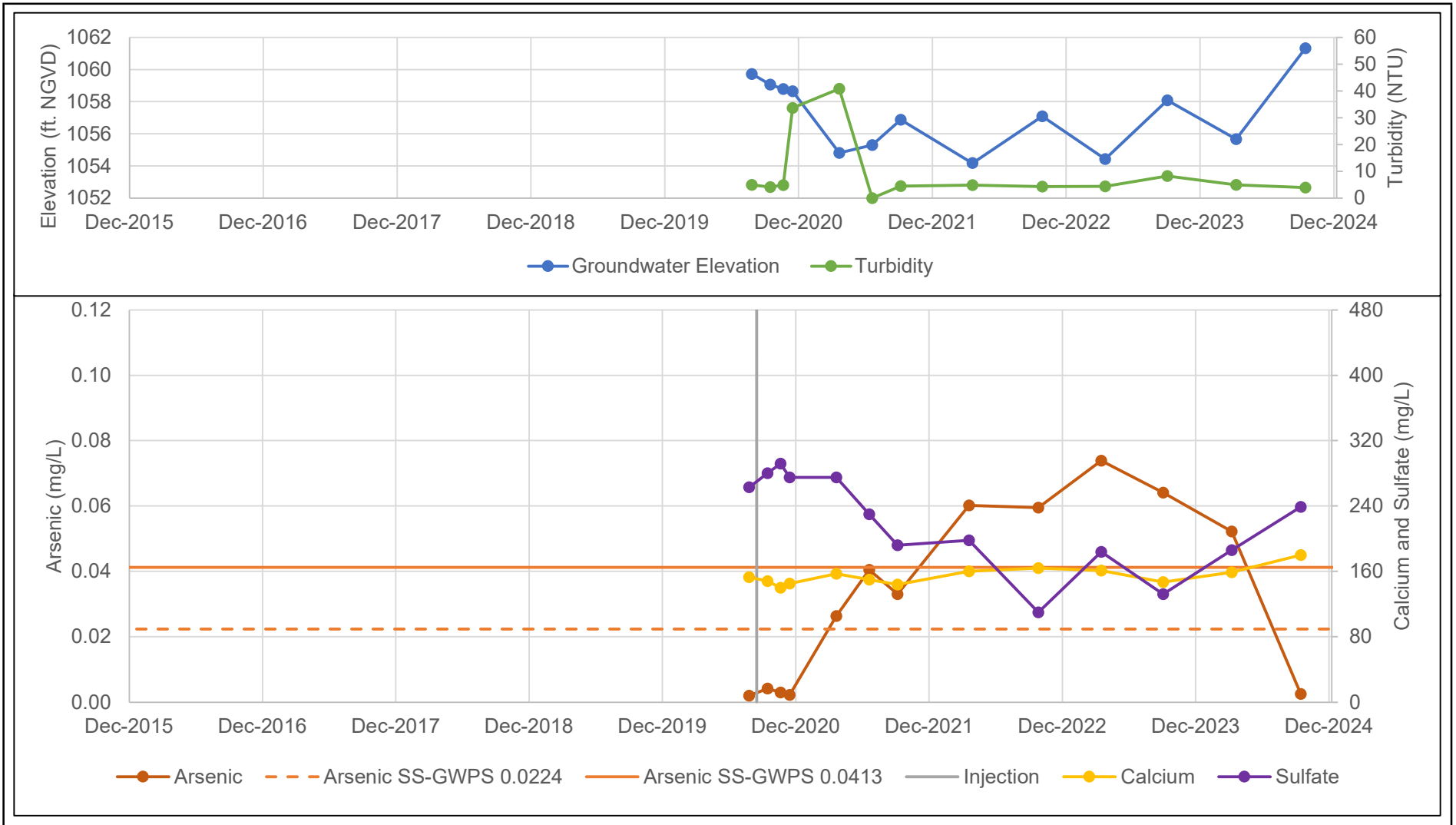


MIDAMERICAN ENERGY COMPANY
 NEAL SOUTH CCR MONOFILL
 SALIX, IOWA

11205258
 DEC. 16, 2024

MW-50 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.15



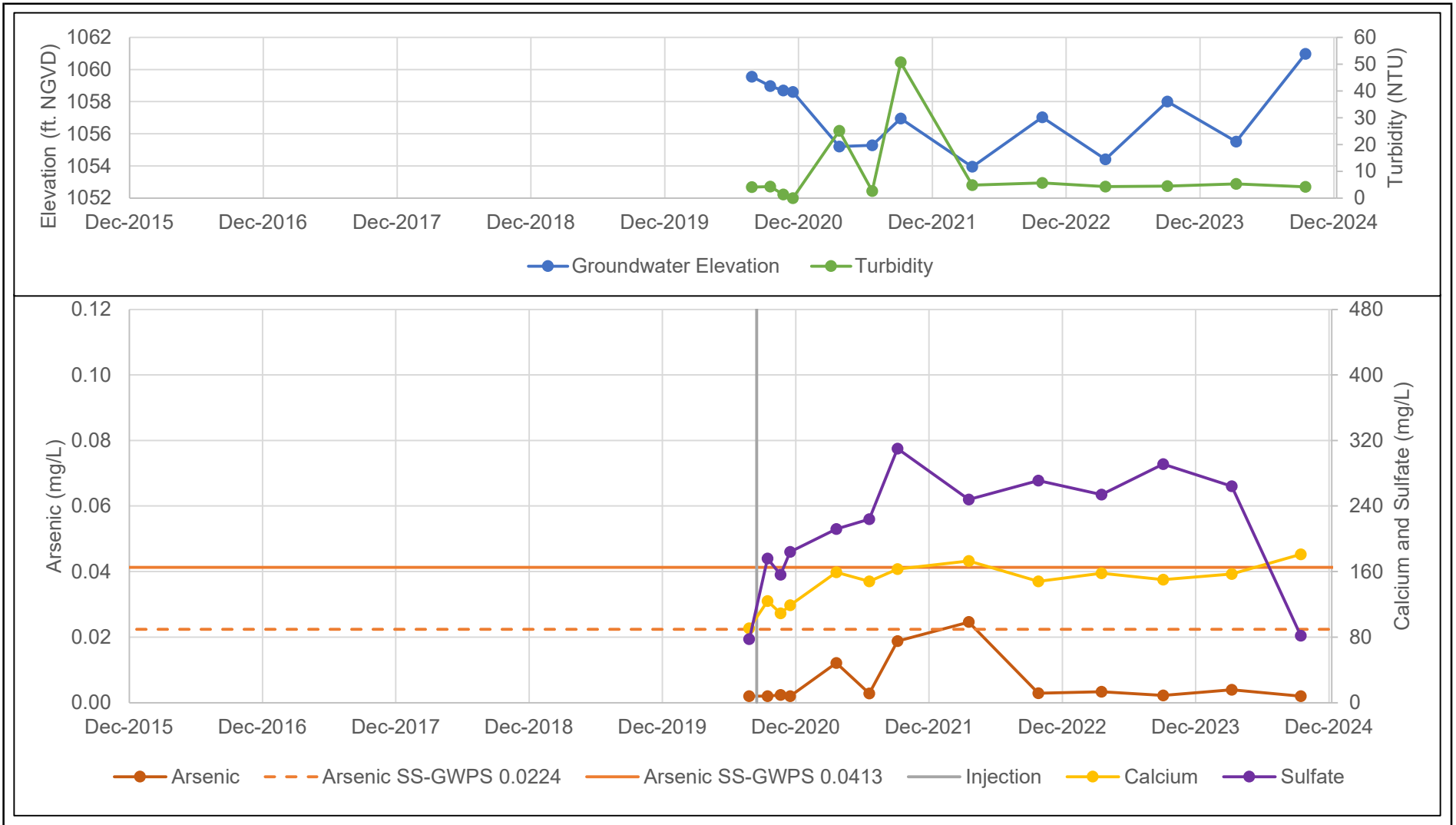
MIDAMERICAN ENERGY COMPANY
 NEAL SOUTH CCR MONOFILL
 SALIX, IOWA

11205258

DEC. 16, 2024

MW-51 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.16

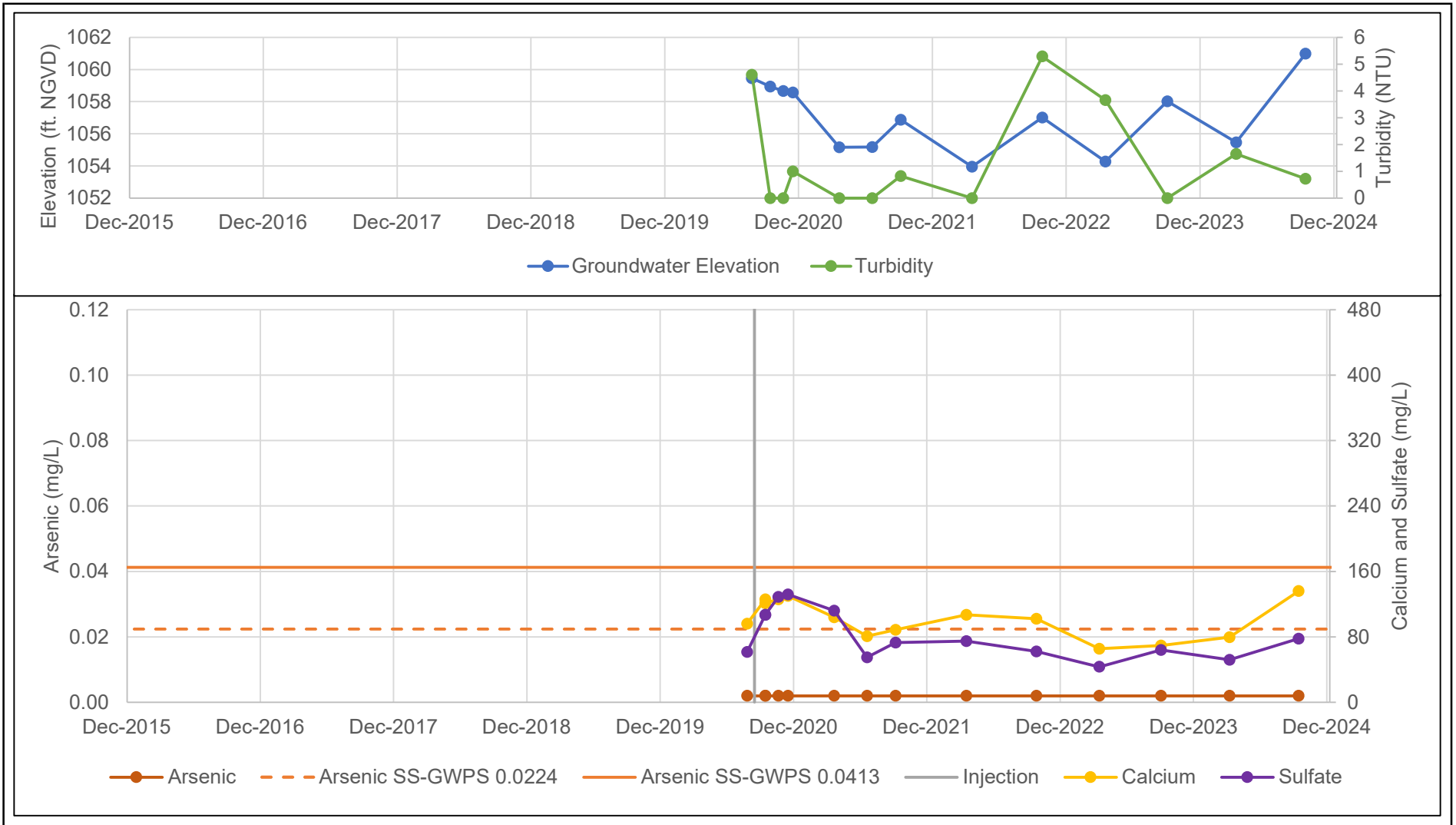


MIDAMERICAN ENERGY COMPANY
 NEAL SOUTH CCR MONOFILL
 SALIX, IOWA

11205258
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MW-52 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.17



MIDAMERICAN ENERGY COMPANY
 NEAL SOUTH CCR MONOFILL
 SALIX, IOWA

11205258
 DEC. 16, 2024

MW-53 PERFORMANCE MONITORING EVALUATION GRAPH

FIGURE 3.18

Appendices

Appendix A

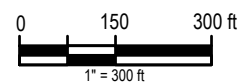
**Groundwater Flow Maps for Corrective
Action Monitoring Events**



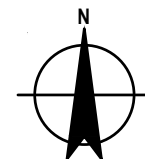
LEGEND

- MW-24 SHALLOW GROUNDWATER MONITORING WELL
- MW-7 DEEP GROUNDWATER MONITORING WELL
- 1057.70 GROUNDWATER ELEVATION
- * NOT USED FOR CONTOURING

- 1058.0 — GROUNDWATER CONTOUR
- GROUNDWATER FLOW DIRECTION
- △ UPGRADIENT SAMPLING LOCATION
- DOWNGRADIENT SAMPLING LOCATION
- ◇ GAUGING LOCATION



Coordinate System:
NA83 STATE PLANE
IOWA NORTH



MIDAMERICAN ENERGY COMPANY
NEAL SOUTH CCR MONOFILL
SALIX, IOWA

GROUNDWATER FLOW MAP
MARCH 11, 2024

Project No. 12576485
Date November 2024

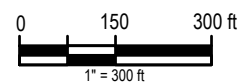
FIGURE 3.1



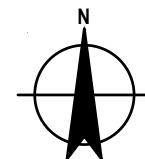
LEGEND

- MW-24 SHALLOW GROUNDWATER MONITORING WELL
- MW-7 DEEP GROUNDWATER MONITORING WELL
- 1057.70 GROUNDWATER ELEVATION
- * NOT USED FOR CONTOURING

- 1061 — GROUNDWATER CONTOUR
- GROUNDWATER FLOW DIRECTION
- △ UPGRADIENT SAMPLING LOCATION
- DOWNGRADIENT SAMPLING LOCATION
- ◇ GAUGING LOCATION



Coordinate System:
NA83 STATE PLANE
IOWA NORTH



MIDAMERICAN ENERGY COMPANY
NEAL SOUTH CCR MONOFILL
SALIX, IOWA

GROUNDWATER FLOW MAP
SEPTEMBER 16, 2024

Project No. 12576485
Date November 2024

FIGURE 3.3

Appendix B

Performance Monitoring Evaluation Data Summary

**MW-2 Area Performance Monitoring Evaluation Data Summary
Neal South Monofill**

Sample Location and ID	Sample Date	Sample Type	Calcium mg/L	Sulfate mg/L	Arsenic mg/L
MW-02					
MW02-GW-1219	12/12/2019	Primary	--	--	0.0569
MW02-GW-0320	03/04/2020	Primary	164	70.6	0.0580
DP01-GW-0320	03/04/2020	Duplicate	158	68.3	0.0514
MW02-GW-0720	07/28/2020	Primary	165	110	0.0724
DP01-GW-0720	07/28/2020	Duplicate	169	108	0.0744
MW2-GW-0920	09/15/2020	Primary	172	77.5	0.119
DP02-GW-0920	09/15/2020	Duplicate	167	77.1	0.112
MW02-GW-1020	10/21/2020	Primary	163	109	0.157
MW02-GW-1120	11/17/2020	Primary	163	86.7	0.0992
MW02-GW-0321	03/23/2021	Primary	150	71.1	0.0856
DP01-GW-0321	03/23/2021	Duplicate	147	69.8	0.0788
MW02-GW-0621	06/23/2021	Primary	147	65.2	0.0792
DP01-GW-0621	06/23/2021	Duplicate	146	62.9	0.0797
MW02-GW-0921	09/09/2021	Primary	135	55.0	0.0469
MW02-GW-0322	03/22/2022	Primary	149	129	0.0348
DP01-GW-0322	03/22/2022	Duplicate	153	132	0.0350
MW02-GW-0922	09/27/2022	Primary	168	65.0	0.0276
DP01-GW-0922	09/27/2022	Duplicate	170	65.7	0.0296
MW02-GW-0323	03/22/2023	Primary	155	121	0.0135
DP01-GW-0323	03/22/2023	Duplicate	154	121	0.0138
MW02-GW-0923	09/06/2023	Primary	170	97.3	0.0170
DP01-GW-0923	09/06/2023	Duplicate	189	95.0	0.0101
MW02-GW-0324	03/12/2024	Primary	216	205	0.0182
DP01-GW-0324	03/12/2024	Duplicate	218	201	0.0188
MW02-GW-0924	09/18/2024	Primary	220	208	0.0200
DP01-GW-0924	09/18/2024	Duplicate	222	208	0.0173
MW-26					
MW26-GW-1219	12/10/2019	Primary	--	--	0.00200 U
MW26-GW-0720	07/28/2020	Primary	115	31.0	0.00200 U
MW26-GW-0920	09/16/2020	Primary	83.0	21.7	0.00200 U
MW26-GW-1020	10/22/2020	Primary	79.1	20.5	0.00200 U
MW26-GW-1120	11/16/2020	Primary	80.0	19.7	0.00200 U
MW26-GW-0321	03/23/2021	Primary	116	66.7	0.00200 U
MW26-GW-0621	06/23/2021	Primary	125	81.2	0.00200 U
MW26-GW-0921	09/09/2021	Primary	122	53.8	0.00311
MW26-GW-0322	03/22/2022	Primary	163	167	0.00200 U
MW26-GW-0922	09/27/2022	Primary	162	102	0.00200 U
MW26-GW-0323	03/23/2023	Primary	180	192	0.00200 U
MW26-GW-0923	09/05/2023	Primary	161	63.9	0.00200 U
MW26-GW-0324	03/11/2024	Primary	173	135	0.00200 U
MW26-GW-0924	09/17/2024	Primary	163	54.4	0.00200 U

**MW-2 Area Performance Monitoring Evaluation Data Summary
Neal South Monofill**

Sample Location and ID	Sample Date	Sample Type	Calcium mg/L	Sulfate mg/L	Arsenic mg/L
MW-28					
MW28-GW-1219	12/11/2019	Primary	--	--	0.00200 U
MW28-GW-0720	07/28/2020	Primary	200	83.6	0.0573
MW28-GW-0920	09/15/2020	Primary	182	84.8	0.0684
MW28-GW-1020	10/22/2020	Primary	181	86.2	0.0357
MW28-GW-1120	11/16/2020	Primary	175	81.5	0.0290
MW28-GW-0321	03/23/2021	Primary	148	46.0	0.0360
MW28-GW-0621	06/22/2021	Primary	138	49.6	0.0235
MW28-GW-0921	09/08/2021	Primary	149	61.5	0.0355
MW28-GW-0322	03/22/2022	Primary	150	51.3	0.0267
MW28-GW-0922	09/28/2022	Primary	140	28.6	0.0187
MW28-GW-0423	04/04/2023	Primary	144	24.8	0.0169
MW28-GW-0923	09/06/2023	Primary	172	102	0.0179
MW28-GW-0324	03/13/2024	Primary	159	60.3	0.0196
MW28-GW-0924	09/17/2024	Primary	230	174	0.0274
MW-30					
MW30-GW-1219	12/11/2019	Primary	--	--	0.0292
MW30-GW-0720	07/28/2020	Primary	179	98.0	0.0336
MW30-GW-0920	09/15/2020	Primary	174	104	0.0586
MW30-GW-1020	10/22/2020	Primary	181	118	0.0679
MW30-GW-1120	11/16/2020	Primary	174	105	0.0649
MW30-GW-0321	03/23/2021	Primary	158	60.2	0.0896
MW30-GW-0621	06/22/2021	Primary	163	54.5	0.0749
MW30-GW-0921	09/08/2021	Primary	135	35.9	0.0490
MW30-GW-0322	03/22/2022	Primary	169	16.2	0.105
MW30-GW-0922	09/28/2022	Primary	158	36.3	0.0476
MW30-GW-0323	03/24/2023	Primary	147	34.3	0.0732
MW30-GW-0923	09/05/2023	Primary	156	47.7	0.0446
MW30-GW-0324	03/11/2024	Primary	166	107	0.0765
MW30-GW-0924	09/17/2024	Primary	205	66.3	0.0599
MW-32					
MW32-GW-1219	12/11/2019	Primary	--	--	0.0273
MW32-GW-0720	07/28/2020	Primary	142	51.8	0.0117
MW32-GW-0920	09/15/2020	Primary	135	55.1	0.00840
MW32-GW-1020	10/22/2020	Primary	128	57.5	0.0120
MW32-GW-1120	11/16/2020	Primary	129	55.2	0.0160
MW32-GW-0321	03/24/2021	Primary	169	99.0	0.0164
MW32-GW-0621	06/23/2021	Primary	153	99.5	0.0114
MW32-GW-0921	09/08/2021	Primary	155	112	0.0279
MW32-GW-0322	03/22/2022	Primary	158	103	0.0212
MW32-GW-0922	09/28/2022	Primary	173	95.6	0.0251
MW32-GW-0423	04/04/2023	Primary	162	79.6	0.047
MW32-GW-0923	09/05/2023	Primary	159	85.4	0.0333
MW32-GW-0324	03/11/2024	Primary	147	151	0.0515
MW32-GW-0924	09/17/2024	Primary	216	213	0.0256

**MW-2 Area Performance Monitoring Evaluation Data Summary
Neal South Monofill**

Sample Location and ID	Sample Date	Sample Type	Calcium mg/L	Sulfate mg/L	Arsenic mg/L
MW-33					
MW33-GW-1219	12/11/2019	Primary	--	--	0.0741
MW33-GW-0720	07/28/2020	Primary	122	44.2	0.0813
MW33-GW-0920	09/15/2020	Primary	154	179	0.0855
MW33-GW-1020	10/22/2020	Primary	156	201	0.0257
MW33-GW-1120	11/16/2020	Primary	134	133	0.0412
MW33-GW-0321	03/24/2021	Primary	192	275	0.00723
MW33-GW-0621	06/23/2021	Primary	310	836	0.00200 U
MW33-GW-0921	09/08/2021	Primary	319	845	0.00349
MW33-GW-0322	03/22/2022	Primary	209	331	0.00232
MW33-GW-0922	09/28/2022	Primary	195	233	0.00200 U
MW33-GW-0423	04/04/2023	Primary	197	249	0.00739
MW33-GW-0923	09/05/2023	Primary	160	157	0.0136
MW33-GW-0324	03/11/2024	Primary	194	375	0.00383
MW33-GW-0924	09/17/2024	Primary	203	239	0.0149
MW-34					
MW34-GW-1219	12/11/2019	Primary	--	--	0.0219
DP01-GW-1219	12/11/2019	Duplicate	--	--	0.0261
MW34-GW-0720	07/28/2020	Primary	179	125	0.0226
MW34-GW-0920	09/16/2020	Primary	144	111	0.00200 U
MW34-GW-1020	10/21/2020	Primary	176	127	0.0261
MW34-GW-1120	11/17/2020	Primary	169	159	0.0156
MW34-GW-0321	03/23/2021	Primary	192	177	0.0353
MW34-GW-0621	06/23/2021	Primary	154	107	0.0251
MW34-GW-0921	09/08/2021	Primary	158	138	0.0266
MW34-GW-0322	03/22/2022	Primary	161	127	0.0352
MW34-GW-0922	09/28/2022	Primary	191	176	0.0311
MW34-GW-0323	03/24/2023	Primary	185	227	0.0327
MW34-GW-0923	09/05/2023	Primary	158	170	0.0293
MW34-GW-0324	03/11/2024	Primary	181	169	0.0166
MW34-GW-0924	09/17/2024	Primary	210	179	0.0157

**MW-2 Area Performance Monitoring Evaluation Data Summary
Neal South Monofill**

Sample Location and ID	Sample Date	Sample Type	Calcium mg/L	Sulfate mg/L	Arsenic mg/L
MW-36					
MW36-GW-1219	12/11/2019	Primary	--	--	0.0220
MW36-GW-0720	07/28/2020	Primary	159	124	0.00323
MW36-GW-0920	09/16/2020	Primary	177	154	0.0126
MW36-GW-1020	10/21/2020	Primary	173	136	0.0156
MW36-GW-1120	11/16/2020	Primary	166	128	0.0166
MW36-GW-0321	03/23/2021	Primary	190	180	0.0337
MW36-GW-0621	06/23/2021	Primary	171	150	0.0465
MW36-GW-0921	09/08/2021	Primary	190	235	0.0189
DP02-GW-0921	09/08/2021	Duplicate	191	234	0.0191
MW36-GW-0322	03/22/2022	Primary	172	165	0.0344
MW36-GW-0922	09/28/2022	Primary	173	136	0.0439
MW36-GW-0323	03/24/2023	Primary	153	104	0.0454
MW36-GW-0923	09/05/2023	Primary	144	146	0.0221
MW36-GW-0324	03/11/2024	Primary	151	126	0.0267
MW36-GW-0924	09/17/2024	Primary	189	151	0.0102

Notes:

U - Not detected at associated reporting limit.

**MW-10 Area Performance Monitoring Evaluation Data Summary
Neal South Monofill**

Sample Location and ID	Sample Date	Sample Type	Calcium mg/L	Sulfate mg/L	Arsenic mg/L
MW-10					
MW10-GW-1219	12/12/2019	Primary	--	--	0.0291
MW10-GW-0320	03/03/2020	Primary	142	131	0.0531
DP02-GW-0320	03/03/2020	Duplicate	144	122	0.0533
MW10-GW-0720	07/28/2020	Primary	150	104	0.0654
MW10-GW-0920	09/15/2020	Primary	166	149	0.0622
MW10-GW-1020	10/21/2020	Primary	133	90.7	0.0617
MW10-GW-1120	11/17/2020	Primary	122	95.5	0.0594
MW10-GW-0621	06/29/2021	Primary	177	218	0.0495
MW10-GW-0921	09/08/2021	Primary	152	119	0.0337
MW10-GW-0322	03/22/2022	Primary	138	103	0.0344
MW10-GW-0922	09/28/2022	Primary	126	40.0	0.0294
MW10-GW-0323	03/21/2023	Primary	133	159	0.0318
MW10-GW-0923	09/06/2023	Primary	116	79.6	0.0248
MW10-GW-0324	03/13/2024	Primary	164	137	0.0467
MW10-GW-0924	09/17/2024	Primary	160	101	0.0446
MW-43					
MW43-GW-1219	12/12/2019	Primary	--	--	0.0590
MW43-GW-0720	07/28/2020	Primary	154	195	0.0856
MW43-GW-0920	09/16/2020	Primary	163	288	0.0864
MW43-GW-1020	10/22/2020	Primary	159	307	0.00599
MW43-GW-1120	11/16/2020	Primary	153	311	0.00441
MW43-GW-0321	03/24/2021	Primary	154	25.5	0.0322
MW43-GW-0621	06/22/2021	Primary	162	304	0.0536
MW43-GW-0921	09/08/2021	Primary	159	301	0.0741
MW43-GW-0322	03/23/2022	Primary	175	342	0.0754
MW43-GW-0922	09/29/2022	Primary	167	27.8	0.0990
MW43-GW-0323	03/20/2023	Primary	156	155	0.0798
MW43-GW-0923	09/06/2023	Primary	147	68.1	0.0893
MW43-GW-0324	03/12/2024	Primary	184	170	0.0693
MW43-GW-0924	09/17/2024	Primary	197	123	0.0896
MW-49					
MW49-GW-1219	12/12/2019	Primary	--	--	0.0389
MW49-GW-0720	07/29/2020	Primary	95.5	91.6	0.0478
MW49-GW-0920	09/16/2020	Primary	83.5	86.8	0.0363
MW49-GW-1020	10/21/2020	Primary	87.5	87.3	0.0404
MW49-GW-1120	11/17/2020	Primary	76.8	78.6	0.0332
MW49-GW-0321	03/24/2021	Primary	83.3	83.0	0.0402
MW49-GW-0621	06/22/2021	Primary	69.7	57.3	0.0311
MW49-GW-0921	09/08/2021	Primary	93.2	118	0.0369
MW49-GW-0322	03/23/2022	Primary	72.3	50.7	0.0374
MW49-GW-0922	09/28/2022	Primary	148	106	0.0472
MW49-GW-0323	03/20/2023	Primary	115	127	0.0468
MW49-GW-0923	09/06/2023	Primary	73.7	62.5	0.0327
MW49-GW-0324	03/12/2024	Primary	107	101	0.0312
MW49-GW-0924	09/17/2024	Primary	79.7	49.3	0.0443

**MW-10 Area Performance Monitoring Evaluation Data Summary
Neal South Monofill**

Sample Location and ID	Sample Date	Sample Type	Calcium mg/L	Sulfate mg/L	Arsenic mg/L
MW-50					
MW50-GW-1219	12/12/2019	Primary	--	--	0.0302
MW50-GW-0720	07/29/2020	Primary	145	280	0.0425
MW50-GW-0920	09/16/2020	Primary	142	284	0.0243
MW50-GW-1020	10/22/2020	Primary	140	330	0.0331
DP01-GW-1020	10/22/2020	Duplicate	138	328	0.0322
MW50-GW-1120	11/17/2020	Primary	130	330	0.0240
DP01-GW-1120	11/17/2020	Duplicate	128	336	0.0237
MW50-GW-0321	03/24/2021	Primary	116	221	0.0158
DP02-GW-0321	03/24/2021	Duplicate	121	247	0.0162
MW50-GW-0621	06/22/2021	Primary	131	315	0.0256
MW50-GW-0921	09/08/2021	Primary	130	366	0.0292
MW50-GW-0322	03/23/2022	Primary	142	311	0.0307
DP02-GW-0322	03/23/2022	Duplicate	131	314	0.0290
MW50-GW-0922	09/28/2022	Primary	158	343	0.0276
DP02-GW-0922	09/28/2022	Duplicate	157	339	0.0269
MW50-GW-0323	03/21/2023	Primary	161	352	0.0295
DP02-GW-0323	03/21/2023	Duplicate	160	353	0.0296
MW50-GW-0923	09/06/2023	Primary	145	351	0.0234
DP02-GW-0923	09/06/2023	Duplicate	146	349	0.0228
MW50-GW-0324	03/12/2024	Primary	166	341	0.00916
DP02-GW-0324	03/12/2024	Duplicate	184	338	0.00955
MW50-GW-0924	09/17/2024	Primary	220	318	0.00900
DP02-GW-0924	09/17/2024	Duplicate	222	317	0.00835
MW-51					
MW51-GW-0720	07/28/2020	Primary	153	263	0.00200 U
MW51-GW-0920	09/16/2020	Primary	148	280	0.00412
MW51-GW-1020	10/22/2020	Primary	140	292	0.00294
MW51-GW-1120	11/16/2020	Primary	145	275	0.00219
MW51-GW-0321	03/24/2021	Primary	157	275	0.0263
MW51-GW-0621	06/22/2021	Primary	150	230	0.0405
MW51-GW-0921	09/08/2021	Primary	144	192	0.0330
MW51-GW-0322	03/23/2022	Primary	160	198	0.0602
MW51-GW-0922	09/29/2022	Primary	164	110	0.0595
MW51-GW-0323	03/20/2023	Primary	161	184	0.0739
MW51-GW-0923	09/06/2023	Primary	147	132	0.0641
MW51-GW-0324	03/12/2024	Primary	159	186	0.0522
MW51-GW-0924	09/17/2024	Primary	180	239	0.00250

**MW-10 Area Performance Monitoring Evaluation Data Summary
Neal South Monofill**

Sample Location and ID	Sample Date	Sample Type	Calcium mg/L	Sulfate mg/L	Arsenic mg/L
MW-52					
MW52-GW-0720	07/28/2020	Primary	90.8	77.4	0.00200 U
MW52-GW-0920	09/16/2020	Primary	124	176	0.00200 U
MW52-GW-1020	10/22/2020	Primary	109	156	0.00232
MW52-GW-1120	11/17/2020	Primary	119	184	0.00200 U
MW52-GW-0321	03/24/2021	Primary	159	212	0.0121
MW52-GW-0621	06/22/2021	Primary	148	224	0.00280
MW52-GW-0921	09/08/2021	Primary	163	310	0.0188
MW52-GW-0322	03/22/2022	Primary	173	248	0.0246
MW52-GW-0922	09/28/2022	Primary	148	271	0.00289
MW52-GW-0323	03/21/2023	Primary	158	254	0.00335
MW52-GW-0923	09/06/2023	Primary	150	291	0.00223
MW52-GW-0324	03/12/2024	Primary	157	264	0.00396
MW52-GW-0924	09/17/2024	Primary	181	81.7	0.00200 U
MW-53					
MW53-GW-0720	07/28/2020	Primary	96.0	61.6	0.00200 U
MW53-GW-0920	09/16/2020	Primary	126	107	0.00200 U
DP01-GW-0920	09/16/2020	Duplicate	121	107	0.00200 U
MW53-GW-1020	10/22/2020	Primary	126	129	0.00200 U
MW53-GW-1120	11/17/2020	Primary	130	132	0.00200 U
MW53-GW-0321	03/24/2021	Primary	104	112	0.00200 U
MW53-GW-0621	06/22/2021	Primary	80.9	55.0	0.00200 U
MW53-GW-0921	09/08/2021	Primary	88.5	72.9	0.00200 U
MW53-GW-0322	03/21/2022	Primary	107	74.8	0.00200 U
MW53-GW-0922	09/29/2022	Primary	102	62.3	0.00200 U
MW53-GW-0323	03/21/2023	Primary	65.6	43.4	0.00200 U
MW53-GW-0923	09/06/2023	Primary	69.4	64.1	0.00200 U
MW53-GW-0324	03/12/2024	Primary	79.7	51.9	0.00200 U
MW53-GW-0924	09/17/2024	Primary	136	77.9	0.00200 U

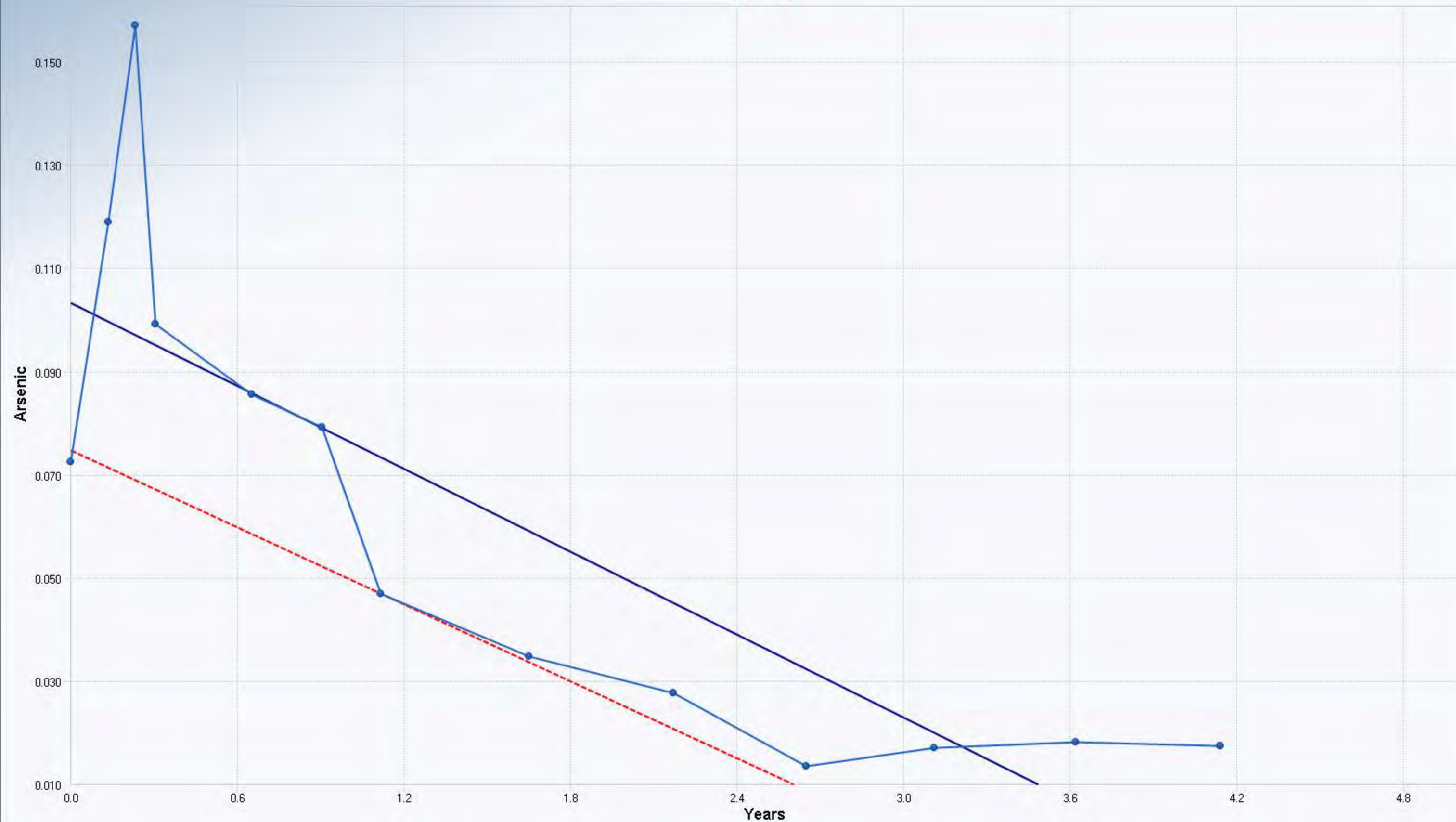
Notes:

U - Not detected at associated reporting limit.

Appendix C

Mann-Kendall Analyses

MW-02



Mann-Kendall Trend Analysis

n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	16.3911
Standardized Value of S	-3.3555
M-K Test Value (S)	-56
Tabulated p-value	0.0000
Approximate p-value	0.0004

OLS Regression Line (Blue)

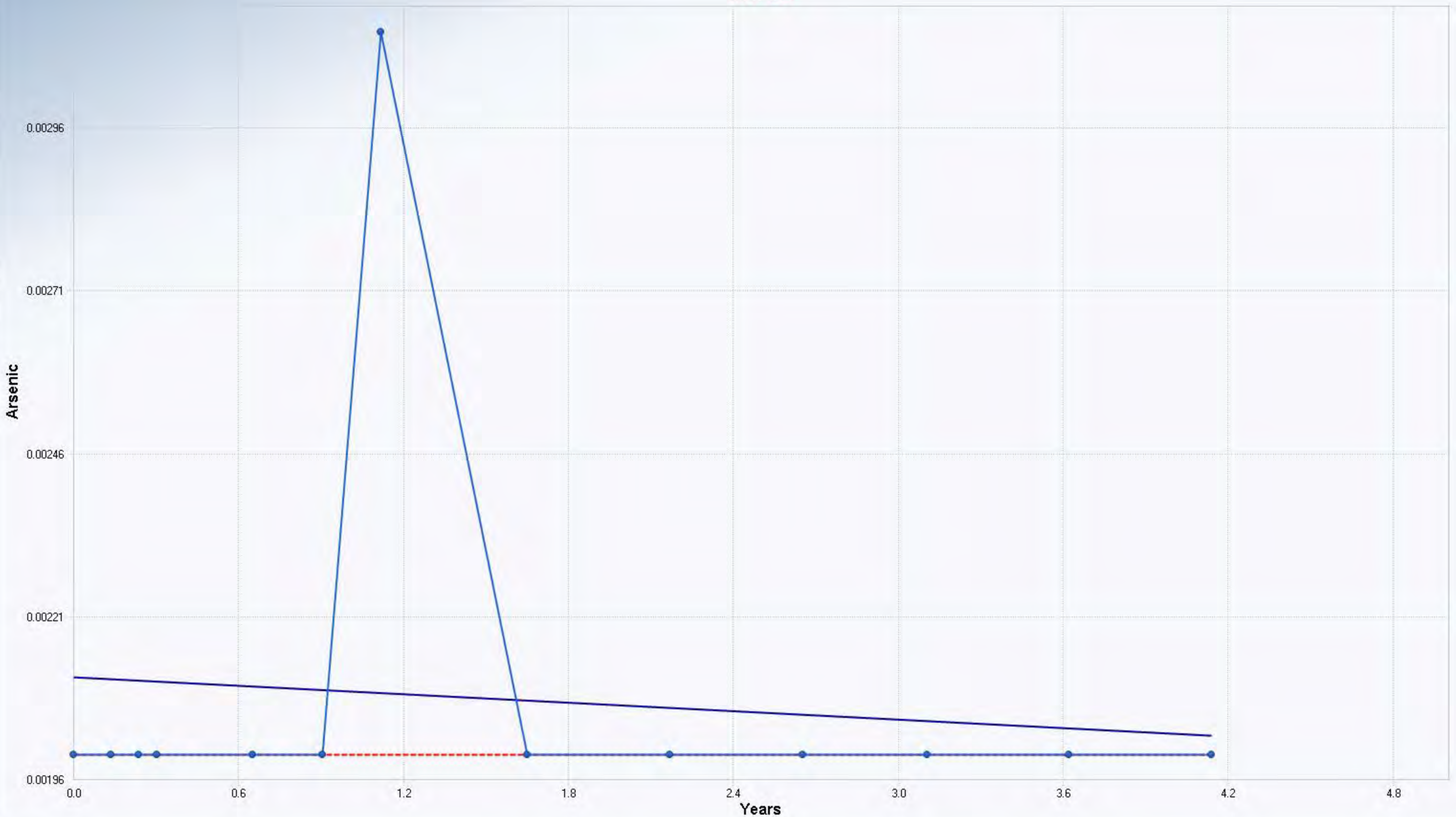
OLS Regression Slope	-0.0268
OLS Regression Intercept	0.1033

Theil-Sen Trend Line (Red)

Theil-Sen Slope	-0.0249
Theil-Sen Intercept	0.0748

Statistically significant evidence of a decreasing trend at the specified level of significance.

MW-26



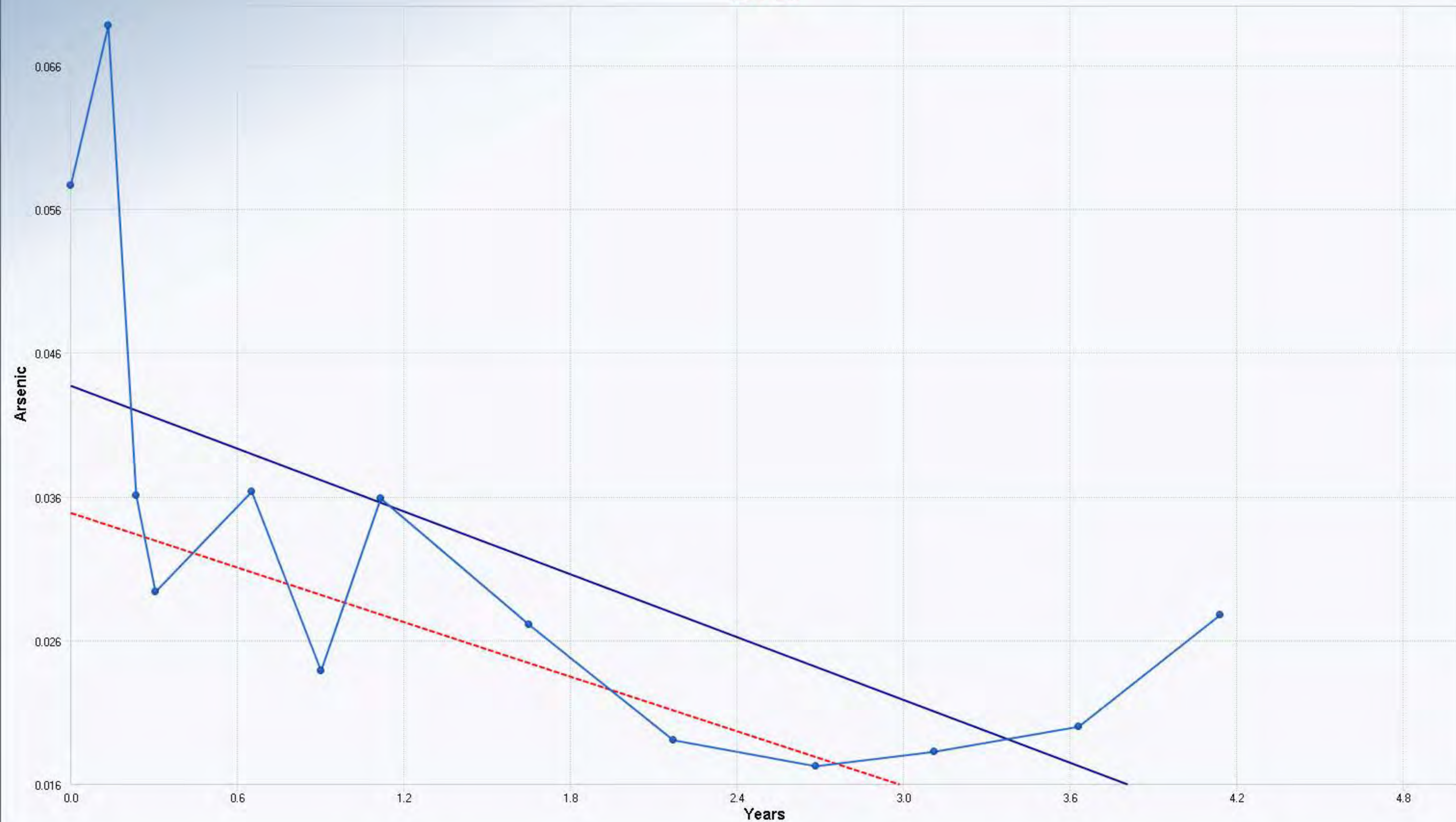
Mann-Kendall Trend Analysis	
n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	7.4833
Standardized Value of S	
M-K Test Value (S)	0
Tabulated p-value	0.5240
Approximate p-value	

OLS Regression Line (Blue)	
OLS Regression Slope	0.0000
OLS Regression Intercept	0.0021

Theil-Sen Trend Line (Red)	
Theil-Sen Slope	0.0000
Theil-Sen Intercept	0.0020

Insufficient statistical evidence of a significant trend at the specified level of significance.

MW-28



Mann-Kendall Trend Analysis

n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	16.3911
Standardized Value of S	-2.7454
M-K Test Value (S)	-46
Tabulated p-value	0.0020
Approximate p-value	0.0030

OLS Regression Line (Blue)

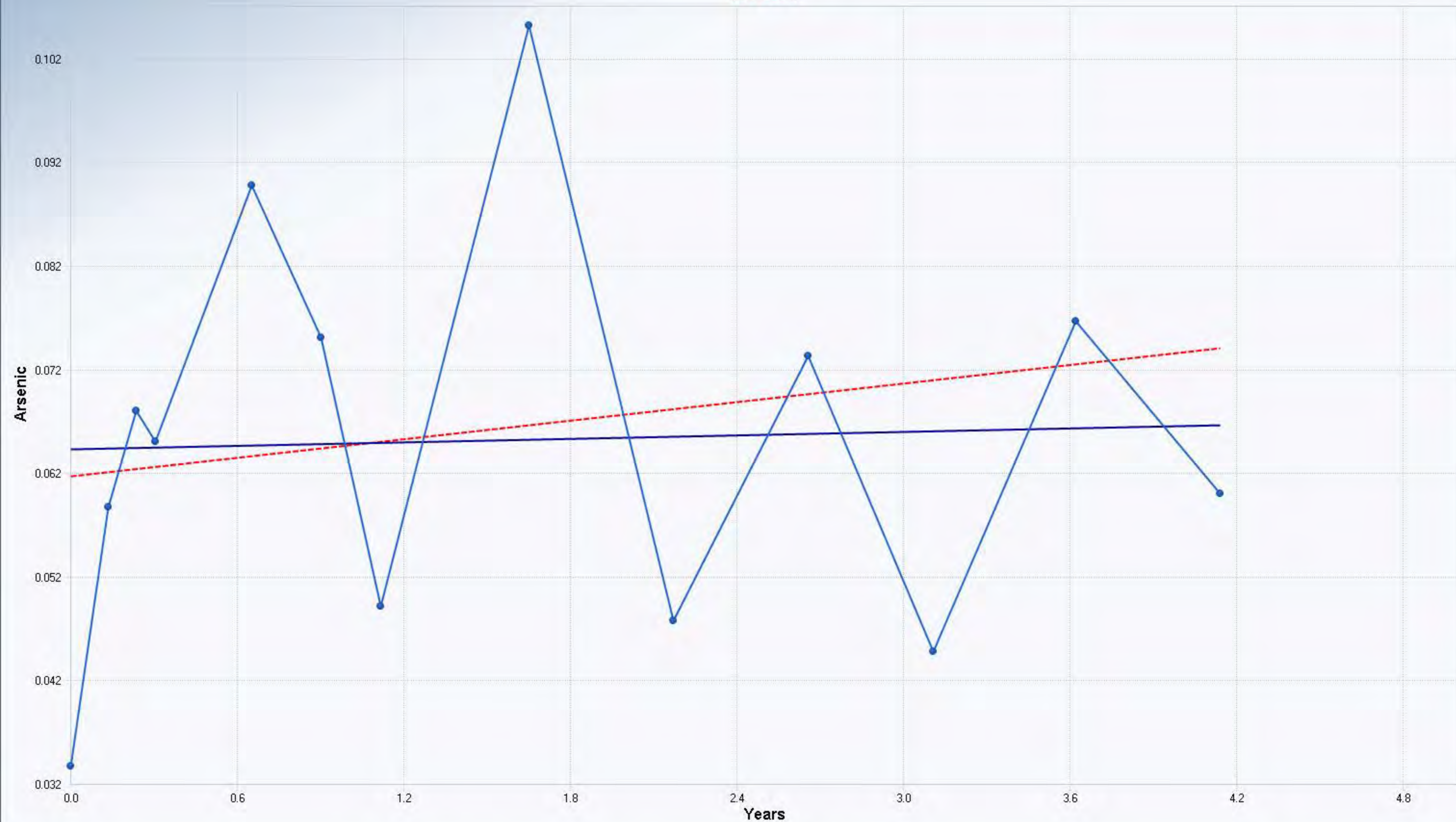
OLS Regression Slope	-0.0073
OLS Regression Intercept	0.0434

Theil-Sen Trend Line (Red)

Theil-Sen Slope	-0.0063
Theil-Sen Intercept	0.0345

Statistically significant evidence of a decreasing trend at the specified level of significance.

MW-30



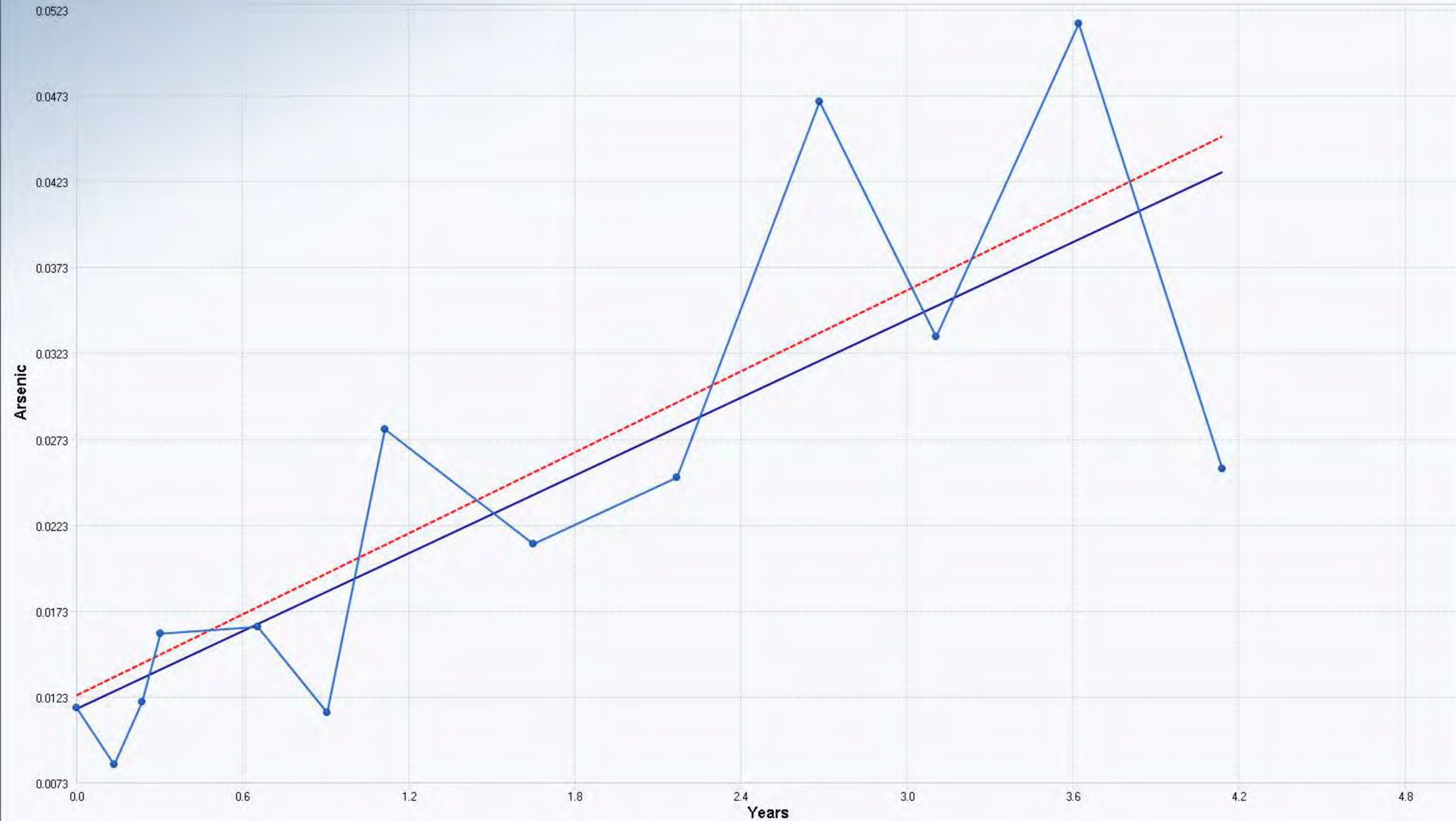
Mann-Kendall Trend Analysis	
n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	16.3911
Standardized Value of S	0.4271
M-K Test Value (S)	8
Tabulated p-value	0.3380
Approximate p-value	0.3347

OLS Regression Line (Blue)	
OLS Regression Slope	0.0006
OLS Regression Intercept	0.0641

Theil-Sen Trend Line (Red)	
Theil-Sen Slope	0.0030
Theil-Sen Intercept	0.0616

Insufficient statistical evidence of a significant trend at the specified level of significance.

MW-32



Mann-Kendall Trend Analysis

n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	16.3911
Standardized Value of S	3.2335
M-K Test Value (S)	54
Tabulated p-value	0.0000
Approximate p-value	0.0006

OLS Regression Line (Blue)

OLS Regression Slope	0.0075
OLS Regression Intercept	0.0116

Theil-Sen Trend Line (Red)

Theil-Sen Slope	0.0079
Theil-Sen Intercept	0.0124

Statistically significant evidence of an increasing trend at the specified level of significance.

MW-33



Mann-Kendall Trend Analysis

n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	16.3605
Standardized Value of S	-1.3447
M-K Test Value (S)	-23
Tabulated p-value	0.1020
Approximate p-value	0.0894

OLS Regression Line (Blue)

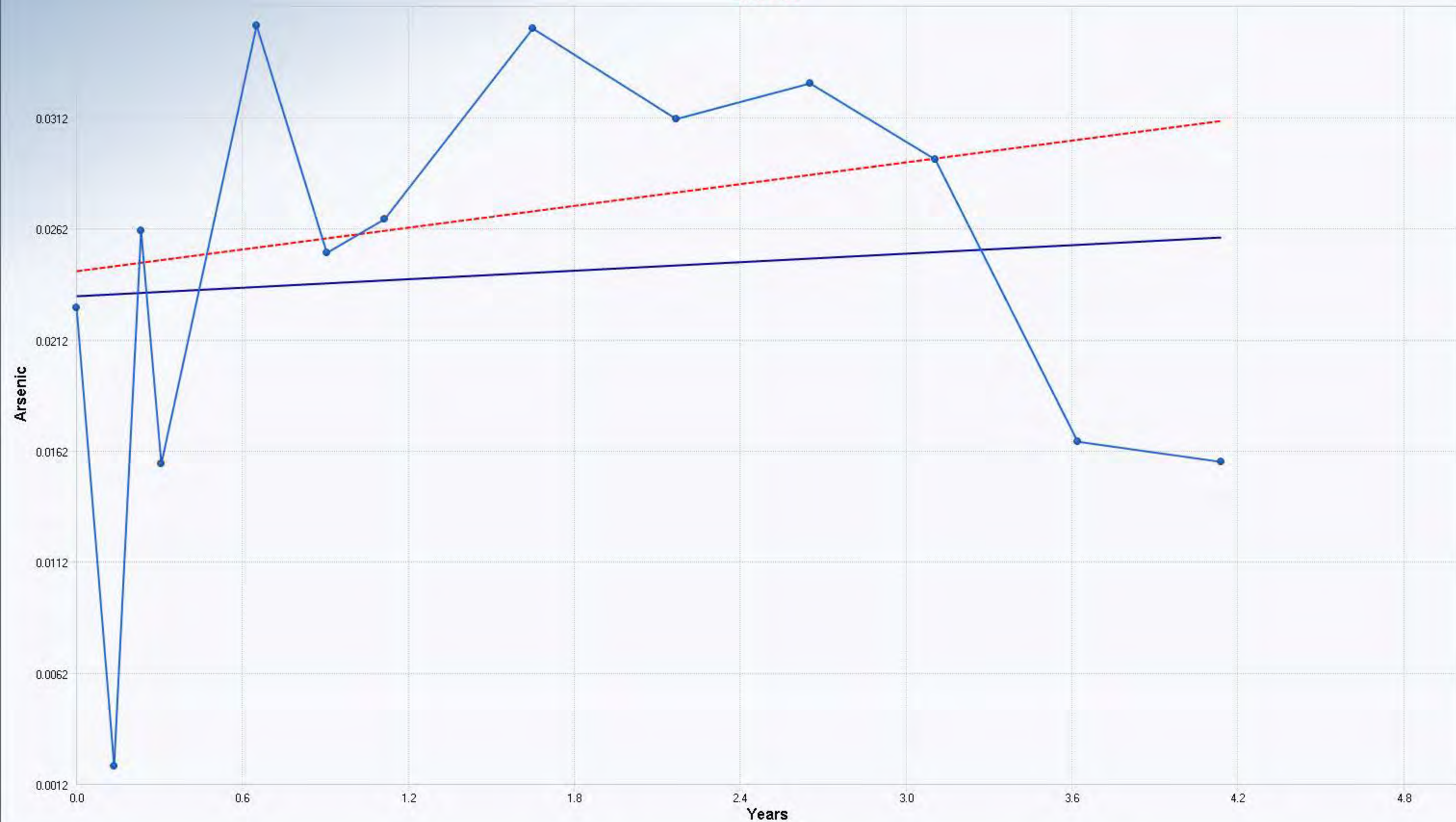
OLS Regression Slope	-0.0114
OLS Regression Intercept	0.0406

Theil-Sen Trend Line (Red)

Theil-Sen Slope	-0.0072
Theil-Sen Intercept	0.0154

Insufficient statistical evidence of a significant trend at the specified level of significance.

MW-34



Mann-Kendall Trend Analysis

n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	16.3911
Standardized Value of S	0.5491
M-K Test Value (S)	10
Tabulated p-value	0.2950
Approximate p-value	0.2915

OLS Regression Line (Blue)

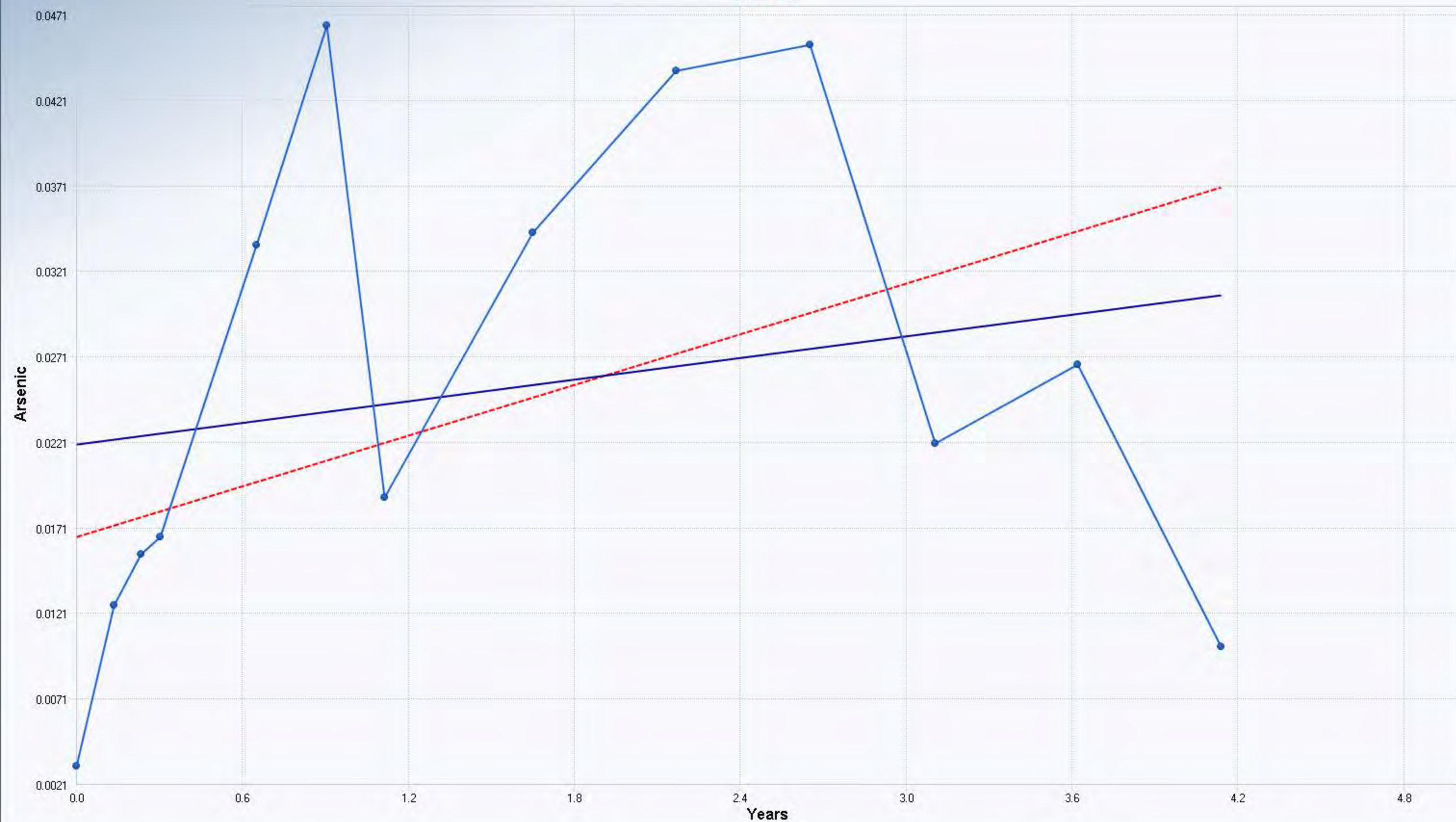
OLS Regression Slope	0.0006
OLS Regression Intercept	0.0231

Theil-Sen Trend Line (Red)

Theil-Sen Slope	0.0016
Theil-Sen Intercept	0.0243

Insufficient statistical evidence of a significant trend at the specified level of significance.

MW-36



Mann-Kendall Trend Analysis

n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	16.3911
Standardized Value of S	1.5252
M-K Test Value (S)	26
Tabulated p-value	0.0640
Approximate p-value	0.0636

OLS Regression Line (Blue)

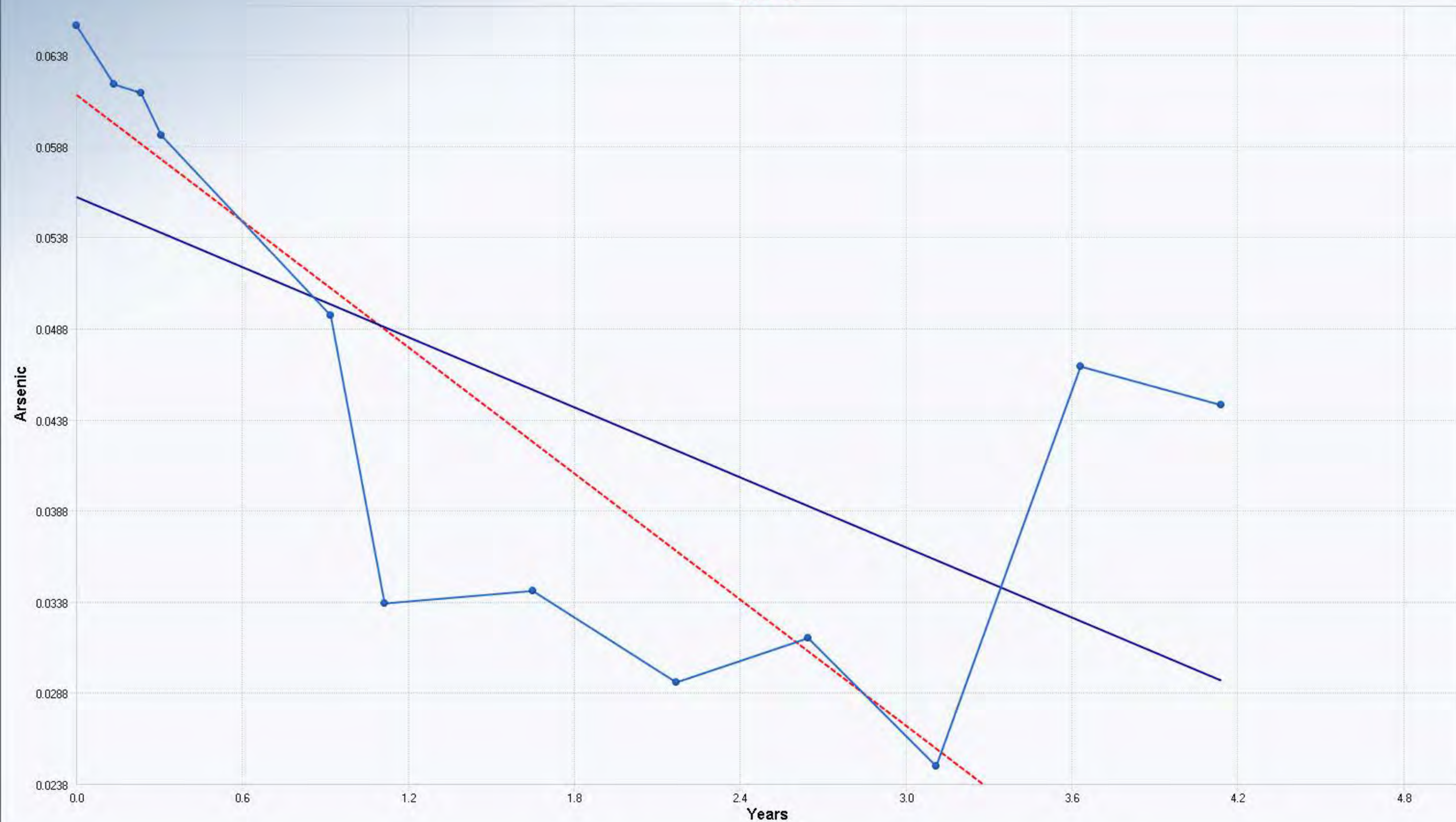
OLS Regression Slope	0.0021
OLS Regression Intercept	0.0220

Theil-Sen Trend Line (Red)

Theil-Sen Slope	0.0049
Theil-Sen Intercept	0.0166

Insufficient statistical evidence of a significant trend at the specified level of significance.

MW-10



Mann-Kendall Trend Analysis

n	12
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	14.5831
Standardized Value of S	-2.8115
M-K Test Value (S)	-42
Tabulated p-value	0.0020
Approximate p-value	0.0025

OLS Regression Line (Blue)

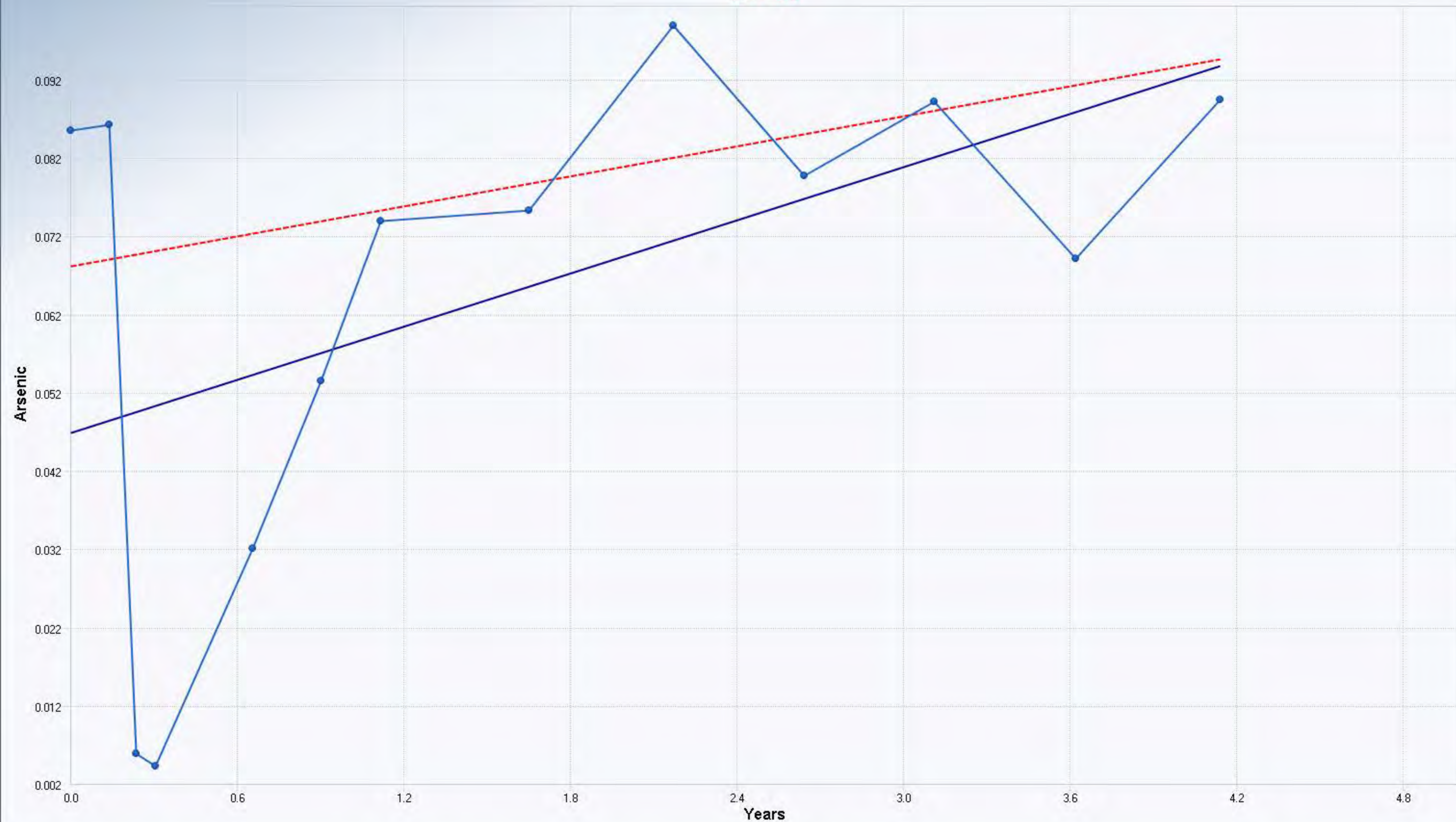
OLS Regression Slope	-0.0064
OLS Regression Intercept	0.0560

Theil-Sen Trend Line (Red)

Theil-Sen Slope	-0.0115
Theil-Sen Intercept	0.0616

Statistically significant evidence of a decreasing trend at the specified level of significance.

MW-43



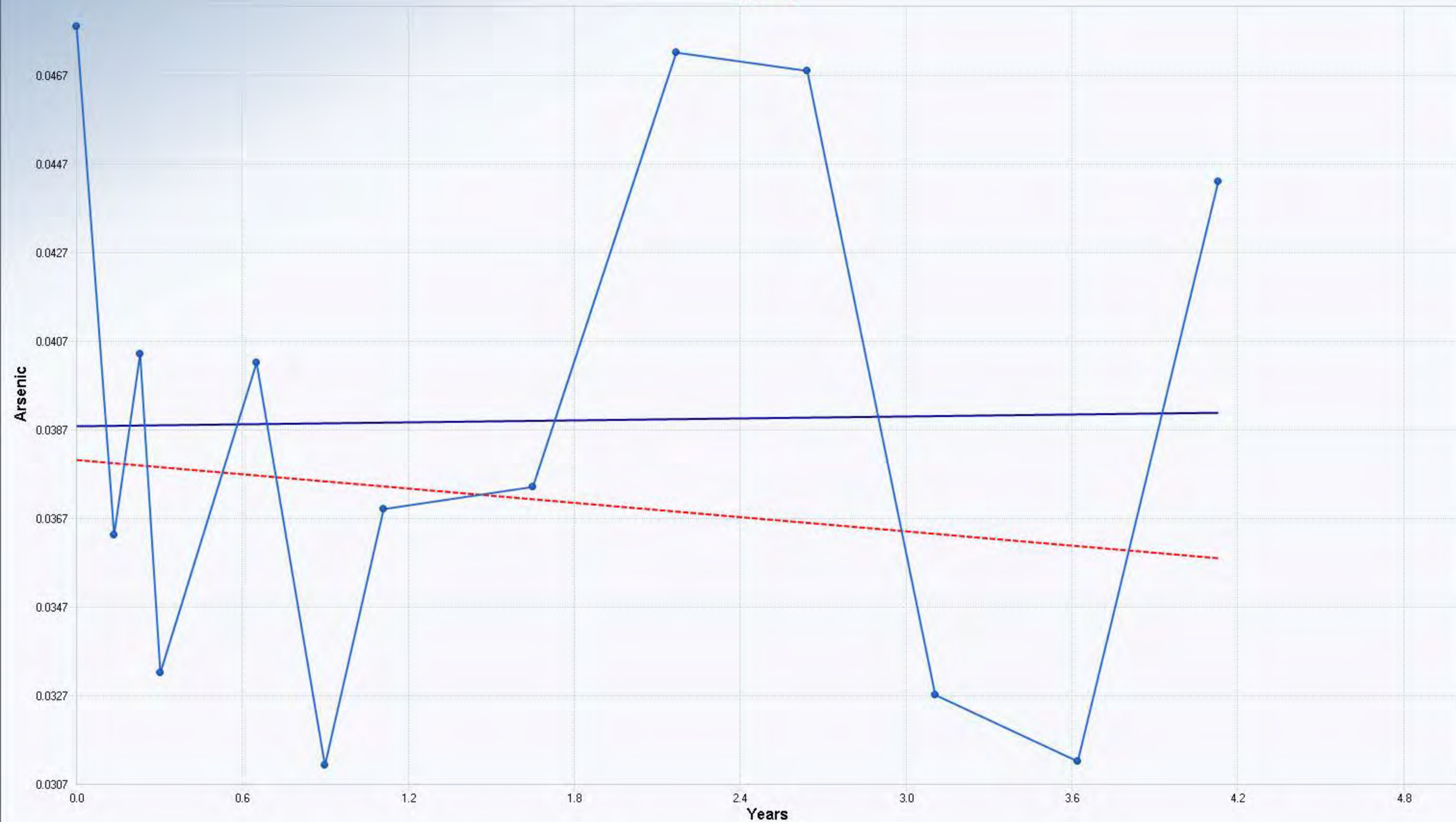
Mann-Kendall Trend Analysis	
n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	16.3911
Standardized Value of S	1.6472
M-K Test Value (S)	28
Tabulated p-value	0.0500
Approximate p-value	0.0498

OLS Regression Line (Blue)	
OLS Regression Slope	0.0113
OLS Regression Intercept	0.0470

Theil-Sen Trend Line (Red)	
Theil-Sen Slope	0.0064
Theil-Sen Intercept	0.0683

Statistically significant evidence of an increasing trend at the specified level of significance.

MW-49



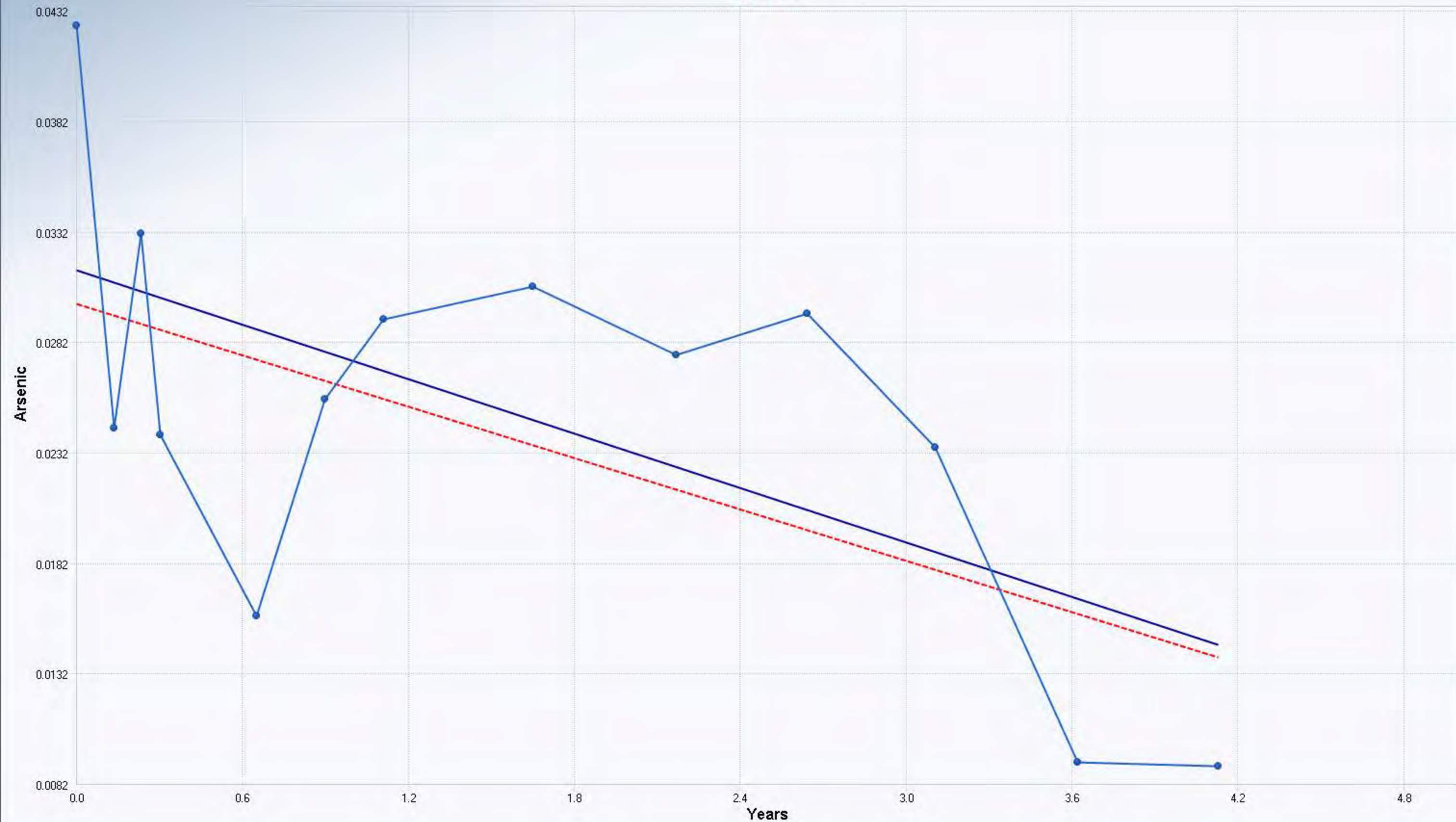
Mann-Kendall Trend Analysis	
n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	16.3911
Standardized Value of S	-0.4271
M-K Test Value (S)	-8
Tabulated p-value	0.3380
Approximate p-value	0.3347

OLS Regression Line (Blue)	
OLS Regression Slope	0.0001
OLS Regression Intercept	0.0388

Theil-Sen Trend Line (Red)	
Theil-Sen Slope	-0.0005
Theil-Sen Intercept	0.0380

Insufficient statistical evidence of a significant trend at the specified level of significance.

MW-50



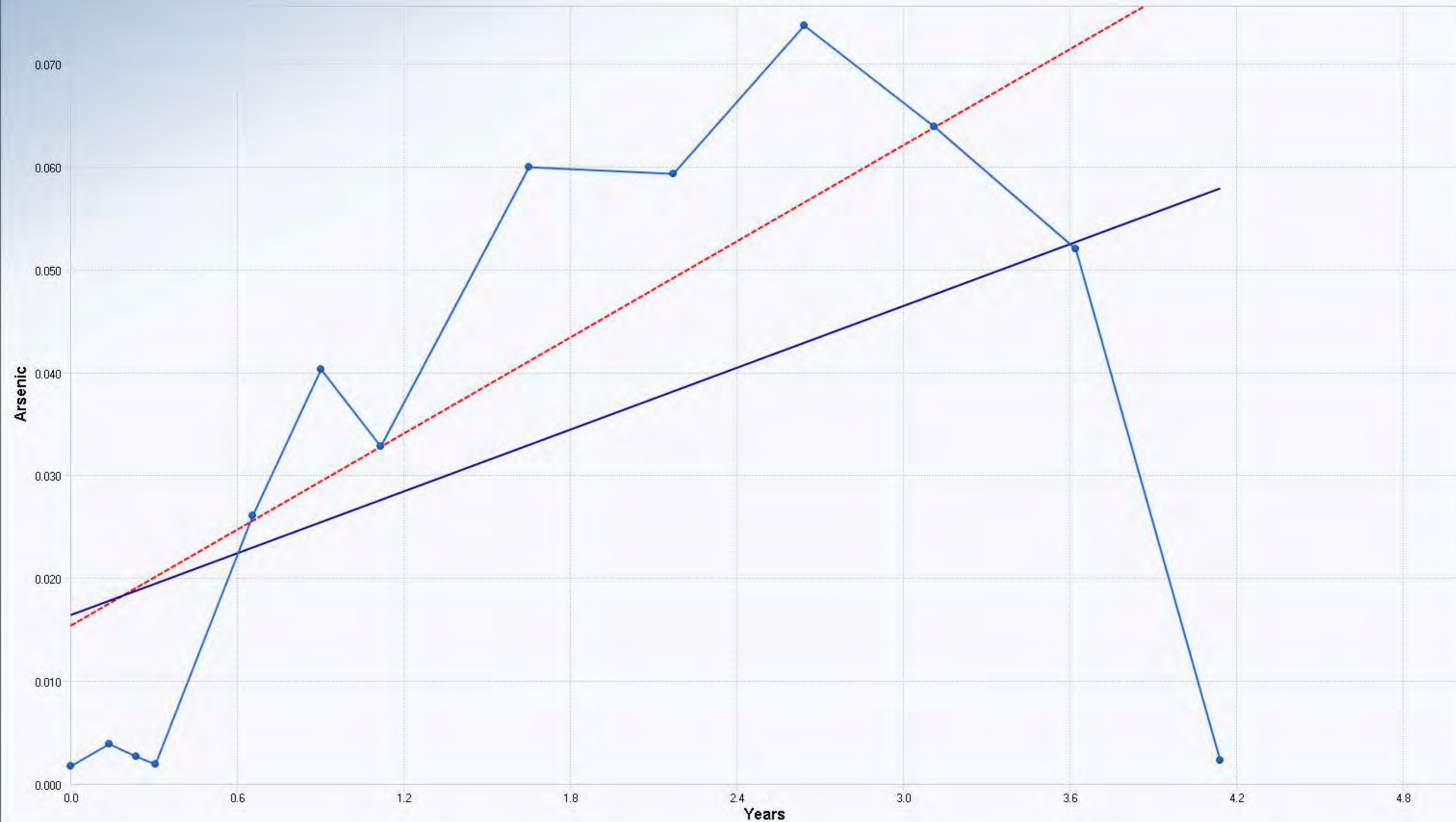
Mann-Kendall Trend Analysis	
n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	16.3911
Standardized Value of S	-1.7693
M-K Test Value (S)	-30
Tabulated p-value	0.0380
Approximate p-value	0.0384

OLS Regression Line (Blue)	
OLS Regression Slope	-0.0041
OLS Regression Intercept	0.0314

Theil-Sen Trend Line (Red)	
Theil-Sen Slope	-0.0039
Theil-Sen Intercept	0.0299

Statistically significant evidence of a decreasing trend at the specified level of significance.

MW-51



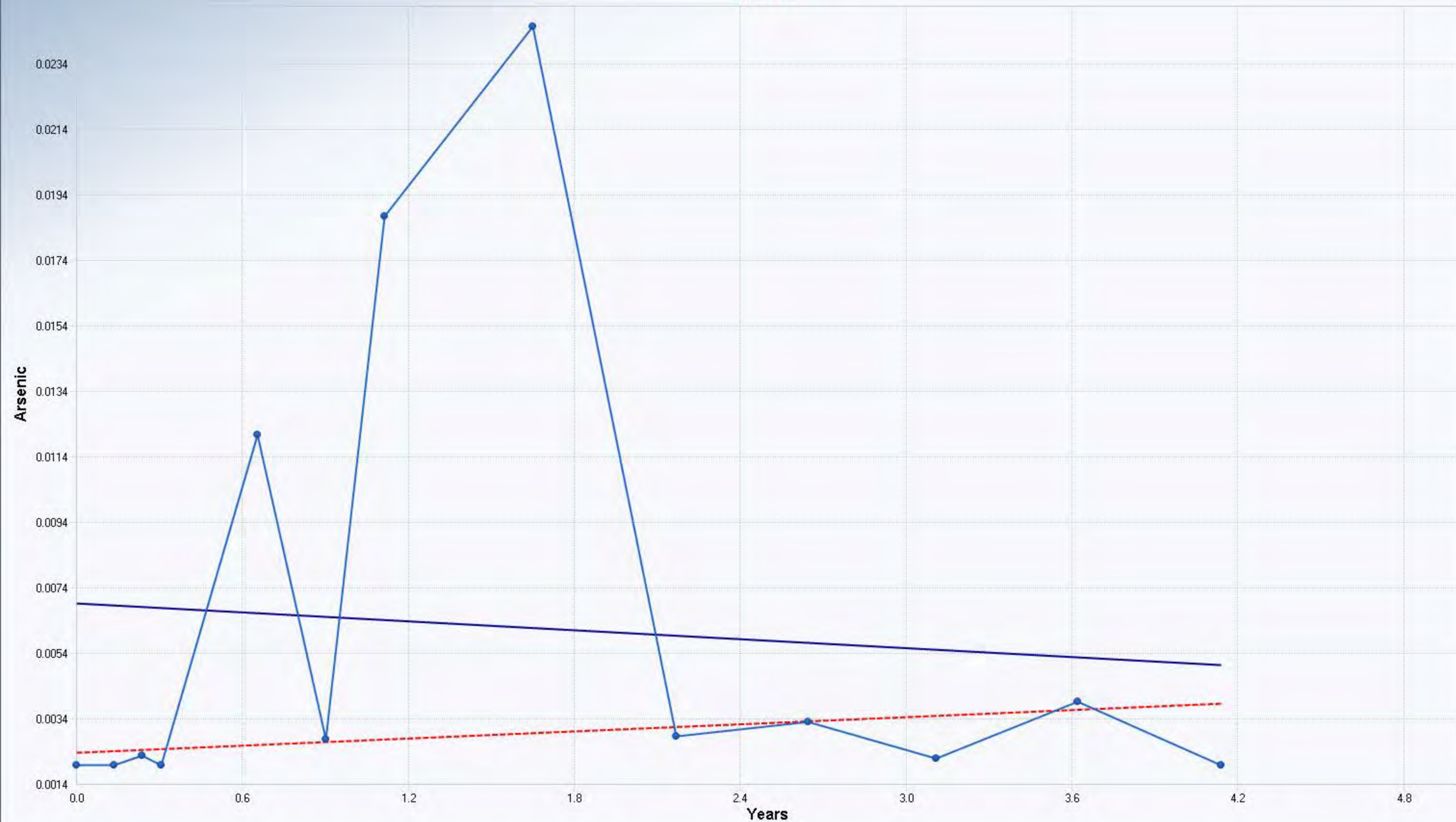
Mann-Kendall Trend Analysis	
n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	16.3911
Standardized Value of S	2.2573
M-K Test Value (S)	38
Tabulated p-value	0.0110
Approximate p-value	0.0120

OLS Regression Line (Blue)	
OLS Regression Slope	0.0100
OLS Regression Intercept	0.0166

Theil-Sen Trend Line (Red)	
Theil-Sen Slope	0.0155
Theil-Sen Intercept	0.0157

Statistically significant evidence of an increasing trend at the specified level of significance.

MW-52



Mann-Kendall Trend Analysis

n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	16.1245
Standardized Value of S	1.0543
M-K Test Value (S)	18
Tabulated p-value	0.1530
Approximate p-value	0.1459

OLS Regression Line (Blue)

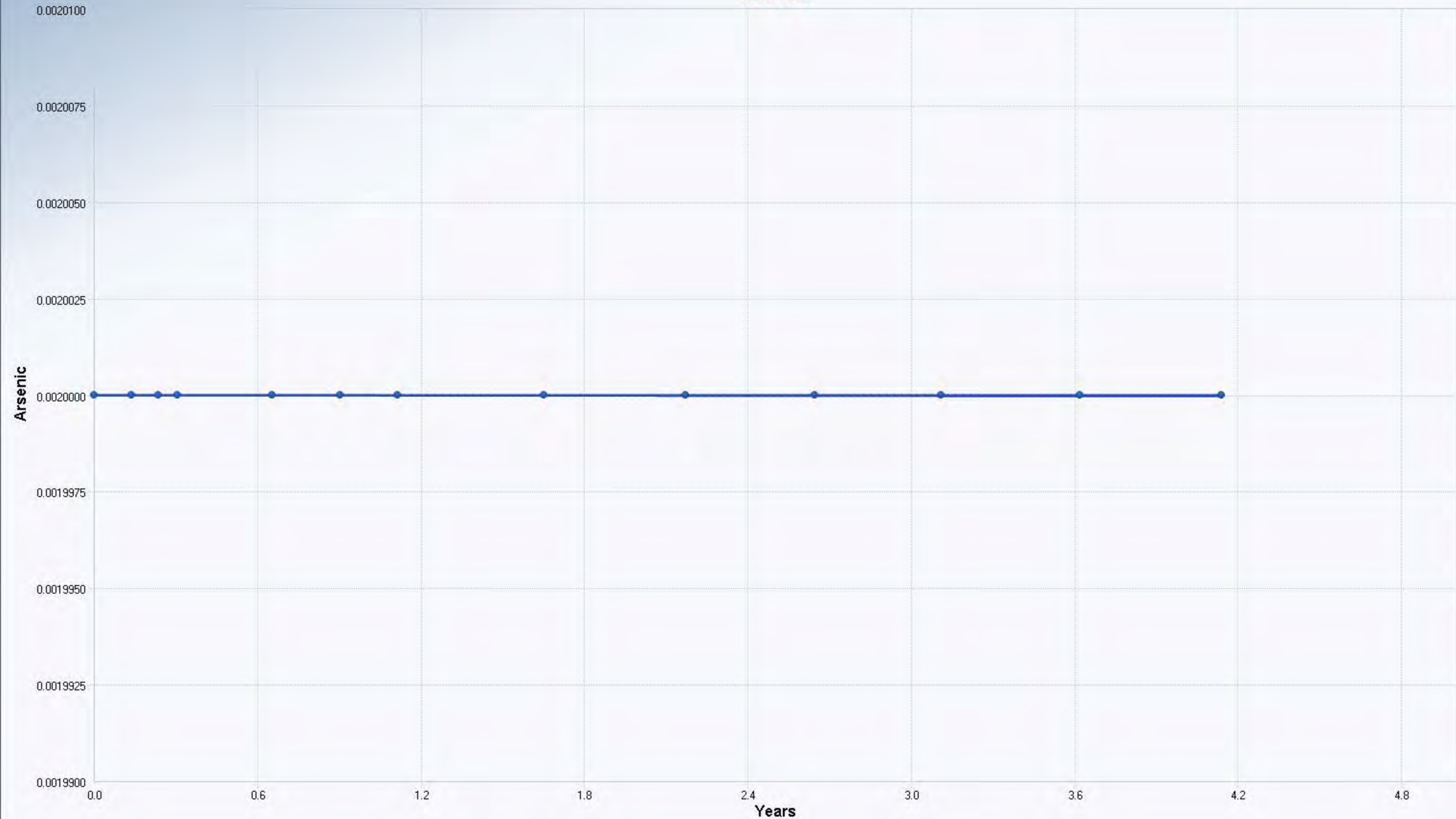
OLS Regression Slope	-0.0005
OLS Regression Intercept	0.0070

Theil-Sen Trend Line (Red)

Theil-Sen Slope	0.0004
Theil-Sen Intercept	0.0024

Insufficient statistical evidence of a significant trend at the specified level of significance.

MW-53



Mann-Kendall Trend Analysis

n	13
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	0.0000
Standardized Value of S	
M-K Test Value (S)	0
Tabulated p-value	0.5240
Approximate p-value	

OLS Regression Line (Blue)

OLS Regression Slope	0.0000
OLS Regression Intercept	0.0020

Theil-Sen Trend Line (Red)

Theil-Sen Slope	0.0000
Theil-Sen Intercept	0.0020

Insufficient statistical evidence of a significant trend at the specified level of significance.



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