2025 Annual Water Quality Report

Coal Combustion Residue (CCR) Landfill

Muscatine Power and Water

April 09, 2026

The Power of Commitment

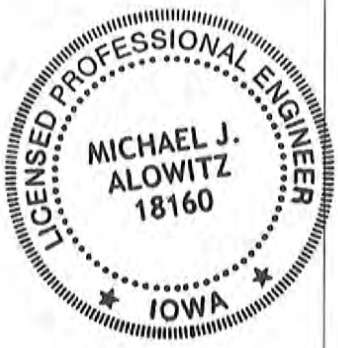
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Certification

2025 Annual Water Quality Report
Muscatine Power and Water
CCR Landfill
Permit No. #70-SDP-06-82P



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: 4/9/2026

License Number: 18160

My license renewal date is: December 31, 2026

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Executive Summary

This *Annual Water Quality Report* (AWQR) was prepared by GHD Services Inc.(GHD) on behalf of Muscatine Power and Water (MPW) for the MPW Coal Combustion Residue (CCR) landfill located in Muscatine County. This facility is regulated under Iowa Department of Natural Resources (DNR) Sanitary Disposal Project Permit No. 70-SDP-06-82P issued on August 10, 2020 (Doc #98816). This permit expires August 10, 2030. This AWQR is submitted to comply with requirements of MPW's landfill permit and Iowa Administrative Code (IAC) 567, Paragraph 103.1(4)e.

This report documents groundwater monitoring and leachate management in 2025. The CCR Landfill is in active use. Portions of the CCR Landfill are under final closure and portions are under interim cover.

There are no actions on requests pending in this AWQR and no changes to the monitoring system plan are recommended.

The landfill has been sampled semiannually under assessment monitoring since October 2016. The Hydrologic Monitoring System Plan (HMSP) consists of 18 groundwater monitoring points: four upgradient monitoring wells, six downgradient monitoring wells, two groundwater cutoff drains, three assessment monitoring points, and three monitoring points used solely for groundwater level measurements. There are also three surface water sampling points, one upstream, and two downstream. Groundwater samples were analyzed for constituents under the approved permit list consisting of arsenic, aluminum, barium, beryllium, boron, calcium, chloride, cobalt, copper, fluoride, iron, lead, lithium, magnesium, manganese, molybdenum, selenium, strontium, sulfate, and zinc. At the request of DNR, total suspended solids (TSS) was added as a analyte in 2025. TSS was included in the spring but inadvertently not included in the fall sampling list. TSS is planned for inclusion in both 2026 sampling events. A leachate sample was also collected.

The predominant Site-wide flow direction is from the west and east toward the center of the Site before flowing southward toward the Farm Pond, consistent with historical interpretations of the flow pattern.

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Abbreviations

AWQR	Annual Water Quality Report
CCR	Coal Combustion Residue
cm/sec	centimeter per second
DNR	Department of Natural Resources
EPA	Environmental Protection Agency
GES	Green Environmental Services
HAL	Health Advisory Level
HMSP	Hydrologic Monitoring System Plan
i	Average horizontal hydraulic gradient
IAC	Iowa Administrative Code
K	Hydraulic Conductivity
LCSP	Leachate Collection System Performance Evaluation
m/d	meters per day
MCL	Maximum Contaminant Level
mg/L	milligram(s) per liter
MPW	Muscatine Power and Water
n	Effective porosity
NPDES	National Pollutant Discharge Elimination System
PGW	Protected Groundwater
SDWR	Secondary Drinking Water Regulations
SSI	Statistically Significant Increases
SWS	Statewide Standards
V	linear velocity

1. Introduction

This *Annual Water Quality Report* (AWQR) for the Muscatine Power and Water (MPW) Coal Combustion Residue (CCR) landfill was prepared by GHD Services Inc. (GHD) on behalf of MPW. The landfill is used for disposal of CCR from the MPW coal-fired plant located at 1700 Dick Drake Way in Muscatine, Iowa. The approximate 80-acre landfill is located 7.5 miles west of the power plant in the SW ¼ of Section 16 Township 76N, Range 3W in Muscatine County. The Site location is shown on Figure 1.

The landfill has been in continuous operation since 1985. The CCR includes a mixture of gypsum, fly ash, bottom ash, and slag materials. The landfill consists of four separate phases encompassing approximately 34 acres shown on Figure 2. Phases I and II are currently permitted and under development while phases III and IV are designated for future development. This facility is regulated under Iowa Department of Natural Resources (DNR) Sanitary Disposal Project Permit No. 70-SDP-06-82P reissued on August 8, 2020 (Doc# 98816). The permit expires August 8, 2030.

Water discharge from this facility is regulated under DNR National Pollutant Discharge Elimination System (NPDES) Permit No. 7000109 issued on January 19, 2010, and expired on January 18, 2015. An application for permit renewal was submitted to the DNR on July 18, 2014, and ruling on this application is still pending. Under the pending permit renewal, MPW is authorized to discharge from the farm pond. Quarterly monitoring of the designated Farm Pond outfall and quarterly reporting are completed by MPW in accordance with this permit.

In accordance with State of Iowa [567] IAC Chapter 103.1(4)e and Special Provision X.3.g of the landfill permit, this AWQR summarizes the effects of the landfill on groundwater and surface water quality and includes the results of the annual measurements and analyses conducted at the monitoring points. This AWQR assesses sampling events conducted in April and September 2025.

The following list is milestone landfill development, plans and specifications, and reports.

Date	Title
State Reporting and Documentation	
11/01/1991	Closure/Post Closure Plan. Original date 11/01/1991, revised January 1996 and December 2009
11/21/1991	Supporting Development and Operations Plan (DOPS)
01/29/1993	Supplemental Plan Sheet 16.
2008-2010	Supplemental information dated 10/02/2008, 12/17/2009, and 03/30/2010.
1/17/2012	CCR Landfill Cell Development – Phase II Drawings
10/3/2018	Unstable Areas Determination
4/3/2019	CCR Landfill Cover Improvements - Drawings
10/16/2020	Construction Documentation Report, CCR Landfill Cover Improvements
Various	Annual Water Quality Report, AWQR (this report)
Various	Annual Leachate Control System Performance Evaluation Report, LCSPER (Included as part of AWQR)
Federal Reporting and Documentation	
10/19/2015	CCR Fugitive Dust Prevention and Control Plan; updated 12/5/2018
05/18/2016	Groundwater Monitoring System and Sampling and Analysis Program; updated 5/2/2017
10/17/2021	Run-on and Run-off Control System Plan
10/17/2016	Closure and Post-Closure Plan
Various	Annual CCR Fugitive Dust Control Report
Various	Annual Inspection Report
Various	Annual Groundwater Monitoring and Corrective Action Report

2. Sampling Protocol

2.1 Hydrologic Monitoring System Plan

The approved Hydrologic Monitoring System Plan (HMSP) (Doc# 39761) includes twelve groundwater monitoring points, which consisting of four upgradient monitoring wells (MW-8, MW-10, MW-22, and MW-23), six downgradient monitoring wells (MW-4A/4B, MW-5B, MW-6A, MW-14A, MW-15A, MW-21), and two groundwater cutoff drains (SW-24 and SW-25). MW-4B is a replacement of the previously damaged MW-4A well. There are also three surface water points, one upstream (SW-22) and two downstream (SW-23 and SW-26). The sample locations are shown on Figure 3 (note SW-26 is identified to the south of the area covered by the figure). All surface water samples were collected in April 2025, but only collected from SW-24, SW-25, and SW-26 in September 2025 due to insufficient water levels at SW-22 and SW-23.

There are also three assessment monitoring points, one upgradient (MW-24) and two downgradient (MW-26 and MW-27). The assessment points are sampled at the same time and for the same parameter list as the HMSP points, but may be included as part of the HMSP, abandoned, or simply used for water levels based on further assessment.

The role and monitoring location for HMSP monitoring points are identified in Table 1 and are routinely sampled for parameters specified in IAC Chapter 103.1(2)f and by the landfill permit outlined in Table 2. These parameters are arsenic, aluminum, barium, beryllium, boron, calcium, chloride, cobalt, copper, fluoride, iron, lead, magnesium, manganese, molybdenum, selenium, strontium, sulfate, and zinc. At the request of DNR, total suspended solids (TSS) was added as an analyte in 2025. TSS was included in the spring but inadvertently not reflected in the fall sampling list. TSS is planned for inclusion in both 2026 sampling events. These samples are used to assess potential impacts of the CCR landfill on surrounding groundwater and surface water. Table 3 provides the past and future monitoring well maintenance and performance evaluation schedule.

The HMSP and assessment wells were used for measurement of groundwater levels during each 2025 sampling event along with three monitoring wells used solely for gauging (MW-9, MW-11, and MW-12) to assess trends and horizontal groundwater flow paths. Several monitoring well pairs are also used to assess vertical hydraulic gradient, including MW-8/9, MW-10/11, and MW-11/12. Additionally, the water level is monitored at one piezometer (PZ-05), which was dry during both monitoring events in 2025. A summary of 2025 groundwater level measurements is presented in Table 4.

2.2 Monitoring Well Inspection

An annual review of well performance is conducted to confirm that HMSP wells continue to function as viable monitoring points. A schedule of these reviews is included in Table 3. A summary of the well information and measurements is included in Table 4. Water levels and measurements were recorded and are summarized in Table 4. The depth of each HMSP well is also measured annually. The information is used to assess changes in horizontal and vertical groundwater flow gradients and flow paths, and for potential well deterioration. Groundwater contours generated from the April and September 2025 sampling event are displayed in Figures 4 and 5, respectively.

This review indicates that groundwater horizontal flow gradients appear stable, and wells remain viable sampling points and are physically intact, void of excessive turbidity, and provide the anticipated recharge during sampling. Based on this review, no changes to the HMSP wells, with respect to existing monitoring well performance, are recommended. The monitoring evaluation schedule is included in Table 3.

2.3 Sample Collection

Sampling was conducted via low-flow methods. Samples are placed in laboratory-provided containers and preserved on ice. They are then submitted to Eurofins Environmental Testing in Cedar Falls, Iowa for analysis.

Prior to sample collection, the temperature, conductivity, pH, oxidation-reduction potential, dissolved oxygen, and turbidity of the purge water are measured and recorded. Copies of the groundwater sampling records for the 2025 monitoring events are attached in Appendix A. During the 2025 monitoring events, field duplicate samples were collected from monitoring wells MW-5 and MW-22 during the April 2025 event, and from MW-08 and MW-22 during the September 2025 event.

3. Groundwater Flow Conditions

3.1 Hydrology

Surface water enters the Site via an intermittent stream originating in agricultural land in the SE¼ of Section 16. The stream enters the Site near the northeast corner of the inactive, final covered and vegetated portion of the Phase I fill area. The entry point at the property boundary represents the upstream surface water quality monitored by SW-22. The stream is then routed through a constructed bypass ditch which diverts collected off-Site and on-Site non-fill surface drainage around the landfill and eventually to a farm pond at the southern boundary of MPW property. This bypass ditch runs along the north and west perimeters of the landfill and sediment runoff control pond before it connects back into the original stream bed location southwest of the landfill. The downstream quality of the bypass ditch is monitored by SW-23. The stream then flows south to the Farm Pond, which is monitored at its overflow point SW 26 (farm pond overflow) corresponding to the NPDES permit's outfall #001.

Runoff originating from the Phase I and II area is managed differently depending on whether it has been in contact with CCR or not. The landfill is managed to minimize storm water contact with the CCR. The general stormwater management approach includes:

– Where possible, runoff from areas that have received final cover is routed off the landfill in a manner that bypasses the Site Sediment Runoff Pond.
– In the active area where runoff originating on CCR is generated, the runoff is routed to landfill surface drains and directed to a sediment runoff pond forebay located west of Phase II. The forebay is intended to capture sediment prior to discharge to the Sediment Runoff Pond.
– Portions of the active landfill where final cover is not present and is not intended to receive CCR within a reasonable period are graded and temporarily covered with soil to prevent generation of contact water. This non-contact runoff is routed directly to the Sediment Runoff Pond. As these areas transition to active CCR filling, runoff will be diverted to the Sediment Runoff Pond forebay as described above to the extent practical.

The water level in the Sediment Runoff Pond is controlled by MPW staff through operation of a siphon outlet to the bypass ditch/stream confluence area. Eventually, all the runoff generated from this Site flows to the Farm Pond and discharges at the NPDES outfall as described above.

A groundwater cutoff drain runs along the east side of the landfill and empties south of the Sediment Runoff Pond to flow to the Farm Pond. The upstream end of the cutoff drain is monitored via SW-25. The conditions at the outlet end are represented by SW-24.

3.2 Hydrogeology

Green Environmental Services completed a Hydrogeologic Evaluation of the CCR landfill Site in October 1991 (GES, 1991, Doc# 28831) in compliance with the then-current requirements of Chapters 103 and 110 of the Iowa Administrative Code. The 1991 evaluation of the hydrogeologic conditions of the Site is the basis upon which the Hydrologic Monitoring System Plan was developed.

The uppermost aquifer in the vicinity of the CCR Landfill consists of a glacial till and clayey silt. No perched water zones have been observed. The water table elevation fluctuates with regional changes and varies with topography

and native stream flow patterns on the CCR Landfill Site. A clay-rich glacial till functions as a lower confining limit and overlies a carbonate bedrock. The depth to bedrock is 335 feet based on a water well drilled at the Site maintenance shop. Additional geologic details are included in the Groundwater Monitoring System and Sampling and Analysis Program (HR Green, 2017).

Groundwater flow maps were prepared using water level measurements from each monitoring event (Figures 4 and 5). The overall groundwater flow direction is generally southward, mimicking topography and surface water flow patterns. Groundwater flows from the west and east toward the center of the Site before flowing southward toward the Farm Pond (the northern extent of this pond is shown on Figures 4 and 5).

3.3 Horizontal Hydraulic Gradient and Groundwater Flow Velocity

Hydraulic conductivity data for the alluvial aquifer are estimated at 1.0E-5 to 1.0E-4 centimeters per second (cm/s) or 0.008 to 0.08 meters per day (m/d) (HR Green, 2017). For calculation purposes, a hydraulic conductivity of 0.04 m/d is used.

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 hydraulic conductivity (0.04 m/day); i equals the average horizontal hydraulic gradient; and n equals the effective porosity (estimated at 0.3). During the 2025 monitoring events, the average linear groundwater velocity at the shallow alluvial aquifer was estimated at 0.002 m/day (approximately 2 feet per year).

3.4 Vertical Hydraulic Gradient

Water levels measured in monitoring well pairs MW-8/MW-9, MW-10/MW-11, and MW-11/MW-12 during the two 2025 gauging events, where both wells in each nest were gauged, 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 variable, ranging from 0.03 (at the MW-11/MW-12 well pair during the April 2025 gauging event) to a maximum difference of 13.01 feet (at the MW-8/MW-9 well pair during the September 2025 gauging event).

The vertical hydraulic gradients ranged from -0.826 (downward-directed flow) in well cluster MW-8/MW-9 (September 2025) to 0.057 (upward-directed flow) in well clusters MW-10/MW-11 (September 2025).

Vertical gradients were in the upward direction during both 2025 gauging events at well clusters MW-10/MW-11. The vertical gradient was in the downward direction during both 2025 monitoring events at well cluster MW-8/MW-9. Vertical gradient was upward in April 2025 monitoring event, and then downward in September 2025 monitoring event at well cluster MW-11/MW-12. The vertical hydraulic gradients for each monitoring event are summarized in Table 12.

4. Data Collection

The HMSP-approved semiannual monitoring events were performed in the spring (April 2025) and fall (September 2025). The events included monitoring points and parameters as described in Section 2.1 above and in accordance with the current DNR-approved HMSP.

Sampling documentation and analytical reports are included in Appendix A and Appendix B, respectively. Groundwater measurements and a summary of historical analytical results are included in Table 4 and Table 8, respectively.

The DNR requested lithium and TSS be added to the analyte list. Historical lithium data are available from the federal monitoring program for groundwater which is included in Table 8. Lithium is included in the September 2024 laboratory reports in Appendix B. TSS was only collected from 7 locations in 2024 due to timing of the DNR's request relative to sample collection and available sample volume. TSS was sampled in spring 2025 from all 10 monitoring wells but inadvertently omitted in fall 2025. The analysis is planned for both spring and fall 2026 sampling events. The spring 2025 TSS data were generally low values especially compared to fall 2024 data. After the 2026 data are available, a more thorough evaluation of the TSS data relative to metals results will be completed and documented in the 2026 AWQR.

4.1 Comparison to Background and Regulatory Standards

Statistical methods were employed to assess the control limits and findings of the analytical results. Statistical calculations were performed by Groundwater Stats Consulting. The statistical report dated December 17, 2025 (Appendix C), incorporates data collected through 2025 and the corresponding statistical analyses, including narrative, control limits, prediction limits, statistically significant increases (SSIs), and trend tests.

Analytical results were also evaluated against published standards. For constituents with a maximum contaminant level (MCL) established by the Environmental Protection Agency (EPA) results are compared to MCLs. The federal CCR rule 40 Code of Federal Regulations (CFR) §257.95(h)(2) provides comparison standards for cobalt, lead, and molybdenum where an MCL is not established. For lead, EPA established an action level which is often treated like an MCL. The EPA action level for lead of 0.015 mg/L is equivalent to the federal CCR rule and thus the lead standard is identified as an MCL in this report. For cobalt, lithium, and molybdenum, the federal CCR rule values are considered equal to MCLs for evaluating data and are used as the standards for evaluation in this report.

Where no MCL exists, results are compared to the Health Advisory Level (HAL) or secondary drinking water regulations (SDWR) value. Where an MCL (or federal CCR rule value), HAL, or SDWR value does not exist, data are compared to the Iowa Statewide Standards (SWS) for protected groundwater. Previous AWQRs used the Iowa SWS for comparison rather than the federal CCR rule values.

The resulting 2025 control limits and regulatory standards are summarized in Table 5 for groundwater and surface water.

4.2 2025 Water Quality Results

Sample collection records are provided in Appendix A and laboratory analytical reports are provided in Appendix B. Groundwater Stats Consulting evaluated the analytical data as reported in Appendix C. Appendix D provides graphs of analytical results over time for the monitoring network. Background concentrations are identified in Appendix C and Table 5. Table 7 provides a summary of locations and constituents with new or ongoing exceedances of control limits. Table 8 summarizes historical sample results from each sampling event from 2016 through 2025. Table 9 summarizes findings since 2016 where exceedances above the control limit, action level (MCL), or other standards (SDWR, HAL, SWS) have occurred.

4.3 Groundwater Results

The background analytical results of MW-8, MW-10, MW-22, MW-23, and SW-22 in 2025 and the statistical report (Appendix C) were used to develop an inter-well control limits for comparison to results from downgradient monitoring wells. These control limits are listed in Table 5; locations and constituents reported above these limits during at least one sampling event in 2025 are summarized in Table 7 and are listed below:

– Chloride at MW-5B.
– Boron, calcium, magnesium and sulfate at MW-14A.

– Boron, magnesium, and molybdenum at MW-15A.
– Boron, nickel, and selenium at MW-21.
– Boron and magnesium at MW-26.
– Boron and vanadium at MW-27.

Trend tests on the exceedances above and background wells were performed to determine if concentrations are increasing, decreasing, or stabilizing over time through the April and September 2025 sampling events. The Sen's Slope/Mann-Kendall tests were performed at a 99% confidence level. Decreasing trends were more prevalent in the groundwater data and the only increasing trends were noted at upgradient monitoring well locations. Statistically significant trends were identified for the following monitoring points:

– Chloride is increasing at upgradient monitoring well MW-23.
– Magnesium is increasing at upgradient monitoring well MW-14A.
– Sulfate is increasing at upgradient monitoring well MW-22.
– Boron is decreasing at downgradient monitoring well MW-15A.
– Chloride is decreasing at upgradient monitoring well MW-22 and downgradient monitoring well MW-5B.
– Magnesium is decreasing at downgradient monitoring well MW-15A.
– Selenium is decreasing at downgradient monitoring well MW-21.
– Sulfate is decreasing at upgradient monitoring wells MW-08 and MW-23.

Every sampled location in 2025 reported fluoride concentrations. For many locations this was the first time. The reporting is the result of a lowered reporting limit. In 2023-2025 the reporting limit was 1.0 mg/L. In 2025, the reporting limits was 0.1 mg/L and the highest reported fluoride concentration at a monitoring well was 0.0303 mg/L at MW-6A.

Monitoring well MW-27 which is a supplementary monitoring location had an elevated results of 2.75 mg/L aluminum in April 2025. The fall 2025 result was in line with historical results and the April 2025 result appears to be a potential outlier.

4.4 Surface Water Results

All surface water locations contained sufficient flow to collect samples in 2025. Background values to establish control limits are based on upgradient surface water monitoring point SW-22. Surface water monitoring data were subjected to the same statistical analyses as groundwater data. The following constituent and surface water locations exceeded the background prediction limits.

– Boron, calcium, magnesium, strontium, and sulfate at SW-24.
– Molybdenum at SW-25.
– Arsenic, chloride, cobalt, copper, lead, molybdenum, selenium, and strontium at SW-26.

No increasing trends were noted and decreasing trend was identified for boron and calcium at SW-24.

Surface water monitoring point SW-26 is the outlet of the Farm Pond also identified as Outfall 001 in the NPDES permit for the facility. The April 2025 results were below the MCL for arsenic. The arsenic result at SW-26 did exceed the arsenic MCL in fall 2025, fall 2024, and in at least one sample each previous year since 2019. No increasing trend has been identified for these fluctuating concentrations; total metals results in surface water samples are highly influenced by effects from rainfall, other surface disturbances, and/or water flowrate and volume so fluctuations are not unexpected.

Updates to the NPDES permit are anticipated and expected to be influenced by the most recent (2024) effluent limit guideline (ELG) for combustion residual leachate (CRL) associated with steam electric power; EPA extended the deadlines for ELG compliance and has scheduled reconsideration of the204 ELG in 2026, so requirements for CRL are expected to change in 2026. MPW intends to comply with the final ELG and continues to take action to explore means to reduce leachate volume to support compliance. Monitoring of leachate volume was improved in 2025 and

installation of a rain cover over a portion of the open portion of the landfill is planned in 2026. These efforts are aimed to better understand and minimize leachate volumes to support planning alternative management strategies and final ELG compliance requirements. Final ELG and other discharge requirements will be identified and enforced in the NPDES permit to be modified and issued by IDNR.

Monitoring point SW-24 is at the end of a groundwater cutoff drain primarily running north-south along the east side of the landfill (Figure 3). The SW-24 results generally represent declining concentration trends. In spring 2025, molybdenum was reported at SW-24 for the first time but at a concentration only slightly above the reporting limit; molybdenum was not detected at SW-24 in the fall 2025 sample. Sulfate results at SW-24 exhibited a wide range from 129 mg/L in April 2025 to 594 mg/L in the fall. The fall 2025 result is consistent with sampling history at this location.

4.5 Comparison to Published Standards

Groundwater and surface water data are also compared to the published groundwater standards presented in Table 5. Each monitoring constituent is evaluated below relative to these standards.

- The upper bound of the aluminum SDWR value of 0.05 – 0.2 mg/L was exceeded at upgradient monitoring wells MW-23 and MW-27, along with surface water location SW-26 in 2025.
- The arsenic MCL of 0.01 mg/L was exceeded in the 2025 monitoring event once at SW-26.
- Barium was reported at every monitoring location during 2025, but no results exceeded the MCL of 2 mg/L.
- Beryllium was not reported at any monitoring location during 2025. The reporting limit of 0.001 mg/L is below the MCL of 0.004.
- Boron has a HAL of 6 mg/L. This value was exceeded at downgradient monitoring wells MW-14A (twice) and MW-15A (once) in 2025. The HAL was also exceeded at surface water monitoring point SW-24.
- There is no published standard for calcium. Calcium was reported at each monitored location in 2025.
- The chloride SDWR value is 250 mg/L. Chloride was detected at each monitored location in 2025 at concentrations below the SDWR value.
- The standard for cobalt established by the federal CCR rule is 0.006 mg/L. Cobalt was detected at concentrations below the standard at five monitoring well locations in 2025; cobalt was detected at 0.140 mg/L at surface water location SW-26.
- Copper has an MCL of 1.3 mg/L. There was only one detection of copper in 2025 (below the standard at SW-26).
- Fluoride has an MCL of 4 mg/L. The reporting limit for fluoride varied over the course of monitoring; during 2025 the reporting limit was 0.100 mg/L. Fluoride was detected above this lower reporting limit at all monitored locations in 2025.
- Iron has an SDWR value of 0.3 mg/L. This value was exceeded at two upgradient monitoring locations (MW-8 and MW-10) 5 downgradient monitoring locations (MW-4B, MW-5B, MW-6A, MW-23, and MW-27) and one surface monitoring location (SW-26) at least once in 2025.
- Lead has an MCL of 0.015 mg/L. This value was not exceeded at any monitored location in 2025.
- Lithium has a standard established by the federal CCR rule of 0.04 mg/L. Lithium was reported at three locations in 2025 with a maximum of 0.0651 mg/L at SW-26. All other values were below the standard.
- There is no published standard for magnesium. Magnesium was detected at each monitored location in 2025.
- Manganese has an SDWR value of 0.05 mg/L and a HAL of 0.3 mg/L. The SDWR value was exceeded at three background monitoring wells (MW-8, MW-10, MW-22), six downgradient monitoring wells (MW-4B, MW-5B, MW-6A, MW-21, MW-26, and MW-27), and downgradient surface monitoring points SW-23 and SW-26. Of these locations, the HAL was also exceeded at least once in 2025 at MW-4B, MW-5B, MW-8, MW-22 and MW-21.
- Molybdenum has a standard of 0.1 mg/L established by the federal CCR rule. The standard was not exceeded at any monitored location in 2025.
- Selenium has an MCL of 0.05 mg/L. Selenium was only detected at one location in 2025 (MW-21) at a concentration below the MCL.

- Strontium has a HAL of 4 mg/L. Strontium was detected at each monitored location in 2025 at concentrations below the HAL.
- Sulfate has an SDWR value of 250 mg/L. Sulfate was reported at each monitored location in 2025 with concentrations above the SDWR value at downgradient monitoring wells MW-14A, MW-15A, and MW-26. Downgradient surface water locations SW-24 and SW-25 also had results exceeding the SDWR value.
- There are no standards for TSS. TSS was only included at 10 monitoring locations in April 2025 with a maximum concentration of 73.5 mg/L at MW-23.
- Zinc has a HAL of 2 mg/L and an SDWR value of 5 mg/L. Zinc was only detected at one monitoring location in 2025 (at SW-26 in April 2025).

5. Leachate Collection System Performance Evaluation

This Leachate Collection System Performance Evaluation Report (LCSPER) is included in this AWQR as required in Special Provision 6.e of the current landfill SDP permit dated August 10, 2020, and amended October 29, 2020.

The leachate collection system is located in the Phase I and Phase II areas of the developed portions of the landfill. The system consists of three perforated leachate pipes running north-south that tie into an east-west leachate header line. Two of the perforated pipes are located under the west portion of Phase I, while the third is located under Phase II. The east-west header line is also paralleled by a perforated pipe which collects leachate off the north end of Phase II and east into Phase I. All collected leachate in the existing system gravity drains into Lift Station A located along the haul road north of the sediment runoff pond.

5.1 Phase I Leachate Collection System

The two leachate collection pipes on the west side of Phase I were installed in the early 1990s and consist of six-inch diameter schedule 80 perforated pipe that was trenched into the native low permeability landfill base (clay till), backfilled with pea gravel, and covered by geotextile fabric and a sand berm directly over the pipe. Leachate collected in the perforated pipe flows north to the header system (GES, 1991). Leachate collection in Phase I is limited to the west side of that Phase as a majority of the initial CCR landfill development to the east and north had occurred prior to that time.

Historically leachate levels in the CCR had been measured with four piezometers (PZ-1, PZ-2, PZ-3, and PZ-4). These piezometers were abandoned in 2019 to facilitate landfill cover construction activities. The last measurements were documented in the 2019 AWQR. Leachate levels exceeding one foot had been present and persistent in all these piezometers throughout their existence.

5.2 Phase II Leachate Collection System

The Phase II lined cell was constructed in 2012 and includes a contemporary leachate collection design. The base of the landfill in this area consists of a four-feet thick, low permeability clay liner sloped to the center, with an overlying porous aggregate drainage layer over the entire cell. The drainage layer facilitates the flow of leachate along the sloped liner where it drains to a perforated pipe. The leachate then flows north to the header system (HR Green, August 2012). Leachate head on the Phase II liner is monitored with one piezometer (PZ-5). During the fall 2024 HMSP monitoring event, measurement of PZ-5 was dry. Throughout the period of record, head measurements have been less than one foot.

5.3 Leachate Management

The leachate from the collection header drains to Lift Station A. Leachate is then pumped from the lift station to the clay-lined forebay. The lift station pump operates continuously at a rate of 434 gallons per hour for a conservative estimated pumped volume of 3,800,000 gallons per year (HR Green, 2022). The water level in the forebay is controlled at a consistent level by a riser structure that regulates flow out to the Sediment Runoff Control Pond. Water in the Sediment Runoff Pond is managed under the Site's NPDES permit.

A sample was analyzed for constituents of concern in September 2024, April 2025, and September 2025, with the following detections (2024 result followed by April 2025 and September 2025):

- Antimony: 0.00312 mg/L, not detected in 2025.
- Arsenic: 1.64, 2.39, and 1.36 mg/L.
- Barium: 0.0241, 0.0501 mg/L, and not detected September 2025.
- Boron: 70.4, 69.8, and 50.2 mg/L.
- Cadmium: not detected in 2024; 0.000529 and 0.000867 mg/L in 2025.
- Calcium: 531, 434, and 455 mg/L.
- Chloride: 55.0, 81.6, and 120 mg/L.
- Fluoride: 2.47, 3.18, and 2.47 mg/L.
- Lithium: 0.330, 0.395, and 0.192 mg/L.
- Magnesium: 48.2, 61.9, and 23.9 mg/L.
- Manganese: 0.458, 2.1, and 0.0886 mg/L.
- Molybdenum: 0.775, 1.55, and 2.59 mg/L.
- pH: 8.8, 8.9, and 9.0 SU.
- Strontium: 4.02, 6.27, and 6.18 mg/L.
- Sulfate: 4,840, 192, and 6,720 mg/L.
- TDS: 7,880, 7,600, and 9,500 mg/L.
- Combined Radium 226 + 228: 4.54 pCi/L, not detected, and 1.33 pCi/L

Results are generally similar between 2024 and 2025. For most analytes, the 2025 result is higher than the 2024 result. The significantly lower sulfate concentration in April 2025 is inconsistent with other observations. A leachate sample will be collected in fall 2026.

5.4 LCSPE

The presence and variability of leachate levels in Phase I based on historical measurements is typical of heterogeneous CCR fill deposits where a complete underdrain collection system is not present. Given this, the most feasible way to achieve the lowest possible leachate is by minimizing the amount of infiltration into the fill by application of final and temporary soil cover. This was the main focus of the 2019-2020 landfill cover construction activities. Leachate levels in Phase I are expected to stabilize over time. However, it is unlikely that the older Phase I leachate collection system will achieve the standard of a contemporary system of less than 12 inches of leachate head. The Phase I system removes leachate proximate to the collection pipes but was not designed to meet a standard applied to leachate piezometers throughout the cell.

In Phase II, where a contemporary leachate collection system with complete granular underdrain is installed, leachate head on the engineered liner has historically been maintained at less than one foot. This is considered acceptable for a modern collection system.

In 2026, a rain cover will be installed over two portions of the uncapped portion of the landfill in an attempt to minimize infiltration and decrease leachate generation. The raincover is part of activities around improving leachate monitoring and assessing future leachate management.

6. Receptor Survey

In the October 2025 review letter, DNR requested a receptor survey relative to public or private water intakes within 1 mile of the landfill. The search radius was set for 1 mile from the SW-26 surface water point using the DNR's solid waste mapping system. The search was set to display all wells and water intakes. No water intakes were identified. Within the search radius, the MPW shop well was identified and three plugged wells. Three private wells were identified within the search radius, but they are upgradient or cross gradient. Based on satellite imagery, there is a property that likely includes a well which was not identified. Appendix E contains an annotated output of the search for reference.

7. Conclusions and Recommendations

This AWQR documents groundwater and surface water monitoring conducted at MPW CCR landfill during the 2025 monitoring period. Two sample events were conducted in April and September of 2025.

The groundwater flow was consistent through the spring and fall 2025 monitoring events, with flow direction generally toward the middle of the Site and southward toward the lower-lying farm pond. The groundwater contour maps (Figures 4 and 5) indicate the monitoring network is sufficient and has appropriately located background and downgradient well locations.

Samples collected during the monitoring period were analyzed under the approved permit list, with the following exceedances above established control limits were noted:

– Barium and chloride at MW-5B.
– Boron, calcium, magnesium, and sulfate at MW-14A.
– Boron and magnesium at MW-15A.
– Boron and selenium at MW-21.
– Boron at MW-26.
– Boron at MW-27.
– Boron, calcium, magnesium, strontium, and sulfate at SW-24.
– Molybdenum at SW-26.

Exceedances of published groundwater standards were primarily SDWR values. No constituents exceeded an MCL in groundwater. Exceedances of published standards are summarized below including surface water.

– Aluminum (SDWR) at four locations.
– Arsenic (MCL) at surface water location SW-26.
– Boron (HAL) at three locations.
– Cobalt (CCR GWPS) at surface water location SW-26.
– Iron (SDWR) at five locations.
– Lithium (CCR GWPS) at surface water location SW-26.
– Manganese (HAL) at eight locations.

– Sulfate (SDWR) at five locations.

The monitoring network is sufficient to assess groundwater, however, monitoring well MW-26 and MW-27 which were added as delineation wells should remain in the monitoring network. Given the groundwater flow patterns and network, MW-14A provides little value with downgradient locations MW-15A, MW-26, and MW-27 available as further downgradient points. No changes to the monitoring network are proposed in this report, however, the monitoring network will continue to be evaluated in future reports.

Based on the evaluation findings, the MPW Site should continue groundwater monitoring as outlined in Table 2 and in accordance with Permit No. 70-SDP-06-82P. No changes to the monitoring network or sampling procedures are necessary. Lithium and TSS will be included in the analyte lists for 2026.

During evaluation of 2025 data, inconsistencies in the historical data record were noted. These inconsistencies generally manifest as missing data in summary tables. To improve data record keeping for this Site, MPW is contracting with Eurofins to provide electronic data deliverables back to 2018 in a data-base ready format. The data inconsistencies are not believed to affect the statistical analysis and recent data presentation, however, the 2026 AWQR may present updated tables and formats after the database is built directly from laboratory files. The 2026 analytical data will be reported in database-ready formats.

8. References

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Table 1

Monitoring Program Summary
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
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Monitoring Location	Monitored Unit	Current Monitoring Program	Change for next sampling event	2025 Control Limit Exceedances	Total # of Samples in each monitoring program since January 1, 2020		
					Routine	Supplemental	Remedial Action
MW-4B	Uppermost Aquifer	Routine	No change	None	12	0	0
MW-5B	Uppermost Aquifer	Routine	No change	Chloride	12	0	0
MW-6A	Uppermost Aquifer	Routine	No change	None	12	0	0
MW-8	Uppermost Aquifer	Background	No change	None	12	0	0
MW-10	Uppermost Aquifer	Background	No change	None	12	0	0
MW-14A	Uppermost Aquifer	Routine	No change	Boron, Calcium, Magnesium, Sulfate	12	0	0
MW-15A	Uppermost Aquifer	Routine	No change	Boron	12	0	0
MW-21	Uppermost Aquifer	Routine	No change	Boron, Nickel	12	0	0
MW-22	Uppermost Aquifer	Background	No change	None	12	0	0
MW-23	Uppermost Aquifer	Background	No change	None	12	0	0
SW-24	Cutoff Drain - South	Routine	No change	Boron, Calcium, Magnesium, Strontium, Sulfate	10	0	0
SW-25	Cutoff Drain - East	Routine	No change	Molybdenum	10	0	0
SW-22	Surface Water	Background	No change	None	9	0	0
SW-23	Surface Water	Routine	No change	None	9	0	0
SW-26	Surface Water - Pond	Routine	No change	Arsenic, Chloride, Molybdenum, Strontium	9	0	0
Other monitoring points							
PZ-5	CCR	Leachate Level	No change	NA	7	0	0
MW-9	Uppermost Aquifer	Water Level	No change	NA	7	0	0
MW-11	Uppermost Aquifer	Water Level	No change	NA	7	0	0
MW-12	Lower Confining Unit	Water Level	No change	NA	7	0	0
MW-24	Uppermost Aquifer	Assessment	No change	None	11	0	0
MW-26	Uppermost Aquifer	Assessment	No change	Boron	10	0	0
MW-27	Uppermost Aquifer	Assessment	No change	Boron	10	0	0

Table 2

Monitoring Program Implementation Schedule
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
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	Recent Sampling Dates and Constituents				Upcoming Sampling Dates and Constituents	
Monitoring Location	Spring 2024	Fall 2024	Spring 2025	Fall 2025	Spring 2026	Fall 2026
MW-4B	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
MW-5B	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
MW-6A	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
MW-8	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
MW-10	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
MW-14A	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
MW-15A	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
MW-21	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
MW-22	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
MW-23	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
SW-24	Permit List	-	Permit List	Permit List	Permit List	Permit List
SW-25	Permit List	-	Permit List	Permit List	Permit List	Permit List
SW-22	Permit List	-	Permit List	-	Permit List	Permit List
SW-23	Permit List	-	Permit List	-	Permit List	Permit List
SW-26	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
MW-24	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
MW-26	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
MW-27	Permit List	Permit List	Permit List	Permit List	Permit List	Permit List
Lechate	-	Permit List	Permit List	Permit List	-	Permit List

Permit List: Arsenic, barium, beryllium, cobalt, copper, iron, lead, magnesium, manganese, selenium, zinc, chloride, sulfate, aluminum, calcium, boron, fluoride, molybdenum, and strontium. Supplemental analsyis of lithium and total suspended solids for groundwater

- could not sample due to insufficient flow

Monitoring Well Maintenance and Performance Evaluation Schedule
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
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Compliance with:	Monitoring Calendar Years								
	2018	2019	2020	2021	2022	2023	2024	2025	2026
567 IAC 114.21(2)"a" high and low water levels	Completed		Completed		Completed		Completed		Scheduled
567 IAC 114.21(2)"b" changes in the hydrologic setting and flow paths	Completed		Completed		Completed		Completed		Scheduled
567 IAC 114.21(2)"c" well depths	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled

Monitoring Well Maintenance and Performance Summary
2025 Annual Water Quality Report
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Well	Top of Casing (ft, amsl)	Top of Screen (ft, amsl)	Total Depth (ft)		Date of Measurements		Vertical Gradient 9/12/2025[1]	Water Levels (ft amsl)		Maximum Depth
					18-04-25	10-09-25		Low	High	Discrepancy (ft)
MW-4B	715.87	694.09	27.95	Groundwater Level (ft)	7.7	7.18	-	705.73	710.01	0.15
				Groundwater Elevation (ft amsl)	708.17	708.69				
				Measured Well Depth (ft)	27.8	27.8				
				Submerged screen	Y	Y				
MW-5B	709.1	691.73	25	Groundwater Level (ft)	1.71	1.13	-	704.07	708.36	0.12
				Groundwater Elevation (ft amsl)	707.39	707.97				
				Measured Well Depth (ft)	24.88	24.98				
				Submerged screen	Y	Y				
MW-6A	708.92	691.49	25	Groundwater Level (ft)	2.46	1.97	-	704.47	706.95	-0.08
				Groundwater Elevation (ft amsl)	706.46	706.95				
				Measured Well Depth (ft)	25.19	25.08				
				Submerged screen	Y	Y				
MW-8	747.36	711.33	43.04	Groundwater Level (ft)	15.54	15.17		728.06	737.74	0.01
				Groundwater Elevation (ft amsl)	731.82	732.19				
				Measured Well Depth (ft)	43.16	43.03				
				Submerged screen	Y	Y				
MW-9	747.12	695.66	58.74	Groundwater Level (ft)	22.1	27.94	-0.826	721.96	729.75	-
				Groundwater Elevation (ft amsl)	725.02	719.18				
				Measured Well Depth (ft)	-	-				
				Submerged screen	-	-				
MW-10	718.51	706.33	19.99	Groundwater Level (ft)	3.7	3.91	0.0573	710.89	715.1	0.19
				Groundwater Elevation (ft amsl)	714.81	714.6				
				Measured Well Depth (ft)	19.93	19.8				
				Submerged screen	Y	Y				
MW-11	718.34	670.03	55.97	Groundwater Level (ft)	2.89	1.68	-	712.92	718.34	-
				Groundwater Elevation (ft amsl)	715.45	716.66				
				Measured Well Depth (ft)	-	-				
				Submerged screen	Y	Y				
MW-12	717.75	633.98	86.42	Groundwater Level (ft)	2.27	1.5	-0.012	713.13	717.75	-
				Groundwater Elevation (ft amsl)	715.48	716.25				
				Measured Well Depth (ft)	-	-				
				Submerged screen	Y	Y				
MW-14A	729	716.19	20	Groundwater Level (ft)	12.31	10.54	-	712.59	719.55	-0.48
				Groundwater Elevation (ft amsl)	716.69	718.46				
				Measured Well Depth (ft)	20.65	20.48				
				Submerged screen	Y	Y				
MW-15A	729.99	717.12	20	Groundwater Level (ft)	10.98	9.17	-	713.83	721.17	-0.53
				Groundwater Elevation (ft amsl)	719.01	720.82				
				Measured Well Depth (ft)	20.53	20.55				
				Submerged screen	Y	Y				
MW-21	725.75	710.9	21.91	Groundwater Level (ft)	10.8	8.62	-	713.16	721.01	-0.24
				Groundwater Elevation (ft amsl)	714.95	717.13				
				Measured Well Depth (ft)	22.15	22.16				
				Submerged screen	Y	Y				
MW-22	744.27	707.77	43.23	Groundwater Level (ft)	17.68	15.61	-	726.59	731.18	0.06
				Groundwater Elevation (ft amsl)	726.59	728.66				
				Measured Well Depth (ft)	43.28	43.17				
				Submerged screen	Y	Y				
MW-23	726.9	714.44	19.29	Groundwater Level (ft)	5.57	5.9	-	719.37	723.02	0.21
				Groundwater Elevation (ft amsl)	721.33	721				
				Measured Well Depth (ft)	19.19	19.08				
				Submerged screen	Y	Y				
MW-24	735.32	719.51	22.59	Groundwater Level (ft)	14.25	14.17	-	717.54	725.83	-0.02
				Groundwater Elevation (ft amsl)	721.07	721.15				
				Measured Well Depth (ft)	22.65	22.61				
				Submerged screen	Y	Y				
MW-26	731.08	699.53	37.82	Groundwater Level (ft)	20.32	18.44	-	710.35	712.91	-0.15
				Groundwater Elevation (ft amsl)	710.76	712.64				
				Measured Well Depth (ft)	37.93	37.97				
				Submerged screen	Y	Y				
MW-27	730.26	716.96	19.3	Groundwater Level (ft)	13.98	12.81	-	714.47	718.43	-0.03
				Groundwater Elevation (ft amsl)	716.28	717.45				
				Measured Well Depth (ft)	19.42	19.33				
				Submerged screen	N	N				

(1) Negative value is a discharge gradient; positive values is a recharge gradient. Well clusters are MW-8/MW-9, MW-10/MW-11, and MW-11/MW-12

Note: Well depth and measured well depth reported from ground surface
ft amsl - feet above mean sea level

Background Summary
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
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Constituent	Units	Background Level/Control Limit	Action Level	Source
Interwell Background/Control Limit (MW-8, MW-10, MW-22, and MW-23)				
Aluminum	mg/L	2.76	0.05 - 0.2	SDWR
Arsenic	mg/L	0.00784*	0.01	MCL
Barium	mg/L	0.271	2	MCL
Beryllium	mg/L	0.001*	0.004	SWS
Boron	mg/L	0.322	6	HAL
Calcium	mg/L	132	-	-
Chloride	mg/L	30	250	SDWR
Cobalt	mg/L	0.00558	0.006	40CFR§257.95(h)(2)
Copper	mg/L	0.005	1.3	MCL
Fluoride	mg/L	1	4	MCL
Iron	mg/L	4.38	0.3	SDWR
Lead	mg/L	0.00204	0.015	MCL
Lithium	mg/L	0.01*	0.04	40CFR§257.95(h)(2)
Magnesium	mg/L	45.4	-	-
Manganese	mg/L	1.137	0.05 / 0.3	SDWR / HAL
Molybdenum	mg/L	0.00822	0.1	40CFR§257.95(h)(2)
Selenium	mg/L	0.005	0.05	MCL
Strontium	mg/L	0.3166	4	HAL
Sulfate	mg/L	366	250	SDWR
Zinc	mg/L	0.02*	5 / 2	SDWR / HAL

Background Summary
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
Permit No. 70-SDP-06-82P

Constituent	Units	Background Level/Control Limit	Action Level	Source
Surface Water Interwell Background/Control Limit (SW-22)				
Aluminum	mg/L	1.28	0.05 - 0.2	SDWR
Arsenic	mg/L	0.00367	0.01	MCL
Barium	mg/L	0.216	2	MCL
Beryllium	mg/L	0.001*	0.004	SWS
Boron	mg/L	6.67	6	HAL
Calcium	mg/L	221	-	-
Chloride	mg/L	23.24	250	SDWR
Cobalt	mg/L	0.00116	0.006	40CFR§257.95(h)(2)
Copper	mg/L	0.005	1.3	MCL
Fluoride	mg/L	1	4	MCL
Iron	mg/L	1.888	0.3	SDWR
Lead	mg/L	0.00258	0.015	MCL
Lithium	mg/L	Not Calculated	0.04	40CFR§257.95(h)(2)
Magnesium	mg/L	73.3	-	-
Manganese	mg/L	0.912	0.05 / 0.3	SDWR / HAL
Molybdenum	mg/L	0.00637	0.1	40CFR§257.95(h)(2)
Selenium	mg/L	0.005*	0.05	MCL
Strontium	mg/L	0.285	4	HAL
Zinc	mg/L	0.0312	5 / 2	SDWR / HAL

* 100% non detects during background sampling, control limit not calculated
Background level developed as specified in Groundwater Stats Consulting report dated 11/14/2024
mg/L - milligram per liter
MCL - Maximium contaminant level
HAL - Health Advisory Level
SDWR - Secondary Drinking Water Regulation
SWS - Statewide Standard for Protected Groundwater

Summary of Well/Detected Constituent Pairs With No Immediately Preceding Control Limit Exceedances
2024 Annual Water Quality Report
Muscatine Power & Water - CCR
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Table 6 information can be observed through Tables 7, 8, and 9. The vast majority of well-constituent pairs did not have an immediately preceeding control limit exceedance.

Summary of Ongoing and Newly Identified Control Limit Exceedances
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
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Well	Constituent	Units	2025 Results		Control Limit Fall 2025	Action Level/ Standard*
			April	September		
MW-5B	Chloride	mg/l	32.1	42	30	250
MW-14A	Boron	mg/l	15.4	16.1	0.322	6
	Calcium	mg/l	286	277	132	-
	Magnesium	mg/l	134	124	45.4	-
	Sulfate	mg/l	808	953	366	250
MW-15A	Boron	mg/l	8.16	5.51	0.322	6
	Magnesium	mg/l	53.2	34.2	45.4	-
	Molybdenum	mg/l	0.0109	ND	0.00822	0.1
MW-21	Boron	mg/l	2.64	1.65	0.322	6
	Nickel	mg/l	ND	0.0206	0.00628	-
	Selenium	mg/l	0.00832	ND	0.005	**0.05**
MW-26	Boron	mg/l	3.4	4.81	0.322	6
	Magnesium	mg/l	43.3	44.8	45.4	-
MW-27	Boron	mg/l	0.244	2.46	0.322	6
	Vanadium	mg/l	0.00613	ND	0.00547	-
SW-24	Boron	mg/l	7.82	8.09	6.67	6
	Calcium	mg/l	183	227	221	-
	Magnesium	mg/l	78.7	95.8	73.3	-
	Strontium	mg/l	0.271	0.368	0.285	4
	Sulfate	mg/l	129	594	554	250
SW-25	Strontium	mg/l	0.206	-	0.285	4
	Molybdenum	mg/l	ND	0.0072	0.00637	0.1
SW-26	Arsenic	mg/l	ND	0.0489	0.00367	**0.01**
	Cobalt	mg/l	0.14	ND	0.00116	0.006
	Copper	mg/l	0.00773	ND	0.005	-
	Lead	mg/l	0.00299	ND	0.00258	0.015
	Molybdenum	mg/l	0.00699	0.0427	0.00637	0.1
	Selenium	mg/l	0.0375	ND	0.005	**0.05**
	Strontium	mg/l	0.402	0.387	0.285	4

* Bold identifies Maxmimum Contaminant Levels or Federal CCR Regulation comparison values

Table 8

Analytical Data Summary
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
Permit No. 70-SDP-06-82P

Constituent (CAS #)	Sample Date	Units	MW-8 Bkgrnd	MW-10 Bkgrnd	MW-22 Bkgrnd	MW-23 Bkgrnd	MW-4B DwnGrad	MW-5B DwnGrad	MW-6A DwnGrad	MW-13 Abandoned	MW-14A DwnGrad	MW-15A DwnGrad	MW-18 Abandoned	MW-21 DwnGrad	SW-24 U-Drain	SW-25 U-Drain	SW-22 UpStrm	SW-23 DwnStrm	SW-26 DwnStrm	MW-24 Assess	MW-25 Abandoned	MW-26 Delin	MW-27 Delin
Aluminum (Total) (7429-90-5)	10-10-16	mg/l	<0.05	**0.0826**			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05									
SDWR = 0.05 - 0.2	07-08-17	mg/l	<0.05	<0.05			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05									
	06-03-18	mg/l	<0.05	<0.05			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.0832**									
	27-08-18	mg/l	<0.05	<0.05			<0.05	<0.05	<0.05	<0.05	<0.5	<0.5	<0.5	<0.5									
	18-03-19	mg/l	<0.05	<0.05	<0.05	**0.644**	<0.05	<0.05	<0.05		<0.05	<0.05		<0.05	<0.05	<0.05	**0.153**	**0.0744**	<0.05	**0.169**	<0.2		
	06-08-19	mg/l	<0.05	<0.05	<0.05	**0.253**	<0.05	<0.05	<0.05		<0.05	<0.05		<0.05	<0.05	<0.05	**0.194**	**0.0761**	<0.05	**0.0649**	<0.05		
	10-04-20	mg/l	<0.05	<0.05	<0.05	**0.552**	<0.05	<0.05	<0.05		<0.05	<0.05		<0.05	<0.05	<0.05	**0.0821**	**0.0578**	<0.05	**0.134**			
	18-09-20	mg/l	<0.05	<0.05	<0.05	<0.05	**0.475**	<0.05	<0.05		<0.05	<0.05		<0.05	<0.05	<0.05	**1.28**	**0.44**	<0.05	<0.05		<0.05	<0.05
	06-04-21	mg/l	<0.05	<0.05	<0.05	**0.39**	<0.05	<0.05	<0.05		<0.05	<0.05		<0.05	<0.05	<0.05	**0.191**	**0.19**	**0.432**	<0.05		<0.05	<0.05
	01-09-21	mg/l	<0.05	<0.05	<0.05	**0.135**	<0.05	<0.05	<0.05		<0.05	<0.05		<0.05	<0.05	**0.858**	**0.982**	**0.65**	**0.0654**	<0.05		<0.05	**0.112**
	20-04-22	mg/l	<0.05	<0.05	<0.05	**0.478**	<0.05	<0.05	<0.05		**0.111**	<0.05		<0.05	<0.20	<0.20	<0.05	<0.05	<0.05	<0.05		<0.05	**0.270**
	14-09-22	mg/l	<0.05	<0.05	<0.05	**0.142**	<0.05	<0.05	<0.05		**0.119**	<0.05		<0.05	<0.05	<0.05			<0.05	<0.05		<0.05	**0.558**
	12-04-23	mg/l	<0.05	<0.05	<0.05	**0.233**	<0.05	<0.05	<0.05		<0.05	<0.05		<0.05	<0.05	<0.05	**0.0782**	<0.05	<0.05	<0.05		**0.0884**	**0.394**
	20-09-23	mg/l	<0.05	<0.05	<0.05	**0.105**	<0.05	<0.05	<0.05		<0.05	<0.05		<0.05						<0.05		<0.05	**0.0737**
	15-04-24	mg/l	<0.05	<0.05	<0.05	**0.243**	<0.05	<0.05	<0.05		<0.05	<0.05		<0.05	<0.05	<0.05	**0.172**	<0.05	**0.119**	<0.05		<0.05	**0.191**
	11-09-24	mg/l	<0.05	<0.05	<0.05	**0.168**	<0.05	<0.05	<0.05		<0.05	<0.05		<0.05					**0.0588**	<0.05		<0.05	**0.0529**
	14-04-25	mg/l	<0.05	<0.05	**0.139**	**2.76**	<0.05	**0.0574**	<0.05		**0.104**	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05	**1.28**	<0.05		**0.0503**	**2.75**
	10-09-25	mg/l	<0.05	<0.05	<0.05	**0.209**	<0.05	<0.05	<0.05		<0.05	<0.05		<0.05	<0.05	<0.05			<0.05	<0.05		<0.05	**0.0623**
Arsenic (Total) (7440-38-2)	10-10-16	mg/l	<0.002	**0.00328**			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002									
MCL = 0.01	07-08-17	mg/l	<0.002	**0.00317**			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002									
	06-03-18	mg/l	<0.002	<0.002			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	**0.00265**	<0.002									
	27-08-18	mg/l	<0.002	**0.0036**			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002									
	18-03-19	mg/l	<0.002	**0.0056**	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		
	06-08-19	mg/l	<0.002	**0.00784**	<0.002	<0.002	<0.002	<0.002	<0.002		<0.008	<0.002		<0.002	<0.002	<0.002	**0.00342**	**0.00378**	**0.0347**	<0.002	<0.008		
	10-04-20	mg/l	<0.002	**0.00697**	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	**0.00368**	<0.002			
	18-09-20	mg/l	<0.002	**0.00748**	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	**0.00217**	**0.00236**	**0.187**	<0.002		<0.002	<0.002
	06-04-21	mg/l	<0.002	**0.00393**	**0.00289**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	**0.0268**	<0.002		<0.002	<0.002
	01-09-21	mg/l	<0.002	**0.00781**	**0.00267**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	**0.00367**	**0.00332**	**0.0262**	<0.002		<0.002	<0.002
	20-04-22	mg/l	<0.002	**0.00371**	**0.00340**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.008	<0.008	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002
	14-09-22	mg/l	<0.002	**0.00497**	**0.00285**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002			**0.0151**	<0.002		<0.002	<0.002
	12-04-23	mg/l	**0.00247**	**0.00224**	**0.00421**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	**0.00221**	**0.00664**	<0.002		<0.002	<0.002
	20-09-23	mg/l	<0.002	**0.00501**	**0.00421**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002						<0.002		<0.002	<0.002
	15-04-24	mg/l	**0.00390**	<0.002	**0.00634**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	**0.00217**	<0.002		<0.002	<0.002
	11-09-24	mg/l	**0.00466**	**0.00525**	**0.00749**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002					**0.0371**	<0.002		<0.002	<0.002
	14-04-25	mg/l	**0.00450**	<0.002	**0.00671**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002
	10-09-25	mg/l	**0.00317**	**0.00429**	**0.00768**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002			**0.0489**	<0.002		<0.002	<0.002

Analytical Data Summary
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Muscatine Power & Water - CCR
Permit No. 70-SDP-06-82P

Constituent (CAS #)	Sample Date	Units	MW-8 Bkgrnd	MW-10 Bkgrnd	MW-22 Bkgrnd	MW-23 Bkgrnd	MW-4B DwnGrad	MW-5B DwnGrad	MW-6A DwnGrad	MW-13 Abandoned	MW-14A DwnGrad	MW-15A DwnGrad	MW-18 Abandoned	MW-21 DwnGrad	SW-24 U-Drain	SW-25 U-Drain	SW-22 UpStrm	SW-23 DwnStrm	SW-26 DwnStrm	MW-24 Assess	MW-25 Abandoned	MW-26 Delin	MW-27 Delin
Barium (Total) (7440-39-3)	10-10-16	mg/l	**0.0706**	**0.163**			**0.131**	**0.304**	**0.196**	**0.0477**	**0.0391**	**0.0426**	**0.0381**	**0.0606**									
MCL = 2	07-08-17	mg/l	**0.0596**	**0.157**			**0.133**	**0.3**	**0.190**	**0.0857**	**0.031**	**0.0338**	**0.0329**	**0.0499**									
	06-03-18	mg/l	**0.0617**	**0.129**			**0.117**	**0.341**	**0.206**	**0.132**	**0.0285**	**0.0352**	**0.0281**	**0.0148**									
	27-08-18	mg/l	**0.0649**	**0.216**			**0.149**	**0.357**	**0.206**	**0.122**	**0.0344**	**0.0335**	**0.036**	**0.0622**									
	18-03-19	mg/l	**0.0751**	**0.185**	**0.209**	**0.0922**	**0.161**	**0.326**	**0.2**		**0.0328**	**0.037**		**0.0511**	**0.0278**	**0.056**	**0.0996**	**0.079**	**0.0793**	**0.0889**	**0.0342**		
	06-08-19	mg/l	**0.0733**	**0.215**	**0.215**	**0.0635**	**0.147**	**0.301**	**0.211**		**0.0398**	**0.047**		**0.0624**	**0.0272**	**0.0648**	**0.168**	**0.171**	**0.048**	**0.128**	**0.0448**		
	10-04-20	mg/l	**0.0613**	**0.199**	**0.222**	**0.0654**	**0.156**	**0.25**	**0.216**		**0.0266**	**0.0389**		**0.0352**	**0.0254**	**0.0548**	**0.0967**	**0.0806**	**0.078**	**0.084**			
	18-09-20	mg/l	**0.0549**	**0.227**	**0.222**	**0.0491**	**0.147**	**0.239**	**0.231**		**0.0328**	**0.0416**		**0.0407**	**0.0257**	**0.0648**	**0.168**	**0.113**	**0.0772**	**0.0969**		**0.114**	**0.0738**
	06-04-21	mg/l	**0.0596**	**0.196**	**0.242**	**0.0608**	**0.169**	**0.252**	**0.245**		**0.0355**	**0.0365**		**0.0309**	**0.0285**	**0.0594**	**0.112**	**0.103**	**0.102**	**0.0936**		**0.0989**	**0.0534**
	01-09-21	mg/l	**0.0623**	**0.233**	**0.247**	**0.0497**	**0.186**	**0.241**	**0.248**		**0.0345**	**0.0355**		**0.0434**	**0.0259**	**0.0941**	**0.181**	**0.109**	**0.0455**	**0.0922**		**0.0889**	**0.0862**
	20-04-22	mg/l	**0.0631**	**0.208**	**0.239**	**0.0572**	**0.191**	**0.258**	**0.249**		**0.0327**	**0.0443**		**0.036**	**0.0222**	**0.0407**	**0.1**	**0.0689**	**0.0503**	**0.0826**		**0.0802**	**0.0498**
	14-09-22	mg/l	**0.0703**	**0.223**	**0.243**	**0.0507**	**0.188**	**0.253**	**0.229**		**0.0340**	**0.0327**		**0.0447**	**0.0288**	**0.0580**			**0.0656**	**0.0887**		**0.0876**	**0.0594**
	12-04-23	mg/l	**0.0700**	**0.190**	**0.227**	**0.0518**	**0.173**	**0.237**	**0.246**		**0.0320**	**0.0299**		**0.0310**	**0.0253**	**0.0510**	**0.101**	**0.0922**	**0.0536**	**0.0863**		**0.0815**	**0.0508**
	20-09-23	mg/l	**0.078**	**0.233**	**0.256**	**0.053**	**0.181**	**0.274**	**0.222**		**0.035**	**0.034**		**0.056**						**0.070**		**0.076**	**0.053**
	15-04-24	mg/l	**0.0857**	**0.193**	**0.271**		**0.168**	**0.243**	**0.235**		**0.0323**	**0.0353**		**0.031**	**0.0262**	**0.0461**	**0.0964**	**0.075**	**0.0701**	**0.0899**		**0.0716**	**0.0511**
	11-09-24	mg/l	**0.0944**	**0.219**	**0.268**	**0.0521**	**0.184**	**0.258**	**0.249**		**0.0338**	**0.0335**		**0.0555**					**0.0808**	**0.0885**		**0.0643**	**0.0795**
	14-04-25	mg/l	**0.0867**	**0.190**	**0.247**	**0.067**	**0.157**	**0.256**	**0.231**		**0.0294**	**0.03**		**0.046**	**0.0213**	**0.0503**	**0.0741**	**0.0586**	**0.0737**	**0.0973**		**0.0617**	**0.0607**
	10-09-25	mg/l	**0.0852**	**0.172**	**0.262**	**0.0468**	**0.175**	**0.252**	**0.213**		**0.0331**	**0.0302**		**0.0412**	**0.0244**	**0.0579**			**0.0865**	**0.101**		**0.0589**	**0.0804**

Table 8

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2025 Annual Water Quality Report
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Permit No. 70-SDP-06-82P

Constituent (CAS #)	Sample Date	Units	MW-8 Bkgrnd	MW-10 Bkgrnd	MW-22 Bkgrnd	MW-23 Bkgrnd	MW-4B DwnGrad	MW-5B DwnGrad	MW-6A DwnGrad	MW-13 Abandoned	MW-14A DwnGrad	MW-15A DwnGrad	MW-18 Abandoned	MW-21 DwnGrad	SW-24 U-Drain	SW-25 U-Drain	SW-22 UpStrm	SW-23 DwnStrm	SW-26 DwnStrm	MW-24 Assess	MW-25 Abandoned	MW-26 Delin	MW-27 Delin
Beryllium (Total) (7440-41-7)	10-10-16	mg/l	<0.001	<0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001									
MCL = 0.004	07-08-17	mg/l	<0.001	<0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001									
	06-03-18	mg/l	<0.001	<0.001			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001									
	27-08-18	mg/l	<0.001	<0.001			<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001									
	18-03-19	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004		
	06-08-19	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.004	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004		
	10-04-20	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
	18-09-20	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001
	06-04-21	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001
	01-09-21	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001
	20-04-22	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001	<0.004	<0.004	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001
	14-09-22	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001	<0.001	<0.001			<0.001	<0.001		<0.001	<0.001
	12-04-23	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001
	20-09-23	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001						<0.001		<0.001	<0.001
	15-04-24	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001
	11-09-24	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001					<0.001	<0.001		<0.001	<0.001
	14-04-25	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001
	10-09-25	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001		<0.001	<0.001	<0.001			<0.001	<0.001		<0.001	<0.001
Boron (Total) (7440-42-8)	10-10-16	mg/l	<0.2	<0.2			<0.2	<0.2	<0.2	**74.8**	**19.3**	**17.9**	**14.3**	**8.45**									
HAL = 6	07-08-17	mg/l	<0.2	<0.2			<0.2	<0.2	<0.2	**2.72**	**13**	**14.7**	**10.8**	**7.05**									
	06-03-18	mg/l	<0.2	<0.2			**0.66**	<0.2	<0.2	**21.7**	**11**	**9.8**	**8.81**	**0.885**									
	27-08-18	mg/l	<0.2	<0.2			<0.2	<0.2	<0.2	**1.45**	**14**	**14.6**	**10.5**	**1.36**									
	18-03-19	mg/l	<0.2	<0.2	**0.299**	<0.2	<0.2	<0.2	<0.2		**15.5**	**8.35**		**6.95**	**9.36**	**2.9**	<0.2	**0.693**	**0.486**	<0.2	**14.5**		
	06-08-19	mg/l	**0.205**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		**17.6**	**7.56**		**8.46**	**10.4**	**8.03**	<0.2	**2.66**	**1**	<0.2	**11.5**		
	10-04-20	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		**17.4**	**10.6**		**6.76**	**8.58**	**3.8**	<0.2	**0.898**	**0.745**	<0.2			
	18-09-20	mg/l	<0.1	<0.1	**0.263**	**0.15**	<0.1	<0.1	<0.1		**19.5**	**14.5**		**6.82**	**9.39**	**6.36**	**0.206**	**2.72**	**11.3**	**0.109**		**2.5**	**3.25**
	06-04-21	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		**17.2**	**10.3**		**5.24**	**6.55**	**2.11**	<0.1	**0.32**	**1.52**	<0.1		**2.33**	**0.17**
	01-09-21	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		**17.1**	**11.1**		**5.88**	**8.55**	**0.528**	<0.1	**0.704**	**0.941**	<0.1		**2.49**	**3.82**
	20-04-22	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		**15.2**	**6.98**		**3.57**	**8.12**	**5**	<0.1	**1.43**	**0.855**	<0.1		**2.07**	**0.549**
	14-09-22	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		**15.1**	**10.4**		**3.69**	**9.05**	**5.86**	<0.1		**0.892**	**0.134**		**1.97**	**1.41**
	12-04-23	mg/l	<0.1	<0.1	**0.247**	**0.145**	<0.1	<0.1	<0.1		**14.8**	**5.80**		**3.35**	**7.97**	**4.20**	<0.1	**2.17**	**1.54**	**0.114**		**2.26**	**0.741**
	20-09-23	mg/l	<0.1	<0.1	**0.207**	**0.128**	<0.1	<0.1	<0.1		**18.1**	**9.28**		**4.42**						<0.1		**3.08**	**1.0**
	15-04-24	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		**15.2**	**5.8**		**2.31**	**7.91**	**3.76**	<0.1	**0.485**	**0.484**	<0.1		**3.07**	**1.01**
	11-09-24	mg/l	<0.1	<0.1	**0.243**	**0.126**	<0.1	<0.1	<0.1		**17.7**	**8.5**		**3.68**					**1.38**	<0.1		**4.19**	**3.02**
	14-04-25	mg/l	<0.1	<0.1	<0.1	<0.1	**0.169**	<0.1	<0.1		**15.4**	**8.16**		**2.64**	**7.82**	**3.57**	<0.1	**0.755**	**0.14**	<0.1		**3.4**	**0.244**
	10-09-25	mg/l	<0.1	<0.1	**0.187**	**0.123**	<0.1	<0.1	<0.1		**16.1**	**5.51**		**1.65**	**8.09**	**5.25**			**5.19**	**0.126**		**4.81**	**2.46**

Table 8

Analytical Data Summary
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
Permit No. 70-SDP-06-82P

Constituent (CAS #)	Sample Date	Units	MW-8 Bkgrnd	MW-10 Bkgrnd	MW-22 Bkgrnd	MW-23 Bkgrnd	MW-4B DwnGrad	MW-5B DwnGrad	MW-6A DwnGrad	MW-13 Abandoned	MW-14A DwnGrad	MW-15A DwnGrad	MW-18 Abandoned	MW-21 DwnGrad	SW-24 U-Drain	SW-25 U-Drain	SW-22 UpStrm	SW-23 DwnStrm	SW-26 DwnStrm	MW-24 Assess	MW-25 Abandoned	MW-26 Delin	MW-27 Delin
Calcium (Total) (7440-70-2)	10-10-16	mg/l	118	83.3			89.3	140	75.7	276	308	203	280	185									
MCL = NA	07-08-17	mg/l	91.3	85.5			89.7	139	71.2	95.4	296	206	258	163									
	06-03-18	mg/l	74.7	77.3			95.8	134	74.1	149	278	229	191	25.1									
	27-08-18	mg/l	83.6	85.4			91.3	146	73.3	93.1	309	155	223	78.7									
	18-03-19	mg/l	97.6	76.3	91.6	59.7	99.7	134	73.2		290	118		142	263	147	51.8	60.1	52.4	75	157		
	06-08-19	mg/l	132	78.9	83.8	59.5	93.8	139	80.9		255	111		145	240	223	47.4	115	43.6	103	160		
	10-04-20	mg/l	92.4	75.4	80.9	61	89.6	117	85.1		245	163		104	242	168	59.6	68.6	65.5	94.3			
	18-09-20	mg/l	77.7	74.2	75.5	52.1	89	108	87.9		244	134		101	238	203	55.1	114	123	69.6		134	61
	06-04-21	mg/l	81.2	78.8	78.4	56.3	94.1	104	87.6		259	128		79.5	221	125	42.4	48.7	44.5	74.6		130	57.6
	01-09-21	mg/l	78.3	80	79.4	56.1	95.1	108	90.6		270	125		93.5	229	80.5	58.1	77.3	48.3	69		134	68.4
	20-04-22	mg/l	69.6	90.4	80.2	54	106	117	96.5		289	127		97.5	201	154	58.6	71.7	57.4	62.8		121	29.6
	14-09-22	mg/l	76.8	82	79.6	54.5	92.3	117	89		301	132		88.2	232	182			59.4	66.8		133	38.7
	12-04-23	mg/l	78.2	83.7	80.4	55.3	91.3	107	95.4		318	110		76.0	213	149	57.6	87.6	70.0	78.6		141	26.8
	20-09-23	mg/l	79.4	84.7	79	56	90.4	115	82.1		291	126		96.0						70.5		127	33.4
	15-04-24	mg/l	84.2	96.2	83.1	59.7	97.7	112	92.4		344	118		59.9	231	142	50.5	60	56.1	71.6		134	35.4
	11-09-24	mg/l	88.6	97.8	84.3	58	102	123	99.4		327	129		96.6					57.3	73.6		126	63.1
	14-04-25	mg/l	84.1	99.6	74.5	56	86.8	106	85.2		286	125		87.4	183	143	51.5	63.1	66.2	71.6		114	26.4
	10-09-25	mg/l	79.6	82.6	74.6	44.9	94.9	114	79		277	77.2		52.8	227	159			69.3	72.9		114	55.5

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Permit No. 70-SDP-06-82P

Constituent (CAS #)	Sample Date	Units	MW-8 Bkgrnd	MW-10 Bkgrnd	MW-22 Bkgrnd	MW-23 Bkgrnd	MW-4B DwnGrad	MW-5B DwnGrad	MW-6A DwnGrad	MW-13 Abandoned	MW-14A DwnGrad	MW-15A DwnGrad	MW-18 Abandoned	MW-21 DwnGrad	SW-24 U-Drain	SW-25 U-Drain	SW-22 UpStrm	SW-23 DwnStrm	SW-26 DwnStrm	MW-24 Assess	MW-25 Abandoned	MW-26 Delin	MW-27 Delin
Chloride (16887-00-6)	10-10-16	mg/l	**16.2**	<5			**13.6**	**66**	<5	**29.8**	**37**	**17.6**	**35.3**	**24.4**									
SDWR = 250	07-08-17	mg/l	**14**	<5			**13.2**	**64**	<5	**9.62**	**32.9**	**15.4**	**27**	**16.1**									
	06-03-18	mg/l	**14.5**	<5			**8.81**	**68.2**	**5.33**	**19.9**	**37.4**	**24.2**	**27.1**	<5									
	27-08-18	mg/l	**15.6**	<5			**19.4**	**70.8**	<5	**7.24**	**33.1**	**10.1**	**26.9**	<5									
	18-03-19	mg/l	**16.1**	<5	**27.6**	**10.5**	**16**	**55**	<5		**25.8**	**8.54**		**8.3**	**13.3**	**12.4**	**12.9**	**12.4**	**11**	**17.3**	**11.4**		
	06-08-19	mg/l	**17.1**	<5	**26.9**	**13.8**	**15.6**	**64.1**	<5		**22.1**	**9.91**		**14**	**15.1**	**15**	**12.3**	**17**	**16.7**	**22.4**	**11.6**		
	10-04-20	mg/l	**17.2**	<5	**24.8**	**15.7**	**14.8**	**44**	**12.2**		**22.5**	**13**		**8.05**	**17.1**	**17.1**	**14.5**	**15.6**	**15.8**	**24.8**			
	18-09-20	mg/l	**14.7**	<5	**23.2**	**14.4**	**15.1**	**41**	**15.6**		**22.8**	**8.63**		**7.21**	**16.4**	**17.2**	**13.3**	**16.4**	**16.9**	**19.5**		**19.7**	**13.6**
	06-04-21	mg/l	**22.3**	<5	**28.1**	**21.4**	**22.9**	**42.7**	**19.3**		**27.1**	**15**		**5.14**	**16**	**12.6**	**14.9**	**14.7**	**12.6**	**28.9**		**21.1**	**10.4**
	01-09-21	mg/l	**16.3**	<5	**20**	**15.2**	**16.7**	**37.6**	**17.4**		**23.2**	**8.86**		**6.58**	**17.4**	**20.7**	**13.7**	**16.8**	**14**	**21.9**		**19.3**	**15**
	20-04-22	mg/l	**15.8**	<5	**20.2**	**16.9**	**20.8**	**38.1**	**14.2**		**25.5**	**7.71**		**7.19**	**16.9**	**20.1**	**16.3**	**17.7**	**16**	**19.9**		**19.9**	**19.1**
	14-09-22	mg/l	**16.7**	<5	**7.04**	**16.2**	**16.8**	**39**	**13.3**		**22.4**	**8.29**		**18**	**17**	**16.5**			**9.4**	**19.9**		**18.4**	**19**
	12-04-23	mg/l	**17.9**	**5.86**	**18.2**	**17.7**	**18**	**38.7**	**15.4**		**20.3**	**7.3**		**5.93**	**16.1**	**17.7**	**18.0**	**19.1**	**20.2**	**23.4**		**3.83**	**2.45**
	20-09-23	mg/l	**19.9**	<5.00	**18.4**	**19.2**	**17.4**	**41.8**	**12.2**		**20.9**	**8.41**		**8.23**						**22.8**		**18.8**	**28.9**
	15-04-24	mg/l	**17.2**	<5.00	**15.8**	**19.2**	**18.1**	**39.3**	**15.5**		**16.4**	**7.01**		<5.00	**14.9**	**19.3**	**21.3**	**22.2**	**20.6**	**19.5**		**17.4**	**19.5**
	11-09-24	mg/l	**20.1**	**9.65**	**16.6**	**21.7**	**14.6**	**40.5**	**14.4**		**16.3**	**7.41**		**13.5**					**18.5**	**22.8**		**17.3**	**27.2**
	14-04-25	mg/l	**18.6**	**12.8**	**16.1**	**25.1**	**18.9**	**32.1**	**15.8**		**18**	**7.79**		**10.9**	**14.7**	**17.0**	**19.8**	**20.4**	**22.7**	**23.6**		**17.2**	**23**
	10-09-25	mg/l	**20.8**	**8.5**	**14.5**	**25.2**	**18.9**	**42**	**16.8**		**15.4**	**4.5**		**5.1**	**16.3**	**21**			**24.8**	**26.5**		**17.1**	**24.4**
Cobalt (Total) (7440-48-4)	10-10-16	mg/l	<0.0005	**0.000520**			<0.0005	<0.0005	<0.0005	**0.00179**	<0.0005	<0.0005	<0.0005	<0.0005									
40CFR§257.95(h)(2) = 0.006	07-08-17	mg/l	**0.00051**	**0.0007**			<0.0005	<0.0005	<0.0005	**0.000686**	<0.0005	<0.0005	<0.0005	<0.0005									
	06-03-18	mg/l	<0.0005	**0.00063**			<0.0005	<0.0005	<0.0005	**0.000964**	<0.0005	<0.0005	<0.0005	<0.0005									
	27-08-18	mg/l	<0.0005	**0.00088**			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005									
	18-03-19	mg/l	**0.00177**	**0.00078**	<0.0005	**0.00176**	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002		
	06-08-19	mg/l	**0.00558**	**0.000572**	<0.0005	< 0.0005	<0.0005	<0.0005	<0.0005		<0.002	<0.0005		<0.0005	<0.002	<0.002	**0.000833**	<0.0005	**0.00061**	<0.0005	<0.002		
	10-04-20	mg/l	**0.000517**	**0.000581**	<0.0005	**0.000817**	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005			
	18-09-20	mg/l	**0.000738**	**0.000751**	<0.0005	< 0.0005	**0.00147**	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	**0.00116**	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
	06-04-21	mg/l	**0.000839**	**0.000752**	<0.0005	0.000517	**0.00132**	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.00134**	<0.0005		<0.0005	<0.0005
	01-09-21	mg/l	**0.001270**	**0.000576**	<0.0005	<0.0005	**0.00335**	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	**0.00105**	**0.00053**	<0.0005	<0.0005		<0.0005	<0.0005
	20-04-22	mg/l	**0.001430**	**0.001040**	<0.0005	**0.000561**	**0.00135**	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.002	<0.002	**0.00071**	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
	14-09-22	mg/l	**0.00164**	**0.00109**	<0.0005	<0.0005	**0.00459**	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005			<0.0005	<0.0005		<0.0005	<0.0005
	12-04-23	mg/l	**0.001400**	**0.001420**	<0.0005	<0.0005	**0.00271**	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
	20-09-23	mg/l	**0.001260**	**0.000995**	<0.0005	<0.0005	**0.00374**	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005						<0.0005		<0.0005	<0.0005
	15-04-24	mg/l	**0.0018**	**0.00122**	<0.0005	<0.0005	**0.00172**	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
	11-09-24	mg/l	**0.002160**	**0.000977**	<0.0005	**<0.0005**	**0.0028**	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005					<0.0005	<0.0005		<0.0005	<0.0005
	14-04-25	mg/l	**0.00163**	**0.00154**	<0.0005	**0.000879**	**0.00119**	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.140**	<0.0005		<0.0005	**0.000855**
	10-09-25	mg/l	**0.00142**	**0.0009**	<0.0005	<0.0005	**0.00247**	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005			<0.0005	<0.0005		<0.0005	<0.0005

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Constituent (CAS #)	Sample Date	Units	MW-8 Bkgrnd	MW-10 Bkgrnd	MW-22 Bkgrnd	MW-23 Bkgrnd	MW-4B DwnGrad	MW-5B DwnGrad	MW-6A DwnGrad	MW-13 Abandoned	MW-14A DwnGrad	MW-15A DwnGrad	MW-18 Abandoned	MW-21 DwnGrad	SW-24 U-Drain	SW-25 U-Drain	SW-22 UpStrm	SW-23 DwnStrm	SW-26 DwnStrm	MW-24 Assess	MW-25 Abandoned	MW-26 Delin	MW-27 Delin
Copper (Total) (7440-50-8)	10-10-16	mg/l	<0.005	<0.005			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005									
MCL = 1.3	07-08-17	mg/l	<0.005	<0.005			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005									
	06-03-18	mg/l	<0.005	<0.005			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005									
	27-08-18	mg/l	<0.005	<0.005			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005									
	18-03-19	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.02		
	06-08-19	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.02	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.02		
	10-04-20	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
	18-09-20	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	**0.0719**	<0.05	<0.005		<0.005	<0.005
	06-04-21	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005
	01-09-21	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005	**0.0358**	<0.005	<0.005	<0.005		<0.005	<0.005
	20-04-22	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005
	14-09-22	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005			<0.005	<0.005		<0.005	<0.005
	12-04-23	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		**0.00512**	<0.005
	20-09-23	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005						<0.005		<0.005	<0.005
	15-04-24	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005
	11-09-24	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005					<0.005	<0.005		<0.005	<0.005
	14-04-25	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	**0.00773**	<0.005		<0.005	<0.005
	10-09-25	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005			<0.005	<0.005		<0.005	<0.005

Table 8

Analytical Data Summary
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
Permit No. 70-SDP-06-82P

Constituent (CAS #)	Sample Date	Units	MW-8 Bkgrnd	MW-10 Bkgrnd	MW-22 Bkgrnd	MW-23 Bkgrnd	MW-4B DwnGrad	MW-5B DwnGrad	MW-6A DwnGrad	MW-13 Abandoned	MW-14A DwnGrad	MW-15A DwnGrad	MW-18 Abandoned	MW-21 DwnGrad	SW-24 U-Drain	SW-25 U-Drain	SW-22 UpStrm	SW-23 DwnStrm	SW-26 DwnStrm	MW-24 Assess	MW-25 Abandoned	MW-26 Delin	MW-27 Delin
Fluoride (16984-48-8)	10-10-16	mg/l	<0.5	<0.5			<0.5	<0.5	<0.5	**3.25**	**0.867**	<0.5	**0.791**	<0.5									
MCL = 4	07-08-17	mg/l	<0.05	<0.5			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5									
	06-03-18	mg/l	<0.05	<0.5			<0.5	<0.5	<0.5	**2.08**	<0.5	<0.5	<0.5	<0.5									
	27-08-18	mg/l	<0.05	<0.5			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5									
	18-03-19	mg/l	<0.05	<0.5	<0.5	<0.5	**0.771**	<0.5	<0.5		<0.5	**0.523**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
	06-08-19	mg/l	**0.643**	**0.596**	**0.507**	<0.5	**0.525**	<0.5	**0.535**		<0.5	**0.625**		<0.5	<0.5	<0.5	<0.5	<0.5	**0.512**	<0.5	<0.5		
	10-04-20	mg/l	**0.864**	<0.5	<0.5	<0.5	<0.5	<0.5	**0.652**		<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	**0.597**	<0.5	<0.5			
	18-09-20	mg/l	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
	06-04-21	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	**0.5**		<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	<0.5		<0.5	<0.5
	01-09-21	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
	20-04-22	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
	14-09-22	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5		<0.5	<0.5	<0.5			<0.5	<0.5		<0.5	<0.5
	12-04-23	mg/l	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	<1.00		<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.00		<0.200	<0.200
	20-09-23	mg/l	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	<1.00		<1.00						<1.00		<1.00	<1.00
	15-04-24	mg/l	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	<1.00
	11-09-24	mg/l	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00		<1.00	<1.00		<1.00					<1.00	<1.00		<1.00	<1.00
	14-04-25	mg/l	**0.312**	**0.281**	**0.268**	**0.236**	**0.268**	**0.193**	**0.303**		**0.262**	**0.257**		**0.154**	**0.200**	**0.244**	**0.271**	**0.272**	**0.256**	**0.220**		**0.181**	<0.1
	10-09-25	mg/l	**0.311**	**0.218**	**0.289**	**0.281**	**0.274**	**0.173**	**0.273**		**0.261**	**0.293**		**0.174**	**0.187**	**0.231**			**0.357**	**0.222**		**0.187**	**0.173**
Iron (Total) (7439-89-6)	10-10-16	mg/l	<0.1	**1.8**			**1.5**	**2.49**	**3.12**	<0.1	<0.1	<0.1	<0.1	<0.1									
SDWR = 0.3	07-08-17	mg/l	<0.1	**1.58**			**1.68**	**2.51**	**3.09**	**0.408**	<0.1	<0.1	<0.1	<0.1									
	06-03-18	mg/l	<0.1	**0.177**			**0.267**	**2.43**	**3.05**	**0.263**	<0.1	<0.1	<0.1	<0.1									
	27-08-18	mg/l	<0.1	**1.75**			**1.63**	**2.6**	**3.13**	**0.86**	<0.1	**0.102**	**0.144**	<0.1									
	18-03-19	mg/l	<0.1	**2.75**	<0.1	**0.674**	**1.97**	**3.08**	**3.07**		<0.1	<0.1		<0.1	**0.705**	**0.104**	**0.66**	**0.176**	**0.345**	**0.115**	<0.4		
	06-08-19	mg/l	<0.1	**3.33**	<0.1	**0.231**	**1.61**	**2.6**	**3.39**		<0.4	<0.4		<0.1	**0.137**	<0.1	**0.408**	**0.332**	**0.227**	<0.1	<0.4		
	10-04-20	mg/l	<0.1	**3.36**	<0.1	**0.485**	**5.55**	**1.88**	**3.47**		<0.1	<0.1		<0.1	<0.1	<0.1	**0.363**	**0.275**	**0.439**	<0.1			
	18-09-20	mg/l	<0.1	**4.38**	<0.1	<0.1	**0.895**	**1.86**	**3.45**		<0.1	<0.1		<0.1	<0.1	<0.1	**1.25**	**0.827**	<1.00	<0.1		<0.1	<0.1
	06-04-21	mg/l	**0.2**	**2.08**	<0.1	**0.3**	<0.1	**1.85**	**3.57**		<0.1	<0.1		<0.1	<0.1	<0.1	**0.21**	**0.228**	**0.439**	<0.1		<0.1	<0.1
	01-09-21	mg/l	**0.1**	**4.37**	<0.1	**0.1**	<0.1	**2.21**	**3.83**		<0.1	<0.1		<0.1	<0.1	**1.2**	**1.34**	**0.967**	**0.169**	<0.1		<0.1	**0.11**
	20-04-22	mg/l	**0.565**	**2.49**	<0.1	**0.492**	<0.1	**1.99**	**3.61**		**0.165**	<0.1		<0.1	<0.4	<0.4	**0.123**	<0.1	**0.157**	<0.1		<0.1	**0.281**
	14-09-22	mg/l	**0.609**	**2.70**	<0.1	**0.117**	**0.250**	**2.03**	**3.43**		<0.1	<0.1		<0.1	<0.1	<0.1			**0.116**	<0.1		<0.1	**0.594**
	12-04-23	mg/l	**0.708**	**1.09**	<0.1	**0.210**	**0.423**	**1.83**	**3.43**		<0.1	<0.1		<0.1	<0.1	<0.1	**0.240**	**0.117**	**0.286**	<0.1		**0.456**	**0.338**
	20-09-23	mg/l	**0.451**	**2.45**	<0.1	<0.1	**0.559**	**2.18**	**3.09**		<0.1	<0.1		<0.1						<0.1		<0.1	<0.1
	15-04-24	mg/l	**1.29**	**0.982**	<0.1	**0.239**	**0.309**	**1.78**	**3.42**		<0.1	<0.1		<0.1	<0.1	<0.1	**0.196**	<0.1	**0.178**	<0.1		<0.1	**0.181**
	11-09-24	mg/l	**1.530**	**2.86**	**0.189**	**0.160**	**0.797**	**2.06**	**3.6**		<0.1	<0.1		<0.1					**0.2**	<0.1		<0.1	<0.1
	14-04-25	mg/l	**1.44**	**1.4**	**0.215**	**2.53**	**0.31**	**2.25**	**3.2**		**0.163**	<0.1		<0.1	<0.1	<0.1	**0.181**	**0.183**	**1.61**	<0.1		<0.1	**2.37**
	10-09-25	mg/l	**1.13**	**2.58**	**0.196**	**0.192**	**0.931**	**2.07**	**3.11**		<0.1	<0.1		<0.1	<0.1	<0.1			**0.191**	<0.1		<0.1	<0.1

Table 8

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Muscatine Power & Water - CCR
Permit No. 70-SDP-06-82P

Constituent (CAS #)	Sample Date	Units	MW-8 Bkgrnd	MW-10 Bkgrnd	MW-22 Bkgrnd	MW-23 Bkgrnd	MW-4B DwnGrad	MW-5B DwnGrad	MW-6A DwnGrad	MW-13 Abandoned	MW-14A DwnGrad	MW-15A DwnGrad	MW-18 Abandoned	MW-21 DwnGrad	SW-24 U-Drain	SW-25 U-Drain	SW-22 UpStrm	SW-23 DwnStrm	SW-26 DwnStrm	MW-24 Assess	MW-25 Abandoned	MW-26 Delin	MW-27 Delin
Lead (Total) (7439-92-1)	10-10-16	mg/l	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005	<0.005	<0.0005	<0.0005	<0.0005	<0.0005									
MCL = 0.015	07-08-17	mg/l	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005									
	06-03-18	mg/l	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005									
	27-08-18	mg/l	<0.0005	<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005									
	18-03-19	mg/l	<0.0005	<0.0005	<0.0005	**0.00204**	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		
	06-08-19	mg/l	<0.0005	<0.0005	<0.0005	**0.000663**	<0.0005	<0.0005	<0.0005		<0.002	<0.0005		<0.0005	<0.002	<0.002	**0.000623**	<0.0005	<0.0005	<0.0005	<0.002		
	10-04-20	mg/l	<0.0005	<0.0005	<0.0005	**0.00116**	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005			
	18-09-20	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	**0.00053**	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	**0.000829**	**0.000549**	<0.0005	<0.0005		<0.0005	<0.0005
	06-04-21	mg/l	<0.0005	<0.0005	<0.0005	**0.000624**	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.00101**	<0.0005		<0.0005	<0.0005
	01-09-21	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	**0.00258**	**0.000726**	<0.0005	<0.0005		<0.0005	<0.0005
	20-04-22	mg/l	<0.0005	<0.0005	<0.0005	**0.000596**	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.002	<0.002	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
	14-09-22	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005			<0.0005	<0.0005		<0.0005	**0.000536**
	12-04-23	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	**0.00053**
	20-09-23	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	**0.000576**	**0.000627**	<0.0005		<0.0005	<0.0005		<0.0005						<0.0005		<0.0005	<0.0005
	15-04-24	mg/l	<0.0005	<0.0005	<0.0005	<0.0005			<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
	11-09-24	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005					<0.0005	<0.0005		<0.0005	<0.0005
	14-04-25	mg/l	<0.0005	<0.0005	<0.0005	**0.00115**	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.00299**	<0.0005		<0.0005	**0.00108**
	10-09-25	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005		<0.0005	<0.0005	<0.0005			<0.0005	<0.0005		<0.0005	<0.0005

Analytical Data Summary
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Constituent (CAS #)	Sample Date	Units	MW-8 Bkgrnd	MW-10 Bkgrnd	MW-22 Bkgrnd	MW-23 Bkgrnd	MW-4B DwnGrad	MW-5B DwnGrad	MW-6A DwnGrad	MW-13 Abandoned	MW-14A DwnGrad	MW-15A DwnGrad	MW-18 Abandoned	MW-21 DwnGrad	SW-24 U-Drain	SW-25 U-Drain	SW-22 UpStrm	SW-23 DwnStrm	SW-26 DwnStrm	MW-24 Assess	MW-25 Abandoned	MW-26 Delin	MW-27 Delin
Lithium	10-10-16	mg/l	<0.05	<0.05				<0.05	<0.05	<0.150	<0.05	<0.05	<0.05	<0.05									
40CFR§257.95(h)(2) = 0.04	07-08-17	mg/l	<0.05	<0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05									
	06-03-18	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.0122**	<0.01	<0.0005	<0.0005	<0.01									
	27-08-18	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01							<0.01		
	18-03-19	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0005	<0.01		<0.01	<0.01		**0.0277**									
	06-08-19	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0005	<0.01		<0.04	<0.01		**0.0279**							<0.04		
	10-04-20	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		**0.0213**									
	18-09-20	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		**0.0225**									
	06-04-21	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		**0.0198**									
	01-09-21	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01		**0.0233**									
	20-04-22	mg/l	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100		<0.0100	<0.0100		**0.0162**									
	14-09-22	mg/l	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100		<0.0100	<0.0100		**0.018**									
	12-04-23	mg/l	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100		<0.0100	<0.0100		**0.0143**									
	20-09-23	mg/l	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100		<0.0100	<0.0100		**0.0205**									
	15-04-24	mg/l	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100		<0.0100	<0.0100		**0.0124**									
	11-09-24	mg/l	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100		<0.0100	<0.0100		**0.0194**						<0.0100		**0.0108**	<0.0100
	14-04-25	mg/l	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100		<0.0100	<0.0100		**0.0185**	<0.0100	<0.0100	<0.0100	<0.0100	**0.0651**	<0.0100		**0.0107**	<0.0100
	10-09-25	mg/l	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100		<0.0100	<0.0100		**0.0121**	<0.0100	<0.0100			**0.0155**	<0.0100		**0.0118**	<0.0100
Magnesium (Total) (7439-95-4)	10-10-16	mg/l	**44.1**	**33.8**			**31.4**	**42**	**23.5**	**88**	**122**	**79.3**	**107**	**76.6**									
MCL = NA	07-08-17	mg/l	**36.4**	**37.8**			**33.4**	**43.8**	**24.7**	**34.9**	**124**	**86**	**99.6**	**72.1**									
	06-03-18	mg/l	**28.5**	**35.1**			**36.9**	**40.3**	**23.6**	**55.9**	**120**	**92**	**71.3**	**11.3**									
	27-08-18	mg/l	**31.8**	**33.4**			**32.6**	**44.6**	**23.6**	**33**	**145**	**63.4**	**81.5**	**34.1**									
	18-03-19	mg/l	**37.4**	**31.7**	**34.9**	**18.4**	**35.6**	**43.1**	**24.2**		**103**	**48.5**		**60.1**	**83.9**	**44.7**	**22.6**	**24.3**	**19.2**	**32.1**	**54.8**		
	06-08-19	mg/l	**50.1**	**30.0**	**33.0**	**24.7**	**34**	**42.8**	**25.4**		**103**	**46.9**		**62.5**	**99.9**	**77.3**	**20.9**	**44.6**	**25.8**	**44.2**	**57.4**		
	10-04-20	mg/l	**37.1**	**31.4**	**34.5**	**28.5**	**34**	**39.6**	**29.4**		**102**	**71**		**46.9**	**88.1**	**53**	**26.4**	**28.5**	**28.2**	**43**			
	18-09-20	mg/l	**31.8**	**31.9**	**31.1**	**24.3**	**33.2**	**36.6**	**28.5**		**104**	**59**		**45.6**	**89.2**	**64.5**	**22.9**	**36.2**	**30.5**	**32**		**53.4**	**29.2**
	06-04-21	mg/l	**31.8**	**32.2**	**31.0**	**25.3**	**34.3**	**35.7**	**28.8**		**116**	**55.4**		**34.9**	**84**	**32.4**	**17.2**	**19**	**14.8**	**33**		**49.5**	**10.7**
	01-09-21	mg/l	**31.0**	**31.3**	**31.4**	**24.8**	**35.6**	**35.2**	**29.6**		**119**	**54**		**40.8**	**87.6**	**33.8**	**25.8**	**29.4**	**23.8**	**30.3**		**50.8**	**28.4**
	20-04-22	mg/l	**27.7**	**35.0**	**29.6**	**23.3**	**35.1**	**35.0**	**28.6**		**120.0**	**56.0**		**40.2**	**74.4**	**47.3**	**23.6**	**27.2**	**25.4**	**28.3**		**46.4**	**12.9**
	14-09-22	mg/l	**30.1**	**33.3**	**31.8**	**24.6**	**33.6**	**36.8**	**29.4**		**122**	**56.1**		**39.1**	**87.1**	**56.4**			**18.3**	**29.1**		**49.9**	**17.3**
	12-04-23	mg/l	**31.1**	**34.5**	**31.5**	**24.4**	**33.9**	**34.8**	**31.2**		**122.0**	**48.7**		**33.0**	**86.1**	**538**	**25.1**	**34.0**	**33.0**	**34.7**		**52.3**	**11.9**
	20-09-23	mg/l	**31.5**	**34.7**	**32.0**	**25.4**	**33.6**	**37.6**	**27.2**		**122.0**	**54.0**		**42.8**						**29.9**		**48.9**	**15.5**
	15-04-24	mg/l	**32.7**	**41.5**	**33**	**26.6**	**35.6**	**36.5**	**31**		**135**	**51.6**		**24.9**	**85.8**	**42.2**	**20.9**	**23**	**20.8**	**30.7**		**50.5**	**15.4**
	11-09-24	mg/l	**34.3**	**41.1**	**33.1**	**25.9**	**35.9**	**36.4**	**30.8**		**134**	**53.8**		**41.3**					**20.6**	**31**		**45.3**	**27.9**
	14-04-25	mg/l	**34.4**	**46.1**	**30.7**	**27.1**	**32.3**	**36.3**	**28.8**		**134**	**53.2**		**40.5**	**78.7**	**49.6**	**22.6**	**28**	**23.1**	**32.7**		**43.3**	**13**
	10-09-25	mg/l	**32.4**	**36.4**	**31**	**21.9**	**35.7**	**38.3**	**27.5**		**124**	**34.2**		**23.7**	**95.8**	**53.3**			**29.1**	**34.6**		**44.8**	**24.2**

Table 8

Analytical Data Summary
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
Permit No. 70-SDP-06-82P

Constituent (CAS #)	Sample Date	Units	MW-8 Bkgrnd	MW-10 Bkgrnd	MW-22 Bkgrnd	MW-23 Bkgrnd	MW-4B DwnGrad	MW-5B DwnGrad	MW-6A DwnGrad	MW-13 Abandoned	MW-14A DwnGrad	MW-15A DwnGrad	MW-18 Abandoned	MW-21 DwnGrad	SW-24 U-Drain	SW-25 U-Drain	SW-22 UpStrm	SW-23 DwnStrm	SW-26 DwnStrm	MW-24 Assess	MW-25 Abandoned	MW-26 Delin	MW-27 Delin
Manganese (Total) (7439-95-5)	10-10-16	mg/l	**0.28**	**0.151**			**0.133**	**0.69**	**0.0818**	**0.509**	<0.01	<0.01	<0.01	<0.01									
SDWR = 0.05 / HAL = 0.3	07-08-17	mg/l	**0.237**	**0.166**			**0.132**	**0.689**	**0.0802**	**0.286**	<0.01	<0.01	<0.01	<0.01									
	06-03-18	mg/l	**0.201**	**0.0706**			**0.208**	**0.692**	**0.0866**	**0.512**	<0.01	<0.01	<0.01	<0.01									
	27-08-18	mg/l	**0.325**	**0.239**			**0.131**	**0.717**	**0.0805**	**0.305**	<0.01	<0.01	**0.0142**	<0.01									
	18-03-19	mg/l	**0.455**	**0.163**	**0.256**	**0.134**	**0.15**	**0.576**	**0.0839**		<0.01	<0.01		<0.01	**0.0179**	**0.0184**	**0.196**	**0.164**	**0.172**	**0.0216**	**0.0369**		
	06-08-19	mg/l	**0.758**	**0.177**	**1.74**	**0.0443**	**0.145**	**0.784**	**0.0941**		<0.04	<0.01		<0.01	**0.0304**	**0.0387**	**0.694**	**0.52**	**0.993**	**0.0223**	<0.04		
	10-04-20	mg/l	**0.119**	**0.184**	**0.0896**	**0.0718**	**0.13**	**0.492**	**0.103**		<0.01	<0.01		<0.01	<0.01	**0.0156**	**0.217**	**0.14**	**0.241**	**0.0156**			
	18-09-20	mg/l	**0.652**	**0.251**	**1.36**	**0.0127**	**0.686**	**0.546**	**0.113**		<0.01	<0.01		<0.01	<0.01	**0.0311**	**0.492**	**0.335**	**0.271**	<0.01		**0.0501**	**0.0345**
	06-04-21	mg/l	**0.185**	**0.199**	**0.18**	**0.0634**	**1.39**	**0.467**	**0.109**		<0.01	<0.01		<0.01	<0.01	<0.01	**0.0882**	**0.0311**	**0.114**	<0.01		**0.0395**	**0.0278**
	01-09-21	mg/l	**0.663**	**0.221**	**1.27**	**0.0444**	**1.39**	**0.512**	**0.117**		<0.01	<0.01		<0.01	<0.01	**0.054**	**0.539**	**0.578**	**0.29**	**0.0126**		**0.0629**	**0.0375**
	20-04-22	mg/l	**0.411**	**0.231**	**0.106**	**0.0588**	**0.91**	**0.454**	**0.112**		**0.0264**	<0.01		<0.01	<0.04	<0.04	**0.125**	**0.0426**	**0.0422**	<0.01		**0.0190**	**0.0722**
	14-09-22	mg/l	**0.749**	**0.31**	**0.795**	**0.0222**	**0.871**	**0.532**	**0.112**		<0.01	<0.01		<0.01	<0.01	**0.026**			**0.131**	<0.01		**0.0917**	**0.0406**
	12-04-23	mg/l	**0.309**	**0.396**	**0.0633**	**0.0372**	**0.510**	**0.453**	**0.113**		<0.01	<0.01		<0.01	<0.01	**0.0169**	**0.204**	**0.115**	**0.728**	**0.0144**		**0.0983**	**0.0378**
	20-09-23	mg/l	**0.370**	**0.266**	**0.7670**	**0.0169**	**0.612**	**0.594**	**0.0995**		<0.01	<0.01		<0.01						**0.0183**		**0.1110**	**0.0231**
	15-04-24	mg/l	**0.509**	**0.233**	**0.118**	**0.037**	**0.395**	**0.506**	**0.114**		<0.01	<0.01		<0.01	<0.01	**0.0148**	**0.0309**	**0.0181**	**0.0612**	**0.0156**		**0.0697**	**0.0376**
	11-09-24	mg/l	**0.491**	**0.255**	**0.677**	**0.0301**	**0.491**	**0.554**	**0.118**		<0.01	<0.01		<0.01					**0.385**	**0.0111**		**0.0458**	**0.0168**
	14-04-25	mg/l	**0.434**	**0.285**	**0.382**	**0.0499**	**0.241**	**0.478**	**0.111**		<0.01	<0.01		<0.01	<0.01	**0.0159**	**0.0486**	**0.0584**	**0.0545**	**0.0166**		**0.0423**	**0.094**
	10-09-25	mg/l	**0.366**	**0.165**	**0.48**	**0.02**	**0.386**	**0.53**	**0.0942**		<0.01	<0.01		**0.32**	<0.01	**0.0219**			**0.225**	**0.0326**		**0.146**	**0.0138**
Molybdenum (Total) (7439-98-7)	10-10-16	mg/l	<0.002	<0.002			<0.002	<0.002	<0.002	**0.0176**	<0.002	<0.002	<0.002	<0.002									
40CFR§257.95(h)(2) = 0.1	07-08-17	mg/l	<0.002	<0.002			<0.002	<0.002	<0.002	**0.00329**	<0.002	<0.002	<0.002	<0.002									
	06-03-18	mg/l	**0.0022**	<0.02			<0.002	<0.002	<0.002	**0.00732**	<0.002	<0.002	<0.002	<0.002									
	27-08-18	mg/l	**0.00224**	**0.0022**			<0.002	<0.002	<0.002	**0.00278**	<0.002	<0.002	<0.002	<0.002									
	18-03-19	mg/l	<0.002	**0.00341**	**0.00263**	<0.002	<0.002	**0.00212**	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	**0.00291**	<0.002	<0.002		
	06-08-19	mg/l	<0.002	**0.00219**	**0.00574**	<0.002	<0.002	<0.002	<0.002		<0.008	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	**0.00379**	<0.002	<0.008		
	10-04-20	mg/l	<0.002	**0.00215**	**0.00297**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002			
	18-09-20	mg/l	<0.002	<0.002	**0.00529**	<0.002	**0.00296**	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	**0.00256**	<0.002	<0.002	**0.0876**	<0.002		<0.002	<0.002
	06-04-21	mg/l	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	**0.011**	<0.002		**0.00239**	<0.002
	01-09-21	mg/l	**0.00218**	**0.0**	**0.00558**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	**0.00637**	**0.00252**	**0.00925**	<0.002		<0.002	<0.002
	20-04-22	mg/l	<0.002	<0.002	**0.0042**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.008	<0.008	<0.002	<0.002	**0.00202**	<0.002		<0.002	<0.002
	14-09-22	mg/l	<0.002	<0.002	**0.00446**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002			**0.00514**	<0.002		<0.002	<0.002
	12-04-23	mg/l	<0.002	<0.002	**0.00364**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	**0.0281**	**0.0149**	<0.002		<0.002	<0.002
	20-09-23	mg/l	<0.002	<0.002	**0.00661**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002						<0.002		<0.002	<0.002
	15-04-24	mg/l	<0.002	<0.002	**0.00217**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002
	11-09-24	mg/l	**0.00205**	**0.00287**	**0.00578**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002					**0.00433**	<0.002		<0.002	<0.002
	14-04-25	mg/l	<0.002	<0.002	**0.00415**	<0.002	<0.002	<0.002	<0.002		**0.00322**	**0.0109**		<0.002	**0.00216**	<0.002	<0.002	<0.002	**0.00699**	<0.002		<0.002	<0.002
	10-09-25	mg/l	<0.002	**0.00216**	**0.0051**	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002		<0.002	<0.002	**0.00772**			**0.0427**	**0.0025**		<0.002	<0.002

Table 8

Analytical Data Summary
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
Permit No. 70-SDP-06-82P

Constituent (CAS #)	Sample Date	Units	MW-8 Bkgrnd	MW-10 Bkgrnd	MW-22 Bkgrnd	MW-23 Bkgrnd	MW-4B DwnGrad	MW-5B DwnGrad	MW-6A DwnGrad	MW-13 Abandoned	MW-14A DwnGrad	MW-15A DwnGrad	MW-18 Abandoned	MW-21 DwnGrad	SW-24 U-Drain	SW-25 U-Drain	SW-22 UpStrm	SW-23 DwnStrm	SW-26 DwnStrm	MW-24 Assess	MW-25 Abandoned	MW-26 Delin	MW-27 Delin
Selenium (Total) (7782-49-2)	10-10-16	mg/l	<0.005	<0.005			<0.005	<0.005	<0.005	**0.0364**	**0.00821**	<0.005	<0.005	**0.0137**									
MCL = 0.05	07-08-17	mg/l	<0.005	<0.005			<0.005	<0.005	<0.005	<0.005	**0.00759**	<0.005	<0.005	**0.0109**									
	06-03-18	mg/l	<0.005	<0.005			<0.005	<0.005	<0.005	**0.0195**	<0.005	**0.00502**	<0.005	<0.005									
	27-08-18	mg/l	<0.005	<0.005			<0.005	<0.005	<0.005	<0.005	**0.00827**	<0.005	<0.005	<0.005									
	18-03-19	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		**0.00569**	<0.005		**0.0102**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.02		
	06-08-19	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.02	<0.005		**0.0108**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
	10-04-20	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		**0.00632**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			
	18-09-20	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		**0.00762**	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005		<0.005	<0.005
	06-04-21	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005
	01-09-21	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		**0.00617**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005
	20-04-22	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		**0.00634**	<0.02	<0.02	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005
	14-09-22	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005			<0.005	<0.005		<0.005	<0.005
	12-04-23	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005
	20-09-23	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		**0.0053**						<0.005		<0.005	<0.005
	15-04-24	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005
	11-09-24	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		**0.00666**					<0.005	<0.005		<0.005	<0.005
	14-04-25	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		**0.00832**	<0.005	<0.005	<0.005	<0.005	**0.0375**	<0.005		<0.005	<0.005
	10-09-25	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005		<0.005	<0.005	<0.005			<0.005	<0.005		<0.005	<0.005
Strontium (Total) (7440-24-6)	10-10-16	mg/l	**0.338**	**0.156**			**0.103**	**0.193**	**0.156**	**0.342**	**0.279**	**0.185**	**0.325**	**0.291**									
HAL = 4	07-08-17	mg/l	**0.243**	**0.165**			**0.11**	**0.197**	**0.161**	**0.135**	**0.257**	**0.178**	**0.287**	**0.256**									
	06-03-18	mg/l	**0.209**	**0.159**			**0.137**	**0.2**	**0.172**	**0.243**	**0.241**	**0.191**	**0.225**	**0.0425**									
	27-08-18	mg/l	**0.198**	**0.197**			**0.107**	**0.212**	**0.161**	**0.139**	**0.266**	**0.14**	**0.257**	**0.133**									
	18-03-19	mg/l	**0.236**	**0.181**	**0.151**	**0.123**	**0.12**	**0.214**	**0.176**		**0.275**	**0.126**		**0.254**	**0.541**	**0.322**	**0.12**	**0.131**	**0.123**	**0.0937**	**0.0953**		
	06-08-19	mg/l	**0.323**	**0.199**	**0.133**	**0.0872**	**0.115**	**0.208**	**0.178**		**0.274**	**0.134**		**0.263**	**0.444**	**0.346**	**0.129**	**0.264**	**0.158**	**0.123**	**0.106**		
	10-04-20	mg/l	**0.233**	**0.19**	**0.129**	**0.0661**	**0.103**	**0.166**	**0.173**		**0.246**	**0.154**		**0.175**	**0.358**	**0.315**	**0.128**	**0.141**	**0.156**	**0.109**			
	18-09-20	mg/l	**0.176**	**0.19**	**0.108**	**0.0602**	**0.146**	**0.167**	**0.187**		**0.259**	**0.153**		**0.184**	**0.335**	**0.288**	**0.125**	**0.23**	**0.759**	**0.0824**		**0.174**	**0.106**
	06-04-21	mg/l	**0.188**	**0.18**	**0.130**	**0.0639**	**0.129**	**0.163**	**0.188**		**0.261**	**0.133**		**0.148**	**0.388**	**0.312**	**0.12**	**0.137**	**0.17**	**0.0899**		**0.159**	**0.0986**
	01-09-21	mg/l	**0.172**	**0.23**	**0.115**	**0.068**	**0.14**	**0.17**	**0.204**		**0.282**	**0.136**		**0.178**	**0.347**	**0.101**	**0.147**	**0.19**	**0.174**	**0.085**		**0.159**	**0.128**
	20-04-22	mg/l	**0.164**	**0.173**	**0.127**	**0.0595**	**0.122**	**0.168**	**0.194**		**0.247**	**0.149**		**0.169**	**0.301**	**0.245**	**0.125**	**0.148**	**0.146**	**0.0802**		**0.145**	**0.0575**
	14-09-22	mg/l	**0.16**	**0.191**	**0.111**	**0.0592**	**0.101**	**0.167**	**0.184**		**0.266**	**0.127**		**0.155**	**0.326**	**0.218**			**0.156**	**0.0746**		**0.145**	**0.0659**
	12-04-23	mg/l	**0.148**	**0.178**	**0.137**	**0.0526**	**0.0910**	**0.149**	**0.194**		**0.293**	**0.0985**		**0.153**	**0.339**	**0.257**	**0.111**	**0.229**	**0.203**	**0.0795**		**0.133**	**0.0512**
	20-09-23	mg/l	**0.151**	**0.207**	**0.101**	**0.0601**	**0.0958**	**0.163**	**0.165**		**0.282**	**0.113**		**0.164**						**0.0768**		**0.135**	**0.0752**
	15-04-24	mg/l	**0.172**	**0.188**	**0.103**	**0.0585**	**0.0951**	**0.166**	**0.19**		**0.301**	**0.125**		**0.153**	**0.448**	**0.293**	**0.115**	**0.137**	**0.146**	**0.0703**		**0.147**	**0.069**
	11-09-24	mg/l	**0.181**	**0.197**	**0.106**	**0.0598**	**0.1030**	**0.162**	**0.188**		**0.298**	**0.117**		**0.181**					**0.172**	**0.0754**		**0.127**	**0.113**
	14-04-25	mg/l	**0.159**	**0.169**	**0.124**	**0.0665**	**0.0917**	**0.159**	**0.175**		**0.229**	**0.107**		**0.173**	**0.271**	**0.206**	**0.103**	**0.128**	**0.402**	**0.0806**		**0.119**	**0.067**
	10-09-25	mg/l	**0.151**	**0.164**	**0.119**	**0.053**	**0.101**	**0.161**	**0.162**		**0.243**	**0.0826**		**0.166**	**0.368**	**0.223**			**0.387**	**0.079**		**0.12**	**0.122**

Table 8

Analytical Data Summary
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
Permit No. 70-SDP-06-82P

Constituent (CAS #)	Sample Date	Units	MW-8 Bkgrnd	MW-10 Bkgrnd	MW-22 Bkgrnd	MW-23 Bkgrnd	MW-4B DwnGrad	MW-5B DwnGrad	MW-6A DwnGrad	MW-13 Abandoned	MW-14A DwnGrad	MW-15A DwnGrad	MW-18 Abandoned	MW-21 DwnGrad	SW-24 U-Drain	SW-25 U-Drain	SW-22 UpStrm	SW-23 DwnStrm	SW-26 DwnStrm	MW-24 Assess	MW-25 Abandoned	MW-26 Delin	MW-27 Delin
Sulfate (14808-79-8)	10-10-16	mg/l	**187**	**36.4**			**27.2**	**105**	<5	**1170**	**1010**	**607**	**855**	**603**									
SDWR = 250	07-08-17	mg/l	**119**	**39**			**35.3**	**114**	<5	**99.4**	**1110**	**664**	**801**	**590**									
	06-03-18	mg/l	**87.3**	**51.4**			**162**	**122**	<5	**506**	**1110**	**824**	**624**	**53.7**									
	27-08-18	mg/l	**94.7**	**34.3**			**52.2**	**120**	<5	**72.7**	**1070**	**400**	**675**	**96.6**									
	18-03-19	mg/l	**223**	**42.8**	**134**	**26.2**	**48**	**85**	<5		**1050**	**351**		**442**	**832**	**313**	**20.4**	**42.2**	**33.7**	**90.8**	**360**		
	06-08-19	mg/l	**276**	**28.8**	**139**	**29.7**	**47**	**112**	<5		**837**	**327**		**529**	**694**	**618**	**10.1**	**175**	**46.3**	**169**	**325**		
	10-04-20	mg/l	**123**	**18.6**	**143**	**25.5**	**41.5**	**58.9**	**13.6**		**888**	**496**		**373**	**572**	**322**	**16.3**	**41.5**	**45.9**	**164**			
	18-09-20	mg/l	**100**	**36.5**	**151**	**25.8**	**46.9**	**61.9**	**19.1**		**924**	**403**		**356**	**583**	**456**	**21**	**218**	**828**	**81**		**376**	**119**
	06-04-21	mg/l	**100**	**27.6**	**154**	**35.5**	**60.1**	**57.4**	**27.3**		**952**	**338**		**237**	**607**	**127**	**13.9**	**23.6**	**86.4**	**91.2**		**341**	**7.63**
	01-09-21	mg/l	**83**	**32.3**	**154**	**25.8**	**50.2**	**53.7**	**22.7**		**1010**	**333**		**303**	**533**	**222**	**14.3**	**54.3**	**85.9**	**59.3**		**358**	**111**
	20-04-22	mg/l	**72.8**	**48.3**	**158**	**25.4**	**58.4**	**44.7**	**18.9**		**1030**	**297**		**293**	**575**	**357**	**15.7**	**58.4**	**57.3**	**48.5**		**322**	**30.70**
	14-09-22	mg/l	**67.1**	**31.2**	**220**	**23**	**49.5**	**49.9**	**16.4**		**978**	**319**		**151**	**588**	**387**			**81.4**	**44.5**		**313**	**38.2**
	12-04-23	mg/l	**72.2**	**39.8**	**147**	**25.0**	**54.0**	**45.8**	**20.5**		**1150**	**254**		**215**	**622**	**299**	**15.7**	**182**	**121**	**87.8**		**72.5**	**5.13**
	20-09-23	mg/l	**94.2**	**57.4**	**208**	**28.6**	**53.1**	**53.4**	**10.1**		**1440**	**365**		**303**						**62.9**		**380**	**27.0**
	15-04-24	mg/l	**65.7**	**49.6**	**160**	**21.8**	**56.1**	**46.3**	**18.1**		**1160**	**256**		**138**	**676**	**292**	**15.1**	**40.2**	**43.8**	**43.8**		**309**	**36.7**
	11-09-24	mg/l	**68.9**	**59.9**	**161**	**23.8**	**65.8**	**50.4**	**16.3**		**1110**	**273**		**248**					**52.2**	**43.8**		**234.0**	**85.0**
	14-04-25	mg/l	**63.5**	**84.7**	**143**	**23.4**	**50.8**	**35.7**	**18.5**		**808**	**309**		**230**	**129**	**69.3**	**15.7**	**34.9**	**45.5**	**40.5**		**269**	**11.4**
	10-09-25	mg/l	**68.8**	**57**	**149**	**25.7**	**55.8**	**47.6**	**20.7**		**953**	**162**		**135**	**594**	**344**			**452**	**38.2**		**264**	**55.2**
Total Suspended Solids	11-09-24	mg/l	**2.25**	**386**				**520**	**382**		**1830**	**602**		**584**									
	14-04-25	mg/l	**2.88**	**4**	**6**	**73.5**	**3.75**	**8.2**	**8.33**		**3.25**	<1.88		**2.13**									
	10-09-25	mg/l																					
Zinc (Total) (7440-66-6)	10-10-16	mg/l	<0.01	<0.01			<0.01	<0.01	<0.01	**0.0197**	<0.01	<0.01	<0.01	<0.01									
HAL = 2 / SDWR = 5	07-08-17	mg/l	<0.02	<0.02			<0.02	<0.02	<0.02	<0.002	<0.02	<0.02	<0.02	<0.02									
	06-03-18	mg/l	<0.02	<0.02			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02									
	27-08-18	mg/l	<0.02	<0.02			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02									
	18-03-19	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.08		
	06-08-19	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.08	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.08		
	10-04-20	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02			
	18-09-20	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02
	06-04-21	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02	**0.0314**	<0.02		<0.02	<0.02
	01-09-21	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02	<0.02	<0.02	**0.0312**	<0.02	<0.02	<0.02		<0.02	<0.02
	20-04-22	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02	<0.08	<0.08	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02
	14-09-22	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02	<0.02	<0.02			<0.02	<0.02	<0.02	<0.02	<0.02
	12-04-23	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02
	20-09-23	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02						<0.02	<0.02	<0.02	<0.02
	15-04-24	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02
	11-09-24	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		**0.022**	<0.02		<0.02					<0.02	<0.02		<0.02	<0.02
	14-04-25	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02	**0.0207**	<0.02		<0.02	<0.02
	10-09-25	mg/l	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02	<0.02	<0.02			<0.02	<0.02		<0.02	<0.02

Notes:
Bold indicates reported detection
MCL = USEPA Maximum Contaminant Level
HAL = Health Advisory Level
NS - Not Sampled
SS = Iowa Statewide Standards
SDWR = Secondary Drinking Water Regulations (also known as Secondary MCL)

Historical Control Limit & Action Level Exceedances
2025 Annual Water Quality Report
Muscatine Power & Water - CCR
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Key: gray = CL; black =action level (MCL); X= other standard (SDWR, HAL, SWS)		Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024	Fall 2024	Spring 2025	Fall 2025
Well	**Constituent**														
MW-4B	Aluminum				X										
	Molybdenum						X								
	Iron	X	X	X	X					X	X	X	X	X	X
	Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-5B	Barium														
	Chloride														
	Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-6A	Barium														
	Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-8	Iron							X	X	X	X	X	X	X	X
	Molybdenum		X												
	Magnesium														
	Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Sulfate														
MW-10	Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-14A	Boron	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Calcium														
	Magnesium														
	Selenium														
	Sulfate	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Zinc														
MW-15A	Boron	X	X	X	X	X	X	X	X		X		X	X	
	Calcium														
	Magnesium														
	Sulfate	X	X	X	X	X	X	X	X	X	X	X	X	X	
MW-21	Boron	X	X	X	X										
	Magnesium														
	Selenium														
	Sulfate	X	X	X	X		X	X			X				
MW-22	Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-23	Aluminum	X	X	X		X	X	X		X	X	X	X	X	X
	Iron	X		X		X		X						X	
	Manganese	X		X		X		X							

Historical Control Limit & Action Level Exceedances
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Key: gray = CL; black =action level (MCL); X= other standard (SDWR, HAL, SWS)

Well	Constituent	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024	Fall 2024	Spring 2025	Fall 2025
MW-24	Aluminum	X	X	X											
SW-24	Boron	X	X	X	X	X	X	X	X	X		X		X	X
	Calcium														
	Iron	X													
	Magnesium														
	Strontium														
	Sulfate	X	X	X	X	X	X	X	X			X			X
SW-25	Aluminum						X								
	Boron		X			X									
	Calcium														
	Iron						X								
	Magnesium														
	Manganese						X								
	Sulfate	X	X	X	X			X	X	X		X			X
MW-26	Boron														
	Iron									X					
	Magnesium														
	Manganese				X		X		X	X	X	X			X
	Sulfate				X	X	X	X	X		X	X		X	X
MW-27	Aluminum						X	X	X	X		X	X	X	X
	Boron														
	Iron								X	X				X	
	Manganese							X						X	
SW-22	Aluminum	X	X	X	X	X	X					X			
	Iron	X	X	X	X		X								
	Manganese	X	X	X	X	X	X	X							
	Zinc														
SW-23	Aluminum	X	X	X	X	X	X								
	Arsenic														
	Copper														
	Iron		X		X		X								
	Manganese	X	X	X	X		X							X	
	Molybdenum														
SW-26	Aluminum					X	X					X	X	X	
	Arsenic														
	Boron				X										
	Iron	X		X		X								X	
	Manganese	X	X	X	X	X	X		X			X		X	X
	Molybdenum				X										
	Zinc														

Groundwater Quality Assessment - Trend Analysis
2025 Annual Water Quality Report
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Well	Current SSL	Trend (Fall 2025)
MW-5B	Chloride	Decreasing
MW-8	Sulfate	Decreasing
MW-14A	Magnesium	Increasing
MW-15A	Boron	Decreasing
	Magnesium	Decreasing
MW-21	Selenium	Decreasing
MW-22	Chloride	Decreasing
	Sulfate	Increasing
MW-23	Sulfate	Decreasing
	Chloride	Increasing
SW-24	Boron	Decreasing
	Calcium	Decreasing

Table 11

Horizontal Velocity
2025 Annual Water Quality Report
Muscatine Power and Water CCR Landfill
Permit No. #70-SDP-06-82P

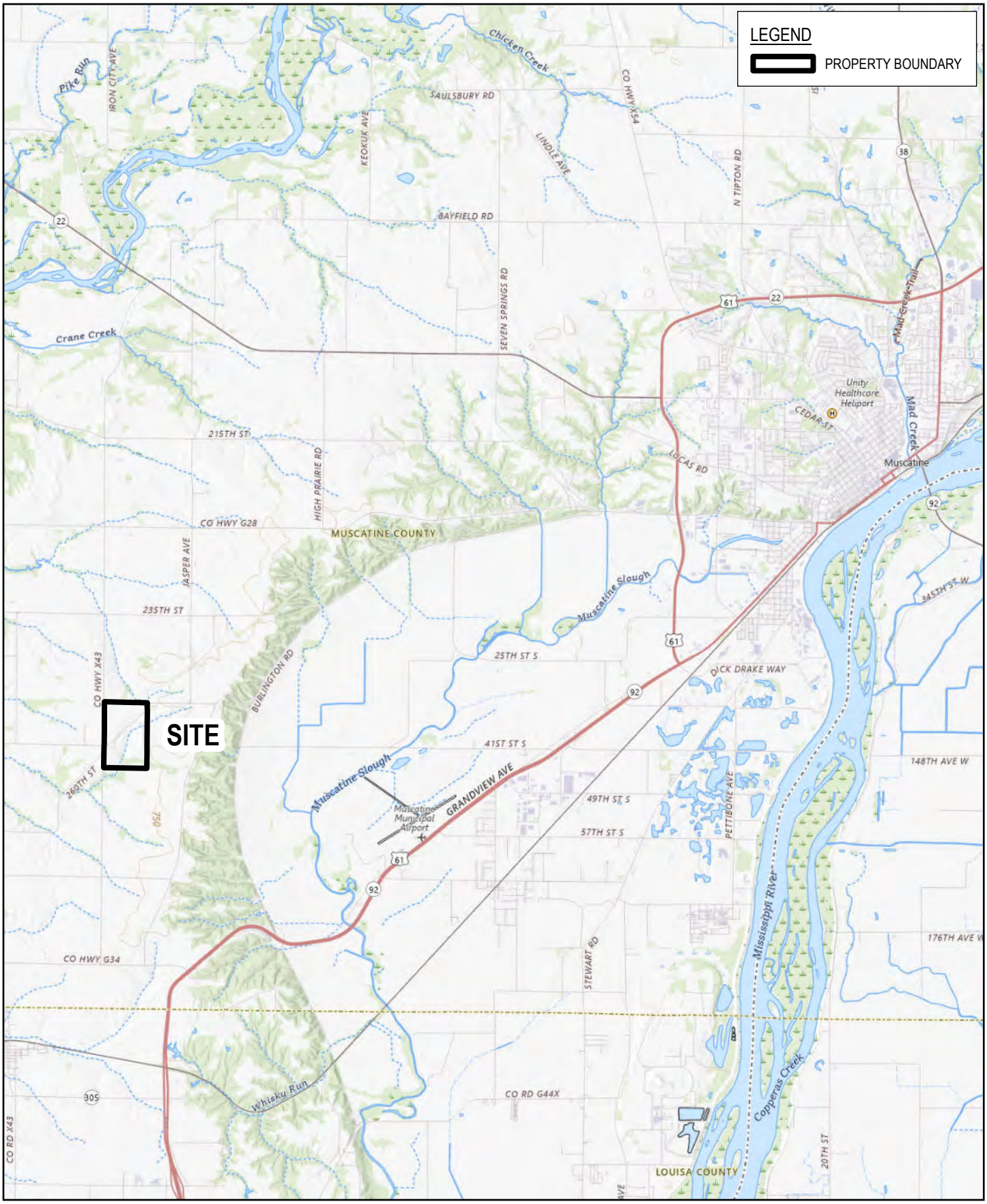
Date	Monitoring Wells	Horizontal Hydraulic Gradient (unitless)	Average Linear Groundwater Flow Velocity (meters/day)	Average Linear Groundwater Flow Velocity (feet/year)
18-04-25	MW-8, MW-15A	0.017	0.002	3
10-09-25	MW-8, MW-15A	0.015	0.002	2

Notes:
Velocity calculated for given well pair assuming effective porosity of 0.3 and mean hydraulic conductivity of 0.04 meters per day.

Vertical Hydraulic Grandients[a] (ft/ft)
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Muscatine Power and Water CCR Landfill
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Well Cluster	Vertical Gradient	
Shallow/Deep	**April 2025**	**September 2025**
MW-8/MW-9	-0.431	-0.826
MW-10/MW-11	0.018	0.057
MW-11/MW-12	0.001	-0.012

Notes:
[a] Positive hydraulic gradients indicate upward-directed flow, and negative hydraulic gradients indicate downward-directed flow.
ft/ft - Foot per foot.



Paper Size ANSI A

0 0.5 1 1.5

Miles

Map Projection: Transverse Mercator
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 (2011) IaRCS zone 14

N

GHD

MUSCATINE POWER AND WATER
CCR LANDFILL
MUSCATINE, IOWA

Project No. **12606359**
Revision No. **-**
Date **11/25/2025**

SITE LOCATION

FIGURE 1

O:\GIS\PROJECTS\12606000s\12606359\GIS\Maps\Deliverables\RPT\RPT006\12606359_RPT006.aprx
Layout: 12606359_001_SiteLocation; Print date: 25 Nov 2025 - 16:49

Data source: USGS The National Map. Created by: rjcoy



Paper Size ANSI A

0 100 200 300 400 500

Feet

Map Projection: Transverse Mercator
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 (2011) IaRCS zone 14

N

GHD

MUSCATINE POWER AND WATER
CCR LANDFILL
MUSCATINE, IOWA

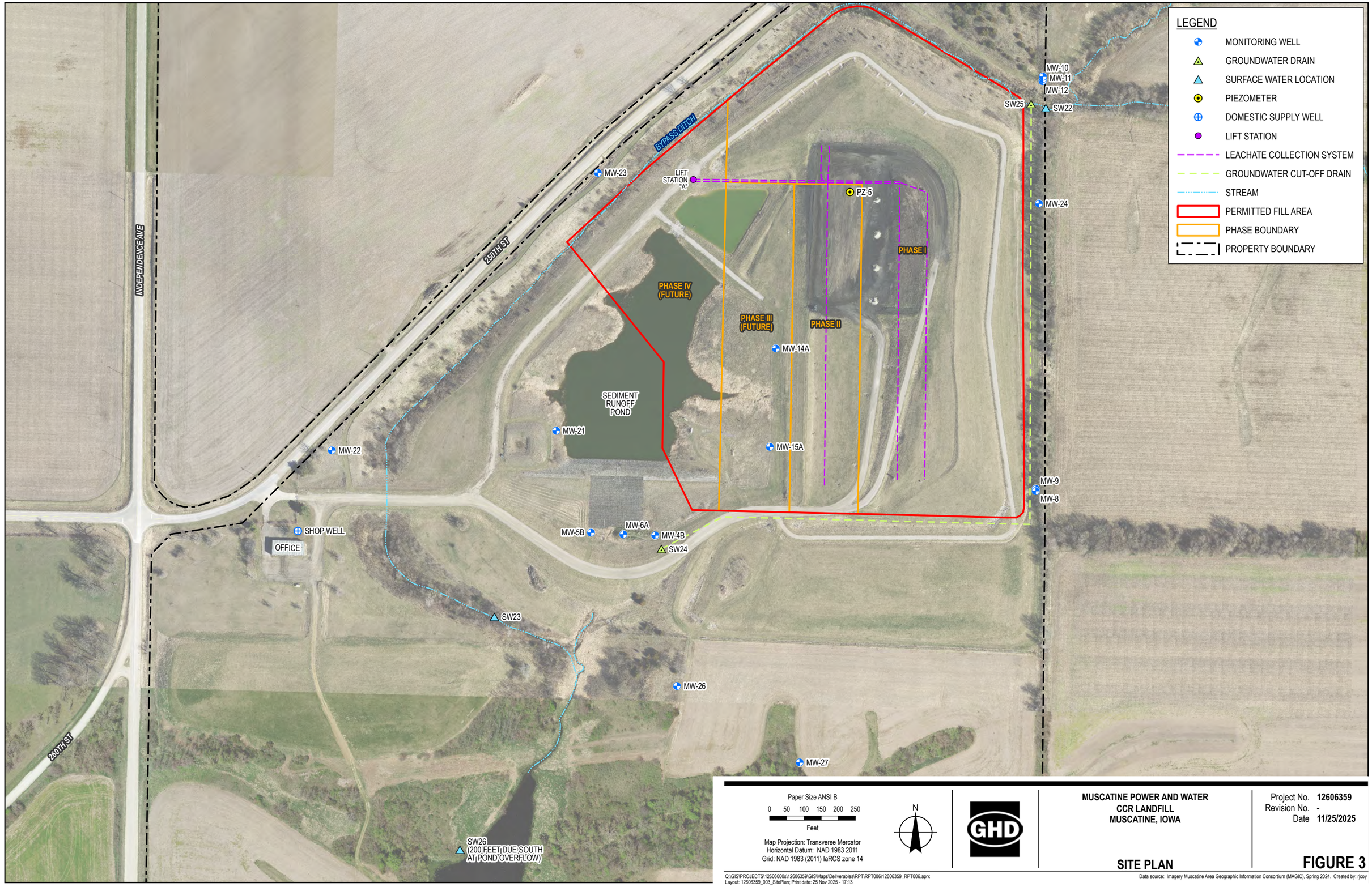
Project No. **12606359**
Revision No. **-**
Date **11/25/2025**

SITE OVERVIEW

FIGURE 2

O:\GIS\PROJECTS\12606000s\12606359\GIS\Maps\Deliverables\RPT\RPT006\12606359_RPT006.aprx
Layout: 12606359_002_SiteOverview; Print date: 25 Nov 2025 - 16:50

Data source: Imagery Muscatine Area Geographic Information Consortium (MAGIC), Spring 2024. Created by: rjcoy



Paper Size ANSI B

0 50 100 150 200 250

Feet

Map Projection: Transverse Mercator
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 (2011) IaRCS zone 14

N

GHD

MUSCATINE POWER AND WATER
CCR LANDFILL
MUSCATINE, IOWA

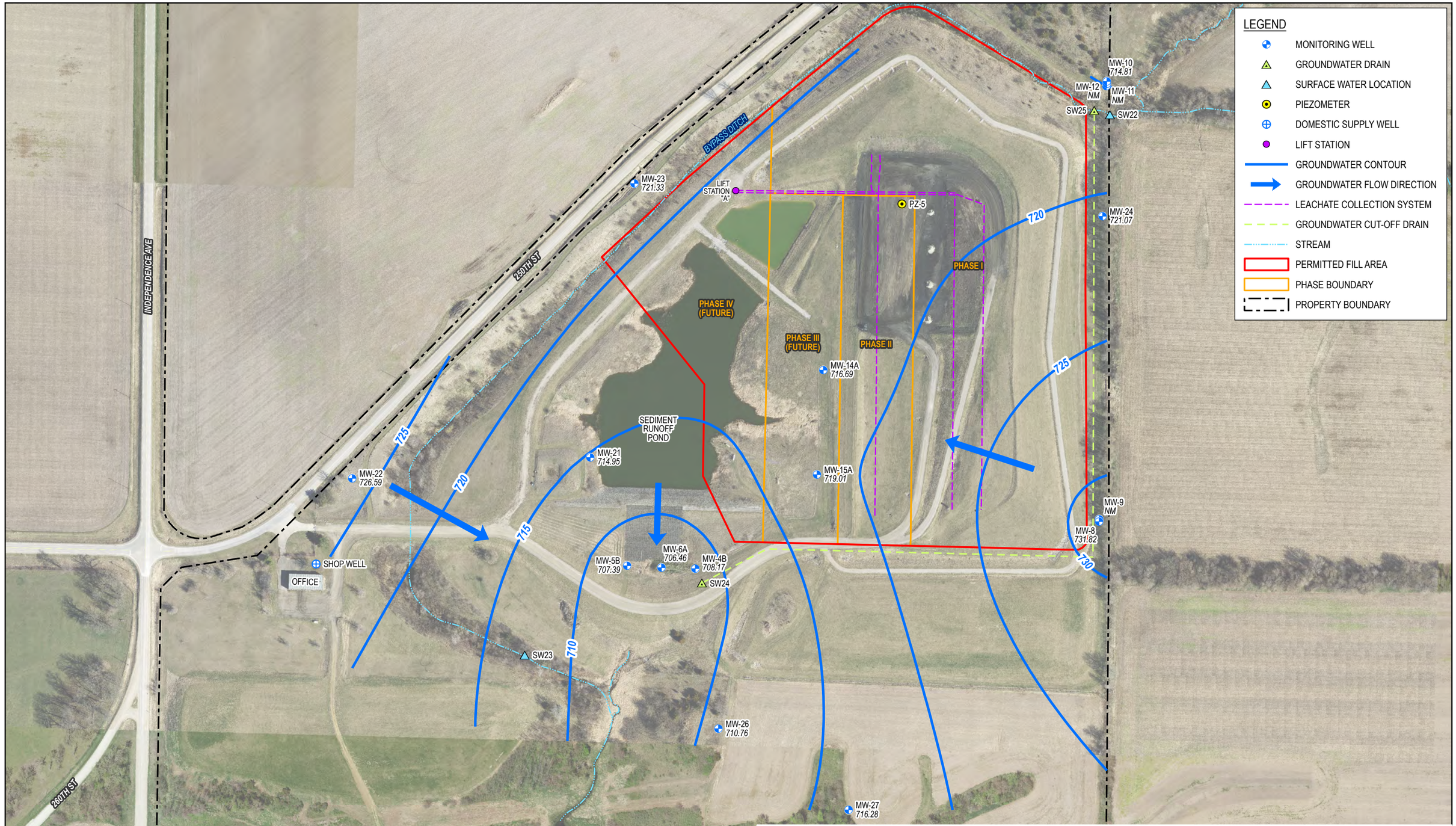
Project No. **12606359**
Revision No. **-**
Date **11/25/2025**

SITE PLAN

FIGURE 3

Q:\GIS\PROJECTS\12606000s\12606359\GIS\Maps\Deliverables\RPT\RPT006\12606359_RPT006.aprx
Layout: 12606359_003_SitePlan; Print date: 25 Nov 2025 - 17:13

Data source: Imagery Muscatine Area Geographic Information Consortium (MAGIC), Spring 2024. Created by: rjcoy



NOTES

729.95	GROUNDWATER ELEVATION (FT AMSL)
NM	NOT MEASURED
*709.54**	NOT USED FOR CONTOUR INTERPRETATION

Paper Size ANSI B

0 50 100 150 200 250

Feet

Map Projection: Transverse Mercator
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 (2011) IaRCS zone 14

N

GHD

MUSCATINE POWER AND WATER
CCR LANDFILL
MUSCATINE, IOWA

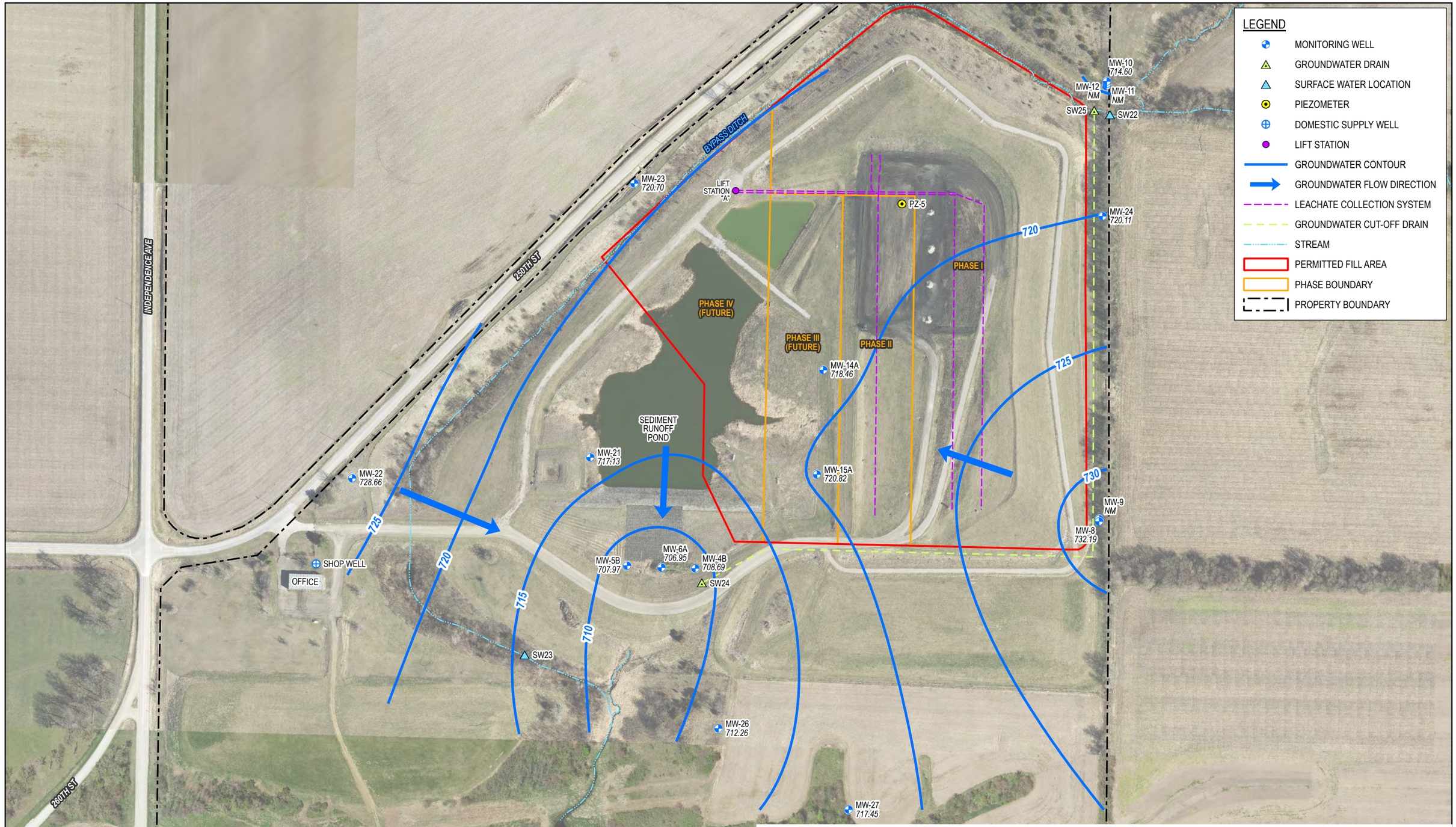
GROUNDWATER CONTOURS
APRIL 18, 2025

Project No. **12606359**
Revision No. **-**
Date **01/22/2026**

FIGURE 4

Q:\GIS\PROJECTS\12606000s\12606359\GIS\Maps\Deliverables\RPT\RPT006\12606359_RPT006.aprx
Layout: 12606359_004_GWContApr25; Print date: 22 Jan 2026 - 10:51

Data source: Imagery Muscatine Area Geographic Information Consortium (MAGIC), Spring 2024. Created by: rjcoy



Paper Size ANSI B

0 50 100 150 200 250

Feet

Map Projection: Transverse Mercator
Horizontal Datum: NAD 1983 2011
Grid: NAD 1983 (2011) IaRCS zone 14

N

GHD

MUSCATINE POWER AND WATER
CCR LANDFILL
MUSCATINE, IOWA

GROUNDWATER CONTOURS
SEPTEMBER 8-10, 2025

Project No. **12606359**
Revision No. **-**
Date **01/22/2026**

FIGURE 5

Q:\GIS\PROJECTS\12606000s\12606359\GIS\Maps\Deliverables\RPT\RPT006\12606359_RPT006.aprx
Layout: 12606359_005_GWContSep25; Print date: 22 Jan 2026 - 10:52

Data source: Imagery Muscatine Area Geographic Information Consortium (MAGIC), Spring 2024. Created by: rjcoy

Appendices

Appendix A

Sample Collection Records

LOW FLOW SAMPLING FORM

DATE	4/18/2025	WELL ID	MW-4B	SAMPLE DATE - TIME	4/18/25 - 0945
SITE	Muscatine Power & Water	DTW	7.70	NOTE	
PROJECT #		WELL DEPTH	27.80		
WEATHER	Mostly Cloudy, 65DF	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
915	100	0	7.70							
920	100	500	8.29	18.39	7.39	114	0.695	2.1	24.34	
925	100	1000	8.51	17.52	7.36	113	0.701	1.5	2.52	
930	100	1500	8.62	17.19	7.35	109	0.704	0.8	1.73	
935	100	2000	8.68	16.89	7.35	106	0.708	0.6	1.29	
940	100	2500	8.68	16.93	7.35	104	0.705	0.7	1.15	
945	100	3000	8.68	17.21	7.34	102	0.704	0.7	1.10	Sample Start
1015			9.00							Sample End

Preservative	# of Containers	
HCl		
HNO_3		
None		

0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*Limits*
									or +/-0.2 mg	

LOW FLOW SAMPLING FORM

DATE	4/18/2025	WELL ID	MW-5B	SAMPLE DATE - TIME	4/18/25 - 0835
SITE	Muscatine Power & Water	DTW	1.71	NOTE	OL-2 taken here marked as 1200
PROJECT #		WELL DEPTH	Bottom, 24.88		
WEATHER	68DF, Clear, Calm	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
750	100	0	1.71							
755	100	500	2.3	12.30	6.86	-31	0.913	28.7	2.03	
800	100	1000	2.41	12.14	6.87	-36	0.882	16.1	0.93	
805	100	1500	2.51	11.92	6.83	-7	0.874	12.2	0.66	
810	100	2000	2.62	11.99	6.81	-6	0.871	10.4	0.60	
815	100	2500	2.68	12.04	6.87	-71	0.869	7.4	0.60	
820	100	3000	2.69	12.05	6.91	-77	0.871	4.3	0.61	
825	100	3500	2.7	11.95	6.97	-85	0.873	5.6	0.59	
830	100	4000	2.72	12.16	7.05	-94	0.872	5.8	0.59	
835	100	4500	2.75	12.26	7.05	-95	0.872	5.4	0.56	Sample Start 0835
			2.85							Sample End 0855 QL-2
			2.91							QC-2 End 0918

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

LOW FLOW SAMPLING FORM

DATE	4/18/2025	WELL ID	MW-6A	SAMPLE DATE - TIME	4/18/25 - 1015
SITE	Muscatine Power & Water	DTW	2.46	NOTE	
PROJECT #		WELL DEPTH	Bottom 25.19		
WEATHER	W wind 20mph, Mostly Cloudy, 65DF	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
950	100		2.46							
955	100	500	2.92	13.89	7.19	-105	0.722	1.4	2.23	
1000	100	1000	2.97	13.38	7.14	-114	0.712	0.0	1.06	
1005	100	1500	3.00	13.34	7.12	-118	0.715	0.0	0.76	
1010	100	2000	3.03	13.35	7.15	-122	0.713	0.0	0.74	
1015	100	2500	3.05	13.32	7.15	-125	0.712	0.0	0.72	Sample Start 1015
			3.09							Sample End 1040
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 m*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	4/16/2025	WELL ID	MW-08	SAMPLE DATE - TIME	4/16/25 - 1115
SITE	Muscatine Power & Water	DTW	15.59	NOTE	
PROJECT #		WELL DEPTH	Bottom 43.16		
WEATHER		PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1030	100		15.59							
1035	100	500	16.66	12.26	7.4	-19	0.677	11.6	1.91	
1040	100	1000	17.20	12.24	7.24	-22	0.684	12.3	1.12	
1045	100	1500	17.68	12.28	7.21	-23	0.684	8.9	1.06	
1050	100	2000	18.47	12.37	7.2	-24	0.684	7.5	0.92	
1055	100	2500	19.48	12.65	7.16	-29	0.673	2.6	2.01	
1100	100	3000	20.10	12.23	7.3	7	0.642	1.4	3.36	
1105	100	3500	20.31	12.42	7.32	11	0.638	0.8	3.38	
1110	100	4000	20.58	12.58	7.33	12	0.635	0.7	3.47	
1115	100	4500	20.88	12.71	7.3	5	0.637	0.8	3.21	Sample Start
1155	100		22.12							Farmer Using Ammonia
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*Limits*
									or +/-0.2 mg	

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	4/16/2025	WELL ID	MW-10	SAMPLE DATE - TIME	4/16/25 - 0840
SITE	Muscatine Power & Water	DTW	3.70	NOTE	
PROJECT #	Spring 25	WELL DEPTH	19.93		
WEATHER	41DF, Clear, Calm	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
755	100		3.70							
800	100	500	3.87	9.71	6.65	59	0.760	5.8	0.60	
805	100	1000	3.87	8.25	6.83	30	0.808	4.0	0.46	
810	100	1500	3.87	8.06	6.83	21	0.817	3.6	0.41	
815	100	2000	3.87	7.91	6.80	21	0.824	2.8	0.40	
820	100	2500	3.88	7.74	6.67	22	0.842	1.7	0.38	
825	100	3000	3.88	7.79	6.60	23	0.845	1.3	0.35	
830	100	3500	3.90	7.82	6.52	24	0.851	1.0	0.34	
835	100	4000	3.90	7.83	6.50	24	0.853	0.9	0.33	
840	100	4500	3.91	7.87	6.51	23	0.851	0.9	0.34	Sample Start
910	100		3.91							Sample End
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	4/17/2025	WELL ID	MW-14A	SAMPLE DATE - TIME	4/17/25 - 0815
SITE	Muscatine Power & Water	DTW	12.31	NOTE	
PROJECT #		WELL DEPTH	20.65		
WEATHER	60DF, Light Rain, 5-10MPH SSE Wind	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
740	100		12.31							
745	100	500	12.80	15.54	6.63	304	1.93	15.5	9.52	
750	100	1000	13.25	14.64	6.91	293	1.95	9.9	9.88	
755	100	1500	13.64	14.21	6.93	291	1.96	6.3	10.25	
800	100	2000	13.91	13.97	6.94	289	1.99	3.9	10.4	
805	100	2500	14.19	13.77	6.93	287	2.01	4.9	9.99	
810	100	3000	14.47	13.62	6.91	287	2.02	4.6	9.95	
815	100	3500	14.63	13.55	6.90	287	2.02	4.7	9.96	Sample Start
845	100		16.25							Sample End

Preservative	# of Containers	DUP-1
HCl		
HNO_3		
NaOH		
None		

0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

LOW FLOW SAMPLING FORM

DATE	4/17/2025	WELL ID	MW-15A	SAMPLE DATE - TIME	4/17/25 - 1010
SITE	Muscatine Power & Water	DTW	10.98	NOTE	
PROJECT #		WELL DEPTH	20.53		
WEATHER	65DF, Rain, 10-15MPW Wind	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
900	100		10.98							
905	100	500	11.42	13.11	7.16	261	1.03	5.1	9.66	
910	100	1000	11.65	12.45	7.11	265	1.04	4.5	9.77	
915	100	1500	12.06	12.35	7.08	266	1.04	3.9	9.62	
920	100	2000	12.41	12.19	7.02	270	1.04	1.4	9.59	
925	100	2500	12.78	12.25	7.07	269	1.04	1.5	9.58	
930	100	3000	13.08	12.24	7.05	270	1.04	0.8	9.35	
935	100	3500	13.30	12.10	7.02	272	1.02	1.1	9.54	
940	100	4000	13.52	11.24	7.03	276	0.98	0.2	12.04	
945	100	4500	13.83	10.84	6.98	279	1.00	0.0	11.45	
950	100	5000	14.01	11.10	7.14	271	1.01	0.0	10.68	Adjusted Sample Cell
1000	100	5500	14.3	11.34	7.31	260	1.04	0.3	10.76	
1005	100	6000	14.62	11.33	7.31	260	1.05	0.3	10.79	
1010	100	6500	14.88	11.35	7.31	261	1.05	0.1	10.71	Sample Start
1105	100		16.57							Sample End
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

Limits

LOW FLOW SAMPLING FORM

DATE	4/16/2025	WELL ID	MW-21	SAMPLE DATE - TIME	4/16/25 1300
SITE	Muscatine Power & Water	DTW	10.80	NOTE	
PROJECT #		WELL DEPTH	22.15		
WEATHER		PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1215	100		10.80							
1220	100	500	10.98	15.15	7.38	170	0.752	10.3	7.23	
1225	100	1000	11.09	14.00	6.76	181	0.873	7.8	4.20	
1230	100	1500	11.15	13.02	6.72	189	0.845	1.3	4.16	
1235	100	2000	11.19	12.61	6.70	193	0.850	0.4	4.30	
1240	100	2500	11.19	12.25	6.70	197	0.847	1.7	4.27	
1245	100	3000	11.22	12.24	6.68	202	0.852	0.5	4.24	
1250	100	3500	11.19	12.39	6.68	205	0.85	1.3	4.26	
1255	100	4000	11.22	12.37	6.68	208	0.853	1.4	4.28	
1300	100	4500	11.22	12.42	6.67	209	0.853	1.2	4.25	Sample Start
1330	100		11.15							Sample End

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

LOW FLOW SAMPLING FORM

DATE	4/15/2025	WELL ID	MW-22	SAMPLE DATE - TIME	4/15/2025 0835
SITE	Muscatine Power & Water	DTW	17.68	NOTE	QC1 Labeled 1200 4/15
PROJECT #	Spring 2025	WELL DEPTH	Bottom 43.28		
WEATHER	Sunny, Windy W 25-30MPH, 45DF	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
740	100		17.68							
745	100	500	19.90	10.31	6.61	309	0.714	1.3	4.58	
750	100	1000	21.31	10.32	6.77	298	0.709	1.0	5.68	
755	100	1500	22.54	10.48	6.84	293	0.708	1.0	4.40	
800	100	2000	23.74	10.51	6.89	278	0.706	1.6	4.32	
805	100	2500	24.33	10.36	6.95	264	0.704	2.0	4.21	
810	100	3000	24.62	10.46	6.98	254	0.704	1.8	4.17	
815	100	3500	24.90	10.22	7.00	245	0.704	2.6	4.22	
820	100	4000	25.33	10.10	7.04	233	0.704	2.1	4.16	
825	100	4500	26.00	10.15	7.06	222	0.707	1.3	4.11	
830	100	5000	26.38	10.75	7.08	212	0.702	1.5	4.08	
835	100	5500	26.90	10.15	7.07	213	0.706	1.5	4.08	Sample Start
										0910 End + QC1 Start
			31.09							0950 End
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	4/15/2025	WELL ID	MW-23	SAMPLE DATE - TIME	4/15/25 1045
SITE	Muscatine Power & Water	DTW	5.57	NOTE	
PROJECT #	Spring 2025	WELL DEPTH	Bottom 19.19		
WEATHER	Cloudy, 52DF, Windy W 25-30MPH	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1015	100		5.57							
1020	100	500	6.67	9.20	7.36	239	0.546	2.4	2.71	
1025	100	1000	7.23	9.11	7.26	242	0.546	0.3	2.41	
1030	100	1500	7.90	9.12	7.21	244	0.546	16.5	2.37	
1035	100	2000	8.50	8.94	7.12	249	0.547	44.0	2.26	
1040	100	2500	8.63	9.06	7.12	249	0.548	44.5	2.25	
1045	100	3000	8.65	9.26	7.02	254	0.550	46.2	2.14	Sample Start 1045
										Lots of dust from wind
										and gravel road
1115			10.96							Sample End 1115

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*Limits*
									or +/-0.2 mg	

LOW FLOW SAMPLING FORM

DATE	4/16/2025	WELL ID	MW-24	SAMPLE DATE - TIME	4/16/25 - 1015
SITE	Muscatine Power & Water	DTW	14.25	NOTE	
PROJECT #		WELL DEPTH	22.55		
WEATHER		PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
930	100		14.25							
935	100	500	14.68	10.12	7.16	155	0.633	3.1	2.59	
940	100	1000	14.83	10.35	7.20	150	0.630	1.6	1.99	
945	100	1500	14.90	10.48	7.24	149	0.634	1.3	1.86	
950	100	2000	14.88	10.58	7.27	148	0.641	0.9	1.65	Changed silicone tube
955	100	2500	14.71	10.85	7.44	159	0.646	2.0	3.50	
1000	100	3000	14.84	10.93	7.34	160	0.642	1.6	2.93	
1005	100	3500	14.95	11.10	7.30	162	0.637	1.4	1.74	
1010	100	4000	14.98	11.18	7.29	163	0.637	1.1	1.71	
1015	100	4500	15.02	11.38	7.28	164	0.638	1.1	1.67	Sample Start
1020	100		15.05							Sample End
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	4/16/2025	WELL ID	MW-26	SAMPLE DATE - TIME	4/16/25 - 1410
SITE	Muscatine Power & Water	DTW	20.32	NOTE	
PROJECT #		WELL DEPTH	Bottom 37.93		
WEATHER		PUMP TYPE		DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1345	100		20.32							
1350	100	500	21.60	17.18	7.60	193	0.928	1.1	1.85	
1355	100	1000	22.16	17.29	7.69	189	0.938	0.5	1.62	
1400	100	1500	22.43	17.36	7.62	187	0.948	0.4	1.39	
1405	100	2000	22.66	17.50	7.63	184	0.941	0.4	1.25	
1410	100	2500	22.90	17.56	7.63	183	0.939	0.4	1.21	Sample Start
1420			23.24							Sample End

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*Limits*
									or +/-0.2 mg	

LOW FLOW SAMPLING FORM

DATE	4/16/2025	WELL ID	MW-27	SAMPLE DATE - TIME	4/16/25 - 1440
SITE	Muscatine Power & Water	DTW	13.98	NOTE	
PROJECT #		WELL DEPTH	Bottom 19.47		
WEATHER		PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1420	100		13.98							
1425	100	500	14.45	18.45	7.22	209	0.296	1.0	4.01	
1430	100	1000	15.24	18.87	6.44	224	0.280	0.2	3.50	
1435	100	1500	15.74	18.17	6.33	225	0.271	0.5	3.69	
1440	100	2000	16.11	12.96	6.31	233	0.271	0.4	3.69	Sample Start
			16.53							Sample End
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*Limits*
									or +/-0.2 mg	

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	4/14/2025	WELL ID		SAMPLE DATE - TIME	
SITE	Muscatine Power & Water	DTW		NOTE	
PROJECT #		WELL DEP			
WEATHER		PUMP TYP	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
SW22	1:55			14.51	6.90	237	0.471	0.3	14.45	3" deep / 3' wide / 1ft/min
SW25	14:05			10.59	6.87	180	1.030	0.0	7.32	6-7" in pipe
SW24	14:30			10.66	7.75	204	1.410	0.9	8.91	1gal/min
SW23	14:45			15.11	8.12	199	0.783	2.0	11.13	4" deep / 6' wide / 6ft/min
SW28	15:00			15.87	8.46	192	0.511	2.7	11.92	100gal/min
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*Limits*
									or +/-0.2 mg	

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

Site Name Muscatine P & W

Date April 18, 2025

Weather Sunny , 70DF, Calm

Measured By Sam Bennett/Neil Hoskins

Well #	TOC Elevation	Water Level from TOC (in feet)	Measured to Bottom	Well Depth	Water Level Elevation (in feet)	Well condition / Notes
MW-4B	715.87	7.70	27.80		708.17	Well Replaced due to damage
MW-5B	709.10	1.71	24.88		707.39	- - -
MW-6A	708.92	2.46	25.19		706.46	- - -
MW-08	747.36	15.54	43.16		731.82	- - -
MW-10	718.51	3.70	19.93		714.81	- - -
MW-14A	729.00	12.31	20.65		716.69	- - -
MW-15A	729.99	10.98	20.53		719.01	
MW-21	725.75	10.80	22.15		714.95	- - -
MW-22	744.27	17.68	43.28		726.59	
MW-23	726.90	5.57	19.19		721.33	
MW-24	735.32	14.25	22.65		721.07	
MW-26	731.08	20.32	37.93		710.76	
MW-27	730.26	13.98	19.42		716.28	
MW-09	- - -	22.10	- - -		#VALUE!	- - -
MW-11	- - -	2.89	- - -		#VALUE!	- - -
MW-12	- - -	2.27	- - -		#VALUE!	- - -
LPZ-05	- - -	Dry			#VALUE!	

LOW FLOW SAMPLING FORM

DATE	9/10/2025	WELL ID	MW-4B	SAMPLE DATE - TIME	9/10/25 - 0945
SITE	Muscatine Power & Water	DTW	7.18	NOTE	
PROJECT #	Fall 2025	WELL DEPTH	27.80		
WEATHER	60 deg, Clear, Calm	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
910	100		7.18							
915	100	500	7.98	18.36	7.60	52	0.722	0.2	0.64	
920	100	1000	8.14	17.75	7.54	-8	0.724	0.0	0.02	
925	100	1500	8.52	17.12	7.52	-44	0.728	0.0	0.00	
930	100	2000	8.71	16.97	7.52	-57	0.728	0.0	0.00	
935	100	2500	8.77	16.91	7.54	-67	0.729	0.0	0.00	
940	100	3000	9.00	16.61	7.52	-75	0.730	0.0	0.00	
945	100	3500	9.00	16.46	7.51	-77	0.737	0.0	0.00	Sample Start
1015			9.00							Sample End
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*Limits*
									or +/-0.2 mg	

Preservative	# of Containers	
HCl		
HNO_3		
None		

LOW FLOW SAMPLING FORM

DATE	9/10/2025	WELL ID	MW-5B	SAMPLE DATE - TIME	9/10/25 -1225
SITE	Muscatine Power & Water	DTW	1.13	NOTE	
PROJECT #	Fall 2025	WELL DEPTH	24.98		
WEATHER	60 deg, Clear, Calm	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1200	100		1.13							
1205	100	500	1.71	23.36	7.46	-59	0.804	0.3	0.00	
1210	100	1000	1.83	21.97	7.39	-66	0.817	1.3	0.00	
1215	100	1500	1.93	21.41	7.36	-68	0.827	8.1	0.00	
1220	100	2000	1.98	21.48	7.34	-68	0.831	8.9	0.00	
1225	100	2500	2.00	21.60	7.30	-69	0.830	9.0	0.00	Sample Start
1250			2.04							Sample End

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

LOW FLOW SAMPLING FORM

DATE	9/10/2025	WELL ID	MW-6A	SAMPLE DATE - TIME	1040
SITE	Muscatine Power & Water	DTW	1.97	NOTE	
PROJECT #	Fall 2025	WELL DEPTH	25.08		
WEATHER	60 deg, Clear, Calm	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1020	100		1.97							
1025	100	500	2.37	18.73	7.43	-95	0.710	1.3	0.00	
1030	100	1000	2.50	18.62	7.41	-101	0.701	1.6	0.00	
1035	100	1500	2.52	18.67	7.41	-106	0.701	1.8	0.00	
1040	100	2000	2.52	18.94	7.41	-110	0.695	1.8	0.00	Sample Start
			2.50							End 1118
			25.08 Bottom							
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 m*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	9/9/2025	WELL ID	MW-08	SAMPLE DATE - TIME	9/9/25 - 0920
SITE	Muscatine Power & Water	DTW	15.17	NOTE	DUP-2 marked 1200
PROJECT #	Fall 2025	WELL DEPTH	43.03		
WEATHER	Clear, 78 deg, 10-15 mph SW wind	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
850	100		15.17							
905	100	500	16.83	15.31	7.08	-38	0.709	2.6	1.45	
910	100	1000	17.40	15.26	6.97	-42	0.703	3.1	0.17	
915	100	1500	17.87	15.72	6.94	-47	0.698	2.8	0	
920	100	2000	18.22	15.21	6.93	-52	0.696	3	0	Sample Start
										Sample End
										Dup-2 Start
1030			21.34							Dup-2 End
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*Limits*
									or +/-0.2 mg	

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	9/8/2025	WELL ID	MW-10	SAMPLE DATE - TIME	9/8/25 - 1510
SITE	Muscatine Power & Water	DTW	3.91	NOTE	
PROJECT #	Fall 2025	WELL DEPTH	19.80		
WEATHER	Clear, 78 deg, 10-15 mph SW wind	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1435	100		3.91							
1440	100	500	3.94	29.13	7.32	-111	0.542	0.00	0.63	
1445	100	1000	3.95	28.06	7.38	-124	0.544	0.20	0.05	
1450	100	1500	3.98	27.66	7.37	-121	0.550	4.70	0.00	
1455	100	2000	3.98	27.27	7.31	-112	0.565	6.30	0.00	
1500	100	2500	3.97	27.02	7.27	-106	0.573	7.60	0.00	
1505	100	3000	3.99	26.91	7.24	-104	0.574	7.90	0.00	
1510	100	3500	4.03	26.85	7.22	-100	0.585	8.01	0.00	Start 1510
			3.98							End 1536
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	9/9/2025	WELL ID	MW-14A	SAMPLE DATE - TIME	9/9/25 - 1355
SITE	Muscatine Power & Water	DTW	10.54	NOTE	
PROJECT #	Fall 2025	WELL DEPTH	20.48		
WEATHER	75 deg, 10mph S wind, Overcast	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1320	100		10.54							
1325	100	500	11.17	24.62	6.88	180	1.88	18.5	6.45	
1330	100	1000	11.56	22.09	6.84	185	1.99	1.6	4.55	
1335	100	1500	11.72	21.80	6.83	188	2.00	1.5	4.29	
1340	100	2000	11.94	21.47	6.83	190	2.01	1.6	4.2	
1345	100	2500	12.20	21.31	6.83	191	2.02	2.3	4.07	
1350	100	3000	12.40	21.21	6.82	192	2.03	2.3	4.04	
1355	100	3500	12.96	21.22	6.82	193	2.03	2.1	3.99	Sample Start
1435			13.35							Sample End
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

Preservative	# of Containers	DUP-1
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	9/10/2025	WELL ID	MW-15A	SAMPLE DATE - TIME	9/10/25 - 0825
SITE	Muscatine Power & Water	DTW	9.17	NOTE	
PROJECT #	Fall 2025	WELL DEPTH	20.55		
WEATHER	60 deg, Clear, Calm	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
740	100		9.17							
745	100	500	10.11	17.41	6.60	304	1.06	1.6	5.81	
750	100	1000	10.20	16.22	7.04	284	1.06	0.0	5.72	
755	100	1500	10.72	16.22	7.16	279	1.02	1.1	5.59	
800	100	2000	10.95	16.30	7.21	276	0.987	0.7	5.02	
805	100	2500	11.32	16.48	7.25	273	0.931	0.7	4.29	
810	100	3000	11.60	16.65	7.29	271	0.838	0.2	4.96	
815	100	3500	11.93	16.84	7.35	268	0.777	0.0	4.80	
820	100	4000	12.14	16.94	7.38	266	0.757	0.0	4.77	
825	100	4500	12.42	17.05	7.41	265	0.747	0.0	4.72	Sample Start
850			13.9							Sample End
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

Limits

LOW FLOW SAMPLING FORM

DATE	9/9/2025	WELL ID	MW-21	SAMPLE DATE - TIME	9/9/25 - 1240
SITE	Muscatine Power & Water	DTW	8.62	NOTE	
PROJECT #	Fall 2025	WELL DEPTH	22.16 Bottom		
WEATHER	75 deg, SW Wind 5-10mpw, Mostly Clear	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
	100		8.62							
1230	100	500	8.96	21.27	6.47	1.30	0.620	0.0	0.00	
1235	100	1000	9.00	20.21	6.40	1.28	0.617	0.0	0.00	
1240	100	1500	9.01	19.82	6.39	1.27	0.619	0.0	0.00	Sample Start
			9.03							1304 End
										2216 Bottom
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	9/8/2025	WELL ID	MW-22	SAMPLE DATE - TIME	9/8/25 - 1145
SITE	Muscatine Power & Water	DTW	15.61	NOTE	DUP-1 marked 1200
PROJECT #	Fall 2025	WELL DEPTH	43.17		
WEATHER	67 deg; 11mph S wind, Partly Sunny	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1035	100		15.61							
1040	100	500	16.58	18.41	6.12	269	0.690	0.0	0.08	
1045	100	1000	17.63	17.45	6.70	180	0.650	0.0	0.00	
1050	100	1500	18.68	17.25	6.89	153	0.644	2.5	4.32	
1055	100	2000	20.15	18.20	7.00	132	0.623	4.7	3.78	
1100	100	2500	21.02	18.58	7.05	116	0.617	5.8	4.50	
1105	100	3000	21.70	19.10	7.08	106	0.646	5.9	5.14	
1110	100	3500	22.23	19.13	7.16	81	0.613	3.1	7.31	
1115	100	4000	23.31	17.46	7.19	59	0.630	3.0	5.98	
1120	100	4500	24.15	18.54	7.22	52	0.614	3.2	5.38	
1125	100	5000	24.27	18.98	7.20	53	0.634	3.7	4.44	
1130	100	5500	24.82	18.71	7.23	43	0.645	4.5	0.00	
1135	100	6000	25.62	19.23	7.26	30	0.618	4.6	0.00	
1140	100	6500	26.18	19.28	7.26	25	0.616	4.8	0.00	
1145	100	7000	26.78	19.32	7.27	21	0.613	4.9	0.00	Sample Start
			28.92							1230 End
										1230 DUP-1 Start
			29.02							1315 DUP-1 End
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*Limits*
									or +/-0.2 mg	

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	9/8/2025	WELL ID	MW-23	SAMPLE DATE - TIME	9/8/2025 - 1350
SITE	Muscatine Power & Water	DTW	5.90	NOTE	
PROJECT #	Fall 2025	WELL DEPTH	19.08		
WEATHER	Clear, 72 deg.	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1320	100		5.90							
1325	100	500	6.82	28.96	7.40	167	0.457	0.0	2.72	
1330	100	1000	7.23	27.78	7.36	174	0.458	0.0	2.37	
1335	100	1500	7.64	27.61	7.35	178	0.451	3.1	1.97	
1340	100	2000	8.06	27.05	7.28	182	0.454	7.9	1.61	
1345	100	2500	8.33	26.65	7.24	183	0.457	8.5	1.52	
1350	100	3000	8.64	26.41	7.21	185	0.456	8.7	1.41	
			10.30							End 1420

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

LOW FLOW SAMPLING FORM

DATE	9/9/2025	WELL ID	MW-24	SAMPLE DATE - TIME	9/9/25 - 0825
SITE	Muscatine Power & Water	DTW	14.17	NOTE	
PROJECT #	Fall 2025	WELL DEPTH	22.61		
WEATHER	Sunny, Calm, 70 deg.	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
800	100		14.17							
805	100	500	14.47	18.13	6.77	292	0.672	0.0	2.05	
810	100	1000	14.82	17.90	6.81	267	0.646	0.0	0.99	
815	100	1500	15.01	16.91	6.79	242	0.611	0.0	0.30	
820	100	2000	15.23	16.75	6.86	240	0.609	0.0	0.24	
825	100	2500	15.40	16.69	6.87	240	0.609	0.0	0.22	Sample Start
835			15.51							Sample End

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

LOW FLOW SAMPLING FORM

DATE	9/9/2025	WELL ID	MW-26	SAMPLE DATE - TIME	9/9/25 - 1105
SITE	Muscatine Power & Water	DTW	18.44	NOTE	
PROJECT #	Fall 2025	WELL DEPTH	37.97		
WEATHER	Sunny, Calm, 70 deg.	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1045	100		18.44							
1050	100	500	19.37	16.40	7.10	-42	0.827	2.0	0.00	
1055	100	1000	20.82	18.37	7.35	-33	0.891	0.8	0.00	
1100	100	1500	20.85	18.68	7.41	-30	0.893	0.6	0.00	
1105	100	2000	21.22	19.17	7.42	-26	0.891	0.6	0.00	Sample Start
			21.45							Sample End
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%* or *+/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	9/9/2025	WELL ID	MW-27	SAMPLE DATE - TIME	9/9/25 - 1205
SITE	Muscatine Power & Water	DTW	12.81	NOTE	
PROJECT #	Fall 2025	WELL DEPTH	19.33		
WEATHER	Sunny, Calm, 70 deg.	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
1140	100	500	12.81							
1145	100	1000	13.46	21.71	7.08	74	0.690	0.0	0.00	
1150	100	1500	13.67	22.45	6.71	139	0.523	0.0	0.00	
1155	100	2000	13.81	21.58	6.61	135	0.525	0.5	0.00	
1200	100	2500	13.86	21.37	6.57	133	0.522	0.6	0.00	
1205	100	3000	13.95	21.41	6.53	132	0.515	0.6	0.00	Sample Start
1215	100		14.00							Sample End
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%* or *+/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

LOW FLOW SAMPLING FORM

DATE	9/10/2025	WELL ID		SAMPLE DATE - TIME	
SITE	Muscatine Power & Water	DTW		NOTE	
PROJECT	Fall 2025	WELL DEPTH			
WEATHER		PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	

TIME	PURGE RATE(ml)	VOL REMOVED(ml)	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
	SW22									Dry
	SW23									Inaccessible
1300	SW24			17.94	7.50	-9	1.67	0.0	14.29	
1325	SW25			27.03	7.56	98	1.07	0.0	1.09	
1345	SW26			26.75	7.70	98	1.20	9.5	14.44	
0.5-5.0 m	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%* or *+/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3		
NaOH		
None		

Site Name Muscatine P & W

Date April 18, 2025

Weather Sunny , 70DF, Calm

Measured By Sam Bennett/Neil Hoskins

Well #	TOC Elevation	Water Level from TOC (in feet)	Measured to Bottom	Well Depth	Water Level Elevation (in feet)	Well condition / Notes
MW-4B	715.87	7.70	27.80		708.17	Well Replaced due to damage
MW-5B	709.10	1.71	24.88		707.39	- - -
MW-6A	708.92	2.46	25.19		706.46	- - -
MW-08	747.36	15.54	43.16		731.82	- - -
MW-10	718.51	3.70	19.93		714.81	- - -
MW-14A	729.00	12.31	20.65		716.69	- - -
MW-15A	729.99	10.98	20.53		719.01	
MW-21	725.75	10.80	22.15		714.95	- - -
MW-22	744.27	17.68	43.28		726.59	
MW-23	726.90	5.57	19.19		721.33	
MW-24	735.32	14.25	22.65		721.07	
MW-26	731.08	20.32	37.93		710.76	
MW-27	730.26	13.98	19.42		716.28	
MW-09	- - -	22.10	- - -		#VALUE!	- - -
MW-11	- - -	2.89	- - -		#VALUE!	- - -
MW-12	- - -	2.27	- - -		#VALUE!	- - -
LPZ-05	- - -	Dry			#VALUE!	

Appendix B

Analytical Reports

eurofins | Environment Testing

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Sam Bennett
Muscatine Power & Water
1700 Dick Drake Way
PO BOX 899
Muscatine, Iowa 52761

Generated 4/30/2025 5:23:00 PM

JOB DESCRIPTION

MPW CCR - Landfill

JOB NUMBER

310-304575-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

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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4/30/2025 5:23:00 PM

Authorized for release by
Bob Michels, Project Manager I
Bob.Michels@et.eurofinsus.com
(319)277-2401

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Job ID: 310-304575-1 — Eurofins Cedar Falls

Job Narrative
310-304575-1

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 4/18/2025 8:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.3°C and 0.7°C.

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.

Sample Summary

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-304575-1	MW-8	Ground Water	04/16/25 11:15	04/18/25 08:40
310-304575-2	MW-10	Ground Water	04/16/25 08:40	04/18/25 08:40
310-304575-3	MW-21	Ground Water	04/16/25 13:00	04/18/25 08:40
310-304575-4	MW-22	Ground Water	04/15/25 08:35	04/18/25 08:40
310-304575-5	MW-23	Ground Water	04/15/25 10:45	04/18/25 08:40
310-304575-6	MW-24	Ground Water	04/16/25 10:15	04/18/25 08:40
310-304575-7	MW-26	Ground Water	04/16/25 14:10	04/18/25 08:40
310-304575-8	MW-27	Ground Water	04/16/25 14:40	04/18/25 08:40
310-304575-9	QC1	Ground Water	04/15/25 12:00	04/18/25 08:40

Detection Summary

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Client Sample ID: MW-8 — Lab Sample ID: 310-304575-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00450		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0867		0.00200		mg/L	1		6020B	Total/NA
Calcium	84.1		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00163		0.000500		mg/L	1		6020B	Total/NA
Iron	1.44		0.100		mg/L	1		6020B	Total/NA
Magnesium	34.4		0.500		mg/L	1		6020B	Total/NA
Manganese	0.434		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.159		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.312		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	63.5		25.0		mg/L	5		D516-16	Total/NA
Total Suspended Solids	2.88		1.88		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	390		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	18.6		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.5	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 310-304575-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.190		0.00200		mg/L	1		6020B	Total/NA
Calcium	99.6		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00154		0.000500		mg/L	1		6020B	Total/NA
Iron	1.40		0.100		mg/L	1		6020B	Total/NA
Magnesium	46.1		0.500		mg/L	1		6020B	Total/NA
Manganese	0.285		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.169		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.281		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	84.7		25.0		mg/L	5		D516-16	Total/NA
Total Suspended Solids	4.00		3.75		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	486		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	12.8		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.2	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-21 — Lab Sample ID: 310-304575-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0460		0.00200		mg/L	1		6020B	Total/NA
Boron	2.64		0.100		mg/L	1		6020B	Total/NA
Calcium	87.4		0.500		mg/L	1		6020B	Total/NA
Chromium	0.00647		0.00500		mg/L	1		6020B	Total/NA
Lithium	0.0185		0.0100		mg/L	1		6020B	Total/NA
Magnesium	40.5		0.500		mg/L	1		6020B	Total/NA
Selenium	0.00832		0.00500		mg/L	1		6020B	Total/NA
Strontium	0.173		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.154		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	230		50.0		mg/L	10		D516-16	Total/NA
Total Suspended Solids	2.13		1.88		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	606		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	10.9		2.00		mg/L	1		SM 4500 Cl- E	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.

Detection Summary

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Client Sample ID: MW-22 — Lab Sample ID: 310-304575-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.139		0.0500		mg/L	1		6020B	Total/NA
Arsenic	0.00671		0.00200		mg/L	1		6020B	Total/NA
Barium	0.247		0.00200		mg/L	1		6020B	Total/NA
Calcium	74.5		0.500		mg/L	1		6020B	Total/NA
Iron	0.215		0.100		mg/L	1		6020B	Total/NA
Magnesium	30.7		0.500		mg/L	1		6020B	Total/NA
Manganese	0.382		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00415		0.00200		mg/L	1		6020B	Total/NA
Strontium	0.124		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.268		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	143		50.0		mg/L	10		D516-16	Total/NA
Total Suspended Solids	6.00		1.88		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	430		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	16.1		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.4	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-23 — Lab Sample ID: 310-304575-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	2.76		0.0500		mg/L	1		6020B	Total/NA
Barium	0.0670		0.00200		mg/L	1		6020B	Total/NA
Calcium	56.0		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000879		0.000500		mg/L	1		6020B	Total/NA
Iron	2.53		0.100		mg/L	1		6020B	Total/NA
Lead	0.00115		0.000500		mg/L	1		6020B	Total/NA
Magnesium	27.1		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0499		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.0665		0.00100		mg/L	1		6020B	Total/NA
Vanadium	0.00547		0.00500		mg/L	1		6020B	Total/NA
Fluoride	0.236		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	23.4		5.00		mg/L	1		D516-16	Total/NA
Total Suspended Solids	73.5		7.50		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	298		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	25.1		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.4	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-24 — Lab Sample ID: 310-304575-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0973		0.00200		mg/L	1		6020B	Total/NA
Calcium	71.6		0.500		mg/L	1		6020B	Total/NA
Magnesium	32.7		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0166		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.0806		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.220		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	40.5		25.0		mg/L	5		D516-16	Total/NA
Chloride	23.6		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Client Sample ID: MW-26 — Lab Sample ID: 310-304575-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.0503		0.0500		mg/L	1		6020B	Total/NA
Barium	0.0617		0.00200		mg/L	1		6020B	Total/NA
Boron	3.40		0.100		mg/L	1		6020B	Total/NA
Calcium	114		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0107		0.0100		mg/L	1		6020B	Total/NA
Magnesium	43.3		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0423		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.119		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.181		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	269		50.0		mg/L	10		D516-16	Total/NA
Chloride	17.2		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.6	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-27 — Lab Sample ID: 310-304575-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	2.75		0.0500		mg/L	1		6020B	Total/NA
Barium	0.0607		0.00200		mg/L	1		6020B	Total/NA
Boron	0.244		0.100		mg/L	1		6020B	Total/NA
Calcium	26.4		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000855		0.000500		mg/L	1		6020B	Total/NA
Iron	2.37		0.100		mg/L	1		6020B	Total/NA
Lead	0.00108		0.000500		mg/L	1		6020B	Total/NA
Magnesium	13.0		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0940		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.0670		0.00100		mg/L	1		6020B	Total/NA
Vanadium	0.00613		0.00500		mg/L	1		6020B	Total/NA
Sulfate	11.4		5.00		mg/L	1		D516-16	Total/NA
Chloride	23.0		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	6.4	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: QC1 — Lab Sample ID: 310-304575-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.106		0.0500		mg/L	1		6020B	Total/NA
Arsenic	0.0123		0.00200		mg/L	1		6020B	Total/NA
Barium	0.296		0.00200		mg/L	1		6020B	Total/NA
Calcium	78.8		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000772		0.000500		mg/L	1		6020B	Total/NA
Iron	0.544		0.100		mg/L	1		6020B	Total/NA
Magnesium	32.6		0.500		mg/L	1		6020B	Total/NA
Manganese	0.621		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00508		0.00200		mg/L	1		6020B	Total/NA
Strontium	0.110		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.313		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	161		50.0		mg/L	10		D516-16	Total/NA
Total Suspended Solids	4.13		1.88		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	458		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	14.7		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.8	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Client Sample ID: MW-8

Date Collected: 04/16/25 11:15
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-1

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/22/25 10:30	04/22/25 18:38	1
Antimony	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:38	1
Arsenic	**0.00450**		0.00200		mg/L		04/22/25 10:30	04/22/25 18:38	1
Barium	**0.0867**		0.00200		mg/L		04/22/25 10:30	04/22/25 18:38	1
Beryllium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:38	1
Boron	<0.100		0.100		mg/L		04/22/25 10:30	04/22/25 18:38	1
Cadmium	<0.000200		0.000200		mg/L		04/22/25 10:30	04/22/25 18:38	1
Calcium	**84.1**		0.500		mg/L		04/22/25 10:30	04/22/25 18:38	1
Chromium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:38	1
Cobalt	**0.00163**		0.000500		mg/L		04/22/25 10:30	04/22/25 18:38	1
Copper	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:38	1
Iron	**1.44**		0.100		mg/L		04/22/25 10:30	04/22/25 18:38	1
Lead	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 18:38	1
Lithium	<0.0100		0.0100		mg/L		04/22/25 10:30	04/22/25 18:38	1
Magnesium	**34.4**		0.500		mg/L		04/22/25 10:30	04/22/25 18:38	1
Manganese	**0.434**		0.0100		mg/L		04/22/25 10:30	04/22/25 18:38	1
Molybdenum	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:38	1
Nickel	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:38	1
Selenium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:38	1
Strontium	**0.159**		0.00100		mg/L		04/22/25 10:30	04/22/25 18:38	1
Thallium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:38	1
Vanadium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:38	1
Zinc	<0.0200		0.0200		mg/L		04/22/25 10:30	04/22/25 18:38	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/24/25 12:56	04/25/25 11:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.312**		0.100		mg/L			04/22/25 12:12	1
Sulfate (ASTM D516-16)	**63.5**		25.0		mg/L			04/29/25 13:27	5
Total Suspended Solids (USGS I-3765-85)	**2.88**		1.88		mg/L			04/21/25 15:26	1
Total Dissolved Solids (SM 2540C)	**390**		50.0		mg/L			04/21/25 19:11	1
Chloride (SM 4500 Cl- E)	**18.6**		2.00		mg/L			04/23/25 15:39	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.5**	**HF**	1.0		SU			04/18/25 10:16	1

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Client Sample ID: MW-10

Date Collected: 04/16/25 08:40
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-2

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/22/25 10:30	04/22/25 18:55	1
Antimony	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:55	1
Arsenic	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:55	1
Barium	**0.190**		0.00200		mg/L		04/22/25 10:30	04/22/25 18:55	1
Beryllium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:55	1
Boron	<0.100		0.100		mg/L		04/22/25 10:30	04/22/25 18:55	1
Cadmium	<0.000200		0.000200		mg/L		04/22/25 10:30	04/22/25 18:55	1
Calcium	**99.6**		0.500		mg/L		04/22/25 10:30	04/22/25 18:55	1
Chromium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:55	1
Cobalt	**0.00154**		0.000500		mg/L		04/22/25 10:30	04/22/25 18:55	1
Copper	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:55	1
Iron	**1.40**		0.100		mg/L		04/22/25 10:30	04/22/25 18:55	1
Lead	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 18:55	1
Lithium	<0.0100		0.0100		mg/L		04/22/25 10:30	04/22/25 18:55	1
Magnesium	**46.1**		0.500		mg/L		04/22/25 10:30	04/22/25 18:55	1
Manganese	**0.285**		0.0100		mg/L		04/22/25 10:30	04/22/25 18:55	1
Molybdenum	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:55	1
Nickel	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:55	1
Selenium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:55	1
Strontium	**0.169**		0.00100		mg/L		04/22/25 10:30	04/22/25 18:55	1
Thallium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:55	1
Vanadium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:55	1
Zinc	<0.0200		0.0200		mg/L		04/22/25 10:30	04/22/25 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		04/29/25 09:26	04/29/25 14:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.281**		0.100		mg/L			04/22/25 12:15	1
Sulfate (ASTM D516-16)	**84.7**		25.0		mg/L			04/29/25 13:27	5
Total Suspended Solids (USGS I-3765-85)	**4.00**		3.75		mg/L			04/21/25 15:26	1
Total Dissolved Solids (SM 2540C)	**486**		50.0		mg/L			04/21/25 19:11	1
Chloride (SM 4500 Cl- E)	**12.8**		2.00		mg/L			04/23/25 15:40	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.2**	**HF**	1.0		SU			04/18/25 10:17	1

Client Sample ID: MW-21

Date Collected: 04/16/25 13:00
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-3

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/22/25 10:30	04/22/25 18:17	1
Antimony	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:17	1
Arsenic	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:17	1
Barium	**0.0460**		0.00200		mg/L		04/22/25 10:30	04/22/25 18:17	1
Beryllium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:17	1
Boron	**2.64**		0.100		mg/L		04/22/25 10:30	04/22/25 18:17	1
Cadmium	<0.000200		0.000200		mg/L		04/22/25 10:30	04/22/25 18:17	1
Calcium	**87.4**		0.500		mg/L		04/22/25 10:30	04/22/25 18:17	1
Chromium	**0.00647**		0.00500		mg/L		04/22/25 10:30	04/22/25 18:17	1
Cobalt	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 18:17	1
Copper	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:17	1
Iron	<0.100		0.100		mg/L		04/22/25 10:30	04/22/25 18:17	1
Lead	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 18:17	1
Lithium	**0.0185**		0.0100		mg/L		04/22/25 10:30	04/22/25 18:17	1
Magnesium	**40.5**		0.500		mg/L		04/22/25 10:30	04/22/25 18:17	1
Manganese	<0.0100		0.0100		mg/L		04/22/25 10:30	04/22/25 18:17	1
Molybdenum	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:17	1
Nickel	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:17	1
Selenium	**0.00832**		0.00500		mg/L		04/22/25 10:30	04/22/25 18:17	1
Strontium	**0.173**		0.00100		mg/L		04/22/25 10:30	04/22/25 18:17	1
Thallium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:17	1
Vanadium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:17	1
Zinc	<0.0200		0.0200		mg/L		04/22/25 10:30	04/22/25 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		04/29/25 09:26	04/29/25 14:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.154**		0.100		mg/L			04/22/25 12:19	1
Sulfate (ASTM D516-16)	**230**		50.0		mg/L			04/29/25 13:27	10
Total Suspended Solids (USGS I-3765-85)	**2.13**		1.88		mg/L			04/21/25 15:26	1
Total Dissolved Solids (SM 2540C)	**606**		50.0		mg/L			04/21/25 19:11	1
Chloride (SM 4500 Cl- E)	**10.9**		2.00		mg/L			04/23/25 15:40	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**6.9**	**HF**	1.0		SU			04/18/25 10:18	1

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Client Sample ID: MW-22

Date Collected: 04/15/25 08:35
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-4

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.139**		0.0500		mg/L		04/22/25 10:30	04/22/25 18:46	1
Antimony	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:46	1
Arsenic	**0.00671**		0.00200		mg/L		04/22/25 10:30	04/22/25 18:46	1
Barium	**0.247**		0.00200		mg/L		04/22/25 10:30	04/22/25 18:46	1
Beryllium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:46	1
Boron	<0.100		0.100		mg/L		04/22/25 10:30	04/22/25 18:46	1
Cadmium	<0.000200		0.000200		mg/L		04/22/25 10:30	04/22/25 18:46	1
Calcium	**74.5**		0.500		mg/L		04/22/25 10:30	04/22/25 18:46	1
Chromium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:46	1
Cobalt	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 18:46	1
Copper	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:46	1
Iron	**0.215**		0.100		mg/L		04/22/25 10:30	04/22/25 18:46	1
Lead	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 18:46	1
Lithium	<0.0100		0.0100		mg/L		04/22/25 10:30	04/22/25 18:46	1
Magnesium	**30.7**		0.500		mg/L		04/22/25 10:30	04/22/25 18:46	1
Manganese	**0.382**		0.0100		mg/L		04/22/25 10:30	04/22/25 18:46	1
Molybdenum	**0.00415**		0.00200		mg/L		04/22/25 10:30	04/22/25 18:46	1
Nickel	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:46	1
Selenium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:46	1
Strontium	**0.124**		0.00100		mg/L		04/22/25 10:30	04/22/25 18:46	1
Thallium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:46	1
Vanadium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:46	1
Zinc	<0.0200		0.0200		mg/L		04/22/25 10:30	04/22/25 18:46	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/29/25 09:26	04/29/25 14:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.268**		0.100		mg/L			04/22/25 12:22	1
Sulfate (ASTM D516-16)	**143**		50.0		mg/L			04/30/25 11:22	10
Total Suspended Solids (USGS I-3765-85)	**6.00**		1.88		mg/L			04/21/25 14:55	1
Total Dissolved Solids (SM 2540C)	**430**		50.0		mg/L			04/21/25 19:11	1
Chloride (SM 4500 Cl- E)	**16.1**		2.00		mg/L			04/23/25 15:40	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.4**	**HF**	1.0		SU			04/18/25 10:19	1

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Client Sample ID: MW-23

Date Collected: 04/15/25 10:45
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-5

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.76**		0.0500		mg/L		04/22/25 10:30	04/22/25 18:32	1
Antimony	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:32	1
Arsenic	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:32	1
Barium	**0.0670**		0.00200		mg/L		04/22/25 10:30	04/22/25 18:32	1
Beryllium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:32	1
Boron	<0.100		0.100		mg/L		04/22/25 10:30	04/22/25 18:32	1
Cadmium	<0.000200		0.000200		mg/L		04/22/25 10:30	04/22/25 18:32	1
Calcium	**56.0**		0.500		mg/L		04/22/25 10:30	04/22/25 18:32	1
Chromium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:32	1
Cobalt	**0.000879**		0.000500		mg/L		04/22/25 10:30	04/22/25 18:32	1
Copper	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:32	1
Iron	**2.53**		0.100		mg/L		04/22/25 10:30	04/22/25 18:32	1
Lead	**0.00115**		0.000500		mg/L		04/22/25 10:30	04/22/25 18:32	1
Lithium	<0.0100		0.0100		mg/L		04/22/25 10:30	04/22/25 18:32	1
Magnesium	**27.1**		0.500		mg/L		04/22/25 10:30	04/22/25 18:32	1
Manganese	**0.0499**		0.0100		mg/L		04/22/25 10:30	04/22/25 18:32	1
Molybdenum	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:32	1
Nickel	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:32	1
Selenium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:32	1
Strontium	**0.0665**		0.00100		mg/L		04/22/25 10:30	04/22/25 18:32	1
Thallium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:32	1
Vanadium	**0.00547**		0.00500		mg/L		04/22/25 10:30	04/22/25 18:32	1
Zinc	<0.0200		0.0200		mg/L		04/22/25 10:30	04/22/25 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		04/29/25 09:26	04/29/25 14:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.236**		0.100		mg/L			04/22/25 12:25	1
Sulfate (ASTM D516-16)	**23.4**		5.00		mg/L			04/30/25 11:23	1
Total Suspended Solids (USGS I-3765-85)	**73.5**		7.50		mg/L			04/21/25 14:55	1
Total Dissolved Solids (SM 2540C)	**298**		50.0		mg/L			04/21/25 19:11	1
Chloride (SM 4500 Cl- E)	**25.1**		2.00		mg/L			04/23/25 15:41	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.4**	**HF**	1.0		SU			04/18/25 10:20	1

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Client Sample ID: MW-24

Date Collected: 04/16/25 10:15
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-6

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/22/25 10:30	04/22/25 18:52	1
Antimony	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:52	1
Arsenic	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:52	1
Barium	**0.0973**		0.00200		mg/L		04/22/25 10:30	04/22/25 18:52	1
Beryllium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:52	1
Boron	<0.100		0.100		mg/L		04/22/25 10:30	04/22/25 18:52	1
Cadmium	<0.000200		0.000200		mg/L		04/22/25 10:30	04/22/25 18:52	1
Calcium	**71.6**		0.500		mg/L		04/22/25 10:30	04/22/25 18:52	1
Chromium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:52	1
Cobalt	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 18:52	1
Copper	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:52	1
Iron	<0.100		0.100		mg/L		04/22/25 10:30	04/22/25 18:52	1
Lead	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 18:52	1
Lithium	<0.0100		0.0100		mg/L		04/22/25 10:30	04/22/25 18:52	1
Magnesium	**32.7**		0.500		mg/L		04/22/25 10:30	04/22/25 18:52	1
Manganese	**0.0166**		0.0100		mg/L		04/22/25 10:30	04/22/25 18:52	1
Molybdenum	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:52	1
Nickel	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:52	1
Selenium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:52	1
Strontium	**0.0806**		0.00100		mg/L		04/22/25 10:30	04/22/25 18:52	1
Thallium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:52	1
Vanadium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:52	1
Zinc	<0.0200		0.0200		mg/L		04/22/25 10:30	04/22/25 18:52	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/29/25 09:26	04/29/25 14:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.220**		0.100		mg/L			04/22/25 12:28	1
Sulfate (ASTM D516-16)	**40.5**		25.0		mg/L			04/30/25 11:23	5
Chloride (SM 4500 Cl- E)	**23.6**		2.00		mg/L			04/23/25 15:41	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			04/18/25 13:04	1

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Client Sample ID: MW-26

Date Collected: 04/16/25 14:10
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-7

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.0503**		0.0500		mg/L		04/22/25 10:30	04/22/25 18:58	1
Antimony	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:58	1
Arsenic	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:58	1
Barium	**0.0617**		0.00200		mg/L		04/22/25 10:30	04/22/25 18:58	1
Beryllium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:58	1
Boron	**3.40**		0.100		mg/L		04/22/25 10:30	04/22/25 18:58	1
Cadmium	<0.000200		0.000200		mg/L		04/22/25 10:30	04/22/25 18:58	1
Calcium	**114**		0.500		mg/L		04/22/25 10:30	04/22/25 18:58	1
Chromium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:58	1
Cobalt	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 18:58	1
Copper	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:58	1
Iron	<0.100		0.100		mg/L		04/22/25 10:30	04/22/25 18:58	1
Lead	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 18:58	1
Lithium	**0.0107**		0.0100		mg/L		04/22/25 10:30	04/22/25 18:58	1
Magnesium	**43.3**		0.500		mg/L		04/22/25 10:30	04/22/25 18:58	1
Manganese	**0.0423**		0.0100		mg/L		04/22/25 10:30	04/22/25 18:58	1
Molybdenum	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:58	1
Nickel	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:58	1
Selenium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:58	1
Strontium	**0.119**		0.00100		mg/L		04/22/25 10:30	04/22/25 18:58	1
Thallium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:58	1
Vanadium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:58	1
Zinc	<0.0200		0.0200		mg/L		04/22/25 10:30	04/22/25 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		04/29/25 09:26	04/29/25 14:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.181**		0.100		mg/L			04/22/25 12:32	1
Sulfate (ASTM D516-16)	**269**		50.0		mg/L			04/30/25 11:25	10
Chloride (SM 4500 Cl- E)	**17.2**		2.00		mg/L			04/23/25 16:26	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.6**	**HF**	1.0		SU			04/18/25 13:03	1

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Client Sample ID: MW-27

Date Collected: 04/16/25 14:40
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-8

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2.75**		0.0500		mg/L		04/22/25 10:30	04/22/25 19:27	1
Antimony	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 19:27	1
Arsenic	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 19:27	1
Barium	**0.0607**		0.00200		mg/L		04/22/25 10:30	04/22/25 19:27	1
Beryllium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 19:27	1
Boron	**0.244**		0.100		mg/L		04/22/25 10:30	04/22/25 19:27	1
Cadmium	<0.000200		0.000200		mg/L		04/22/25 10:30	04/22/25 19:27	1
Calcium	**26.4**		0.500		mg/L		04/22/25 10:30	04/22/25 19:27	1
Chromium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 19:27	1
Cobalt	**0.000855**		0.000500		mg/L		04/22/25 10:30	04/22/25 19:27	1
Copper	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 19:27	1
Iron	**2.37**		0.100		mg/L		04/22/25 10:30	04/22/25 19:27	1
Lead	**0.00108**		0.000500		mg/L		04/22/25 10:30	04/22/25 19:27	1
Lithium	<0.0100		0.0100		mg/L		04/22/25 10:30	04/22/25 19:27	1
Magnesium	**13.0**		0.500		mg/L		04/22/25 10:30	04/22/25 19:27	1
Manganese	**0.0940**		0.0100		mg/L		04/22/25 10:30	04/22/25 19:27	1
Molybdenum	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 19:27	1
Nickel	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 19:27	1
Selenium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 19:27	1
Strontium	**0.0670**		0.00100		mg/L		04/22/25 10:30	04/22/25 19:27	1
Thallium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 19:27	1
Vanadium	**0.00613**		0.00500		mg/L		04/22/25 10:30	04/22/25 19:27	1
Zinc	<0.0200		0.0200		mg/L		04/22/25 10:30	04/22/25 19:27	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/29/25 09:26	04/29/25 14:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	<0.100		0.100		mg/L			04/22/25 12:35	1
Sulfate (ASTM D516-16)	**11.4**		5.00		mg/L			04/30/25 11:25	1
Chloride (SM 4500 Cl- E)	**23.0**		2.00		mg/L			04/23/25 16:27	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**6.4**	**HF**	1.0		SU			04/18/25 13:01	1

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Client Sample ID: QC1

Date Collected: 04/15/25 12:00
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-9

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.106**		0.0500		mg/L		04/22/25 10:30	04/22/25 19:30	1
Antimony	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 19:30	1
Arsenic	**0.0123**		0.00200		mg/L		04/22/25 10:30	04/22/25 19:30	1
Barium	**0.296**		0.00200		mg/L		04/22/25 10:30	04/22/25 19:30	1
Beryllium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 19:30	1
Boron	<0.100		0.100		mg/L		04/22/25 10:30	04/22/25 19:30	1
Cadmium	<0.000200		0.000200		mg/L		04/22/25 10:30	04/22/25 19:30	1
Calcium	**78.8**		0.500		mg/L		04/22/25 10:30	04/22/25 19:30	1
Chromium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 19:30	1
Cobalt	**0.000772**		0.000500		mg/L		04/22/25 10:30	04/22/25 19:30	1
Copper	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 19:30	1
Iron	**0.544**		0.100		mg/L		04/22/25 10:30	04/22/25 19:30	1
Lead	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 19:30	1
Lithium	<0.0100		0.0100		mg/L		04/22/25 10:30	04/22/25 19:30	1
Magnesium	**32.6**		0.500		mg/L		04/22/25 10:30	04/22/25 19:30	1
Manganese	**0.621**		0.0100		mg/L		04/22/25 10:30	04/22/25 19:30	1
Molybdenum	**0.00508**		0.00200		mg/L		04/22/25 10:30	04/22/25 19:30	1
Nickel	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 19:30	1
Selenium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 19:30	1
Strontium	**0.110**		0.00100		mg/L		04/22/25 10:30	04/22/25 19:30	1
Thallium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 19:30	1
Vanadium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 19:30	1
Zinc	<0.0200		0.0200		mg/L		04/22/25 10:30	04/22/25 19:30	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/29/25 09:26	04/29/25 14:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.313**		0.100		mg/L			04/22/25 12:38	1
Sulfate (ASTM D516-16)	**161**		50.0		mg/L			04/29/25 13:31	10
Total Suspended Solids (USGS I-3765-85)	**4.13**		1.88		mg/L			04/21/25 14:55	1
Total Dissolved Solids (SM 2540C)	**458**		50.0		mg/L			04/21/25 19:11	1
Chloride (SM 4500 Cl- E)	**14.7**		2.00		mg/L			04/23/25 16:27	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.8**	**HF**	1.0		SU			04/18/25 10:14	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.

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.

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

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-452231/1-A
Matrix: Water
Analysis Batch: 452465

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452231

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/22/25 10:30	04/22/25 18:12	1
Antimony	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:12	1
Arsenic	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:12	1
Barium	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:12	1
Beryllium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:12	1
Boron	<0.100		0.100		mg/L		04/22/25 10:30	04/22/25 18:12	1
Cadmium	<0.000200		0.000200		mg/L		04/22/25 10:30	04/22/25 18:12	1
Calcium	<0.500		0.500		mg/L		04/22/25 10:30	04/22/25 18:12	1
Chromium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:12	1
Cobalt	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 18:12	1
Copper	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:12	1
Iron	<0.100		0.100		mg/L		04/22/25 10:30	04/22/25 18:12	1
Lead	<0.000500		0.000500		mg/L		04/22/25 10:30	04/22/25 18:12	1
Lithium	<0.0100		0.0100		mg/L		04/22/25 10:30	04/22/25 18:12	1
Magnesium	<0.500		0.500		mg/L		04/22/25 10:30	04/22/25 18:12	1
Manganese	<0.0100		0.0100		mg/L		04/22/25 10:30	04/22/25 18:12	1
Molybdenum	<0.00200		0.00200		mg/L		04/22/25 10:30	04/22/25 18:12	1
Nickel	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:12	1
Selenium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:12	1
Strontium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:12	1
Thallium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/22/25 18:12	1
Vanadium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/22/25 18:12	1
Zinc	<0.0200		0.0200		mg/L		04/22/25 10:30	04/22/25 18:12	1

Lab Sample ID: LCS 310-452231/2-A
Matrix: Water
Analysis Batch: 452465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452231

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.200	0.2102		mg/L		105	80 - 120
Antimony	0.200	0.2121		mg/L		106	80 - 120
Arsenic	0.200	0.1955		mg/L		98	80 - 120
Barium	0.100	0.1023		mg/L		102	80 - 120
Beryllium	0.100	0.1003		mg/L		100	80 - 120
Boron	0.200	0.2127		mg/L		106	80 - 120
Cadmium	0.100	0.09820		mg/L		98	80 - 120
Calcium	2.00	2.020		mg/L		101	80 - 120
Chromium	0.100	0.1033		mg/L		103	80 - 120
Cobalt	0.100	0.1051		mg/L		105	80 - 120
Copper	0.200	0.2078		mg/L		104	80 - 120
Iron	0.200	0.2004		mg/L		100	80 - 120
Lead	0.200	0.1966		mg/L		98	80 - 120
Lithium	0.200	0.2160		mg/L		108	80 - 120
Magnesium	2.00	1.964		mg/L		98	80 - 120
Manganese	0.100	0.09739		mg/L		97	80 - 120
Molybdenum	0.200	0.1996		mg/L		100	80 - 120
Nickel	0.200	0.2026		mg/L		101	80 - 120
Selenium	0.400	0.3800		mg/L		95	80 - 120
Strontium	0.200	0.1951		mg/L		98	80 - 120

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

Lab Sample ID: LCS 310-452231/2-A
Matrix: Water
Analysis Batch: 452465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452231

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Thallium			0.100	0.09550		mg/L		95	80 - 120		
Vanadium			0.100	0.1016		mg/L		102	80 - 120		
Zinc			0.200	0.1826		mg/L		91	80 - 120		

Lab Sample ID: 310-304575-3 MS
Matrix: Ground Water
Analysis Batch: 452465

Client Sample ID: MW-21
Prep Type: Total/NA
Prep Batch: 452231

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum	<0.0500		0.200	0.2367		mg/L		101	75 - 125		
Antimony	<0.00200		0.200	0.2149		mg/L		107	75 - 125		
Arsenic	<0.00200		0.200	0.2059		mg/L		102	75 - 125		
Barium	0.0460		0.100	0.1497		mg/L		104	75 - 125		
Beryllium	<0.00100		0.100	0.1026		mg/L		103	75 - 125		
Boron	2.64		0.200	2.835	4	mg/L		98	75 - 125		
Cadmium	<0.000200		0.100	0.1021		mg/L		102	75 - 125		
Calcium	87.4		2.00	87.58	4	mg/L		10	75 - 125		
Chromium	0.00647		0.100	0.1093		mg/L		103	75 - 125		
Cobalt	<0.000500		0.100	0.1026		mg/L		103	75 - 125		
Copper	<0.00500		0.200	0.2029		mg/L		101	75 - 125		
Iron	<0.100		0.200	0.2344		mg/L		117	75 - 125		
Lead	<0.000500		0.200	0.2004		mg/L		100	75 - 125		
Lithium	0.0185		0.200	0.2296		mg/L		106	75 - 125		
Magnesium	40.5		2.00	41.21	4	mg/L		37	75 - 125		
Manganese	<0.0100		0.100	0.09636		mg/L		96	75 - 125		
Molybdenum	<0.00200		0.200	0.2070		mg/L		104	75 - 125		
Nickel	<0.00500		0.200	0.1978		mg/L		97	75 - 125		
Selenium	0.00832		0.400	0.3948		mg/L		97	75 - 125		
Strontium	0.173		0.200	0.3662		mg/L		96	75 - 125		
Thallium	<0.00100		0.100	0.08665		mg/L		87	75 - 125		
Vanadium	<0.00500		0.100	0.1040		mg/L		104	75 - 125		
Zinc	<0.0200		0.200	0.1822		mg/L		91	75 - 125		

Lab Sample ID: 310-304575-3 MSD
Matrix: Ground Water
Analysis Batch: 452465

Client Sample ID: MW-21
Prep Type: Total/NA
Prep Batch: 452231

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	<0.0500		0.200	0.2376		mg/L		102	75 - 125	0	20
Antimony	<0.00200		0.200	0.2172		mg/L		109	75 - 125	1	20
Arsenic	<0.00200		0.200	0.2068		mg/L		103	75 - 125	0	20
Barium	0.0460		0.100	0.1520		mg/L		106	75 - 125	2	20
Beryllium	<0.00100		0.100	0.1028		mg/L		103	75 - 125	0	20
Boron	2.64		0.200	2.887	4	mg/L		124	75 - 125	2	20
Cadmium	<0.000200		0.100	0.1027		mg/L		103	75 - 125	1	20
Calcium	87.4		2.00	88.33	4	mg/L		48	75 - 125	1	20
Chromium	0.00647		0.100	0.1102		mg/L		104	75 - 125	1	20
Cobalt	<0.000500		0.100	0.1033		mg/L		103	75 - 125	1	20
Copper	<0.00500		0.200	0.2038		mg/L		102	75 - 125	0	20

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

Lab Sample ID: 310-304575-3 MSD — **Client Sample ID: MW-21**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 452465 — **Prep Batch: 452231**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron	<0.100		0.200	0.2384		mg/L		119	75 - 125	2	20
Lead	<0.000500		0.200	0.2000		mg/L		100	75 - 125	0	20
Lithium	0.0185		0.200	0.2310		mg/L		106	75 - 125	1	20
Magnesium	40.5		2.00	41.63	4	mg/L		58	75 - 125	1	20
Manganese	<0.0100		0.100	0.09686		mg/L		97	75 - 125	1	20
Molybdenum	<0.00200		0.200	0.2097		mg/L		105	75 - 125	1	20
Nickel	<0.00500		0.200	0.1987		mg/L		97	75 - 125	0	20
Selenium	0.00832		0.400	0.4028		mg/L		99	75 - 125	2	20
Strontium	0.173		0.200	0.3713		mg/L		99	75 - 125	1	20
Thallium	<0.00100		0.100	0.09050		mg/L		90	75 - 125	4	20
Vanadium	<0.00500		0.100	0.1041		mg/L		104	75 - 125	0	20
Zinc	<0.0200		0.200	0.1823		mg/L		91	75 - 125	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-452501/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 452733 — **Prep Batch: 452501**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/24/25 12:56	04/25/25 10:40	1

Lab Sample ID: LCS 310-452501/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 452733 — **Prep Batch: 452501**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001718		mg/L		103	80 - 120

Lab Sample ID: MB 310-452863/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453118 — **Prep Batch: 452863**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/29/25 09:26	04/29/25 13:58	1

Lab Sample ID: LCS 310-452863/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453118 — **Prep Batch: 452863**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001674		mg/L		100	80 - 120

Lab Sample ID: 310-304575-2 MS — **Client Sample ID: MW-10**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 453118 — **Prep Batch: 452863**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.000200		0.00167	0.001649		mg/L		99	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 310-304575-2 MSD — **Client Sample ID: MW-10**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 453118 — **Prep Batch: 452863**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.000200		0.00167	0.001742		mg/L		105	80 - 120	6	20

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-452344/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 452344

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.100		0.100		mg/L			04/22/25 11:40	1

Lab Sample ID: LCS 310-452344/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 452344

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	2.168		mg/L		108	90 - 110

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-453112/16 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453112

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			04/29/25 13:21	1

Lab Sample ID: LCS 310-453112/17 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453112

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	8.555		mg/L		86	85 - 115

Lab Sample ID: MB 310-453231/16 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453231

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			04/30/25 11:20	1

Lab Sample ID: LCS 310-453231/17 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453231

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	10.0	9.949		mg/L		99	85 - 115

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-452219/1
Matrix: Water
Analysis Batch: 452219

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00		mg/L			04/21/25 14:55	1

Lab Sample ID: LCS 310-452219/2
Matrix: Water
Analysis Batch: 452219

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	112.0		mg/L		112	81 - 116

Lab Sample ID: MB 310-452222/1
Matrix: Water
Analysis Batch: 452222

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00		mg/L			04/21/25 15:26	1

Lab Sample ID: LCS 310-452222/2
Matrix: Water
Analysis Batch: 452222

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	112.0		mg/L		112	81 - 116

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

Lab Sample ID: MB 310-452247/1
Matrix: Water
Analysis Batch: 452247

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			04/21/25 19:11	1

Lab Sample ID: LCS 310-452247/2
Matrix: Water
Analysis Batch: 452247

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	964.0		mg/L		96	88 - 110

Lab Sample ID: 310-304575-4 DU
Matrix: Ground Water
Analysis Batch: 452247

Client Sample ID: MW-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	430		454.0		mg/L		5	16

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-452503/45
Matrix: Water
Analysis Batch: 452503

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.00		2.00		mg/L			04/23/25 15:34	1

Lab Sample ID: LCS 310-452503/46
Matrix: Water
Analysis Batch: 452503

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	10.39		mg/L		104	90 - 110		

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-451981/22
Matrix: Water
Analysis Batch: 451981

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: 310-304575-8 DU
Matrix: Ground Water
Analysis Batch: 451981

Client Sample ID: MW-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	6.4	HF		6.4		SU				0.2	20

Lab Sample ID: 310-304575-9 DU
Matrix: Ground Water
Analysis Batch: 451981

Client Sample ID: QC1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.8	HF		7.8		SU				0.1	20

Metals

Prep Batch: 452231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-1	MW-8	Total/NA	Ground Water	3005A	
310-304575-2	MW-10	Total/NA	Ground Water	3005A	
310-304575-3	MW-21	Total/NA	Ground Water	3005A	
310-304575-4	MW-22	Total/NA	Ground Water	3005A	
310-304575-5	MW-23	Total/NA	Ground Water	3005A	
310-304575-6	MW-24	Total/NA	Ground Water	3005A	
310-304575-7	MW-26	Total/NA	Ground Water	3005A	
310-304575-8	MW-27	Total/NA	Ground Water	3005A	
310-304575-9	QC1	Total/NA	Ground Water	3005A	
MB 310-452231/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452231/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-304575-3 MS	MW-21	Total/NA	Ground Water	3005A	
310-304575-3 MSD	MW-21	Total/NA	Ground Water	3005A	

Analysis Batch: 452465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-1	MW-8	Total/NA	Ground Water	6020B	452231
310-304575-2	MW-10	Total/NA	Ground Water	6020B	452231
310-304575-3	MW-21	Total/NA	Ground Water	6020B	452231
310-304575-4	MW-22	Total/NA	Ground Water	6020B	452231
310-304575-5	MW-23	Total/NA	Ground Water	6020B	452231
310-304575-6	MW-24	Total/NA	Ground Water	6020B	452231
310-304575-7	MW-26	Total/NA	Ground Water	6020B	452231
310-304575-8	MW-27	Total/NA	Ground Water	6020B	452231
310-304575-9	QC1	Total/NA	Ground Water	6020B	452231
MB 310-452231/1-A	Method Blank	Total/NA	Water	6020B	452231
LCS 310-452231/2-A	Lab Control Sample	Total/NA	Water	6020B	452231
310-304575-3 MS	MW-21	Total/NA	Ground Water	6020B	452231
310-304575-3 MSD	MW-21	Total/NA	Ground Water	6020B	452231

Prep Batch: 452501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-1	MW-8	Total/NA	Ground Water	7470A	
MB 310-452501/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-452501/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 452733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-1	MW-8	Total/NA	Ground Water	7470A	452501
MB 310-452501/1-A	Method Blank	Total/NA	Water	7470A	452501
LCS 310-452501/2-A	Lab Control Sample	Total/NA	Water	7470A	452501

Prep Batch: 452863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-2	MW-10	Total/NA	Ground Water	7470A	
310-304575-3	MW-21	Total/NA	Ground Water	7470A	
310-304575-4	MW-22	Total/NA	Ground Water	7470A	
310-304575-5	MW-23	Total/NA	Ground Water	7470A	
310-304575-6	MW-24	Total/NA	Ground Water	7470A	
310-304575-7	MW-26	Total/NA	Ground Water	7470A	
310-304575-8	MW-27	Total/NA	Ground Water	7470A	

Metals (Continued)

Prep Batch: 452863 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-9	QC1	Total/NA	Ground Water	7470A	
MB 310-452863/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-452863/2-A	Lab Control Sample	Total/NA	Water	7470A	
310-304575-2 MS	MW-10	Total/NA	Ground Water	7470A	
310-304575-2 MSD	MW-10	Total/NA	Ground Water	7470A	

Analysis Batch: 453118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-2	MW-10	Total/NA	Ground Water	7470A	452863
310-304575-3	MW-21	Total/NA	Ground Water	7470A	452863
310-304575-4	MW-22	Total/NA	Ground Water	7470A	452863
310-304575-5	MW-23	Total/NA	Ground Water	7470A	452863
310-304575-6	MW-24	Total/NA	Ground Water	7470A	452863
310-304575-7	MW-26	Total/NA	Ground Water	7470A	452863
310-304575-8	MW-27	Total/NA	Ground Water	7470A	452863
310-304575-9	QC1	Total/NA	Ground Water	7470A	452863
MB 310-452863/1-A	Method Blank	Total/NA	Water	7470A	452863
LCS 310-452863/2-A	Lab Control Sample	Total/NA	Water	7470A	452863
310-304575-2 MS	MW-10	Total/NA	Ground Water	7470A	452863
310-304575-2 MSD	MW-10	Total/NA	Ground Water	7470A	452863

General Chemistry

Analysis Batch: 451981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-1	MW-8	Total/NA	Ground Water	SM 4500 H+ B	
310-304575-2	MW-10	Total/NA	Ground Water	SM 4500 H+ B	
310-304575-3	MW-21	Total/NA	Ground Water	SM 4500 H+ B	
310-304575-4	MW-22	Total/NA	Ground Water	SM 4500 H+ B	
310-304575-5	MW-23	Total/NA	Ground Water	SM 4500 H+ B	
310-304575-6	MW-24	Total/NA	Ground Water	SM 4500 H+ B	
310-304575-7	MW-26	Total/NA	Ground Water	SM 4500 H+ B	
310-304575-8	MW-27	Total/NA	Ground Water	SM 4500 H+ B	
310-304575-9	QC1	Total/NA	Ground Water	SM 4500 H+ B	
LCS 310-451981/22	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-304575-8 DU	MW-27	Total/NA	Ground Water	SM 4500 H+ B	
310-304575-9 DU	QC1	Total/NA	Ground Water	SM 4500 H+ B	

Analysis Batch: 452219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-4	MW-22	Total/NA	Ground Water	I-3765-85	
310-304575-5	MW-23	Total/NA	Ground Water	I-3765-85	
310-304575-9	QC1	Total/NA	Ground Water	I-3765-85	
MB 310-452219/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452219/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 452222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-1	MW-8	Total/NA	Ground Water	I-3765-85	
310-304575-2	MW-10	Total/NA	Ground Water	I-3765-85	
310-304575-3	MW-21	Total/NA	Ground Water	I-3765-85	

General Chemistry (Continued)

Analysis Batch: 452222 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-452222/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452222/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 452247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-1	MW-8	Total/NA	Ground Water	SM 2540C	
310-304575-2	MW-10	Total/NA	Ground Water	SM 2540C	
310-304575-3	MW-21	Total/NA	Ground Water	SM 2540C	
310-304575-4	MW-22	Total/NA	Ground Water	SM 2540C	
310-304575-5	MW-23	Total/NA	Ground Water	SM 2540C	
310-304575-9	QC1	Total/NA	Ground Water	SM 2540C	
MB 310-452247/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-452247/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-304575-4 DU	MW-22	Total/NA	Ground Water	SM 2540C	

Analysis Batch: 452344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-1	MW-8	Total/NA	Ground Water	4500 F C-2011	
310-304575-2	MW-10	Total/NA	Ground Water	4500 F C-2011	
310-304575-3	MW-21	Total/NA	Ground Water	4500 F C-2011	
310-304575-4	MW-22	Total/NA	Ground Water	4500 F C-2011	
310-304575-5	MW-23	Total/NA	Ground Water	4500 F C-2011	
310-304575-6	MW-24	Total/NA	Ground Water	4500 F C-2011	
310-304575-7	MW-26	Total/NA	Ground Water	4500 F C-2011	
310-304575-8	MW-27	Total/NA	Ground Water	4500 F C-2011	
310-304575-9	QC1	Total/NA	Ground Water	4500 F C-2011	
MB 310-452344/5	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-452344/6	Lab Control Sample	Total/NA	Water	4500 F C-2011	

Analysis Batch: 452503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-1	MW-8	Total/NA	Ground Water	SM 4500 Cl- E	
310-304575-2	MW-10	Total/NA	Ground Water	SM 4500 Cl- E	
310-304575-3	MW-21	Total/NA	Ground Water	SM 4500 Cl- E	
310-304575-4	MW-22	Total/NA	Ground Water	SM 4500 Cl- E	
310-304575-5	MW-23	Total/NA	Ground Water	SM 4500 Cl- E	
310-304575-6	MW-24	Total/NA	Ground Water	SM 4500 Cl- E	
310-304575-7	MW-26	Total/NA	Ground Water	SM 4500 Cl- E	
310-304575-8	MW-27	Total/NA	Ground Water	SM 4500 Cl- E	
310-304575-9	QC1	Total/NA	Ground Water	SM 4500 Cl- E	
MB 310-452503/45	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-452503/46	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 453112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-1	MW-8	Total/NA	Ground Water	D516-16	
310-304575-2	MW-10	Total/NA	Ground Water	D516-16	
310-304575-3	MW-21	Total/NA	Ground Water	D516-16	
310-304575-9	QC1	Total/NA	Ground Water	D516-16	
MB 310-453112/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-453112/17	Lab Control Sample	Total/NA	Water	D516-16	

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

General Chemistry

Analysis Batch: 453231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-4	MW-22	Total/NA	Ground Water	D516-16	
310-304575-5	MW-23	Total/NA	Ground Water	D516-16	
310-304575-6	MW-24	Total/NA	Ground Water	D516-16	
310-304575-7	MW-26	Total/NA	Ground Water	D516-16	
310-304575-8	MW-27	Total/NA	Ground Water	D516-16	
MB 310-453231/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-453231/17	Lab Control Sample	Total/NA	Water	D516-16	

Client Sample ID: MW-8

Lab Sample ID: 310-304575-1

Date Collected: 04/16/25 11:15

Matrix: Ground Water

Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452231	QTZ5	EET CF	04/22/25 10:30
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 18:38
Total/NA	Prep	7470A			452501	F5MW	EET CF	04/24/25 12:56
Total/NA	Analysis	7470A		1	452733	QTZ5	EET CF	04/25/25 11:38
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:12
Total/NA	Analysis	D516-16		5	453112	WZC8	EET CF	04/29/25 13:27
Total/NA	Analysis	I-3765-85		1	452222	HE7K	EET CF	04/21/25 15:26
Total/NA	Analysis	SM 2540C		1	452247	MDU9	EET CF	04/21/25 19:11
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 15:39
Total/NA	Analysis	SM 4500 H+ B		1	451981	W9YR	EET CF	04/18/25 10:16

Client Sample ID: MW-10

Lab Sample ID: 310-304575-2

Date Collected: 04/16/25 08:40

Matrix: Ground Water

Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452231	QTZ5	EET CF	04/22/25 10:30
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 18:55
Total/NA	Prep	7470A			452863	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 14:02
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:15
Total/NA	Analysis	D516-16		5	453112	WZC8	EET CF	04/29/25 13:27
Total/NA	Analysis	I-3765-85		1	452222	HE7K	EET CF	04/21/25 15:26
Total/NA	Analysis	SM 2540C		1	452247	MDU9	EET CF	04/21/25 19:11
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 15:40
Total/NA	Analysis	SM 4500 H+ B		1	451981	W9YR	EET CF	04/18/25 10:17

Client Sample ID: MW-21

Lab Sample ID: 310-304575-3

Date Collected: 04/16/25 13:00

Matrix: Ground Water

Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452231	QTZ5	EET CF	04/22/25 10:30
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 18:17
Total/NA	Prep	7470A			452863	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 14:08
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:19
Total/NA	Analysis	D516-16		10	453112	WZC8	EET CF	04/29/25 13:27
Total/NA	Analysis	I-3765-85		1	452222	HE7K	EET CF	04/21/25 15:26
Total/NA	Analysis	SM 2540C		1	452247	MDU9	EET CF	04/21/25 19:11
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 15:40
Total/NA	Analysis	SM 4500 H+ B		1	451981	W9YR	EET CF	04/18/25 10:18

Client Sample ID: MW-22

Lab Sample ID: 310-304575-4

Date Collected: 04/15/25 08:35

Matrix: Ground Water

Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452231	QTZ5	EET CF	04/22/25 10:30
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 18:46
Total/NA	Prep	7470A			452863	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 14:10
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:22
Total/NA	Analysis	D516-16		10	453231	WZC8	EET CF	04/30/25 11:22
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55
Total/NA	Analysis	SM 2540C		1	452247	MDU9	EET CF	04/21/25 19:11
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 15:40
Total/NA	Analysis	SM 4500 H+ B		1	451981	W9YR	EET CF	04/18/25 10:19

Client Sample ID: MW-23

Lab Sample ID: 310-304575-5

Date Collected: 04/15/25 10:45

Matrix: Ground Water

Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452231	QTZ5	EET CF	04/22/25 10:30
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 18:32
Total/NA	Prep	7470A			452863	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 14:12
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:25
Total/NA	Analysis	D516-16		1	453231	WZC8	EET CF	04/30/25 11:23
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55
Total/NA	Analysis	SM 2540C		1	452247	MDU9	EET CF	04/21/25 19:11
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 15:41
Total/NA	Analysis	SM 4500 H+ B		1	451981	W9YR	EET CF	04/18/25 10:20

Client Sample ID: MW-24

Lab Sample ID: 310-304575-6

Date Collected: 04/16/25 10:15

Matrix: Ground Water

Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452231	QTZ5	EET CF	04/22/25 10:30
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 18:52
Total/NA	Prep	7470A			452863	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 14:15
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:28
Total/NA	Analysis	D516-16		5	453231	WZC8	EET CF	04/30/25 11:23
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 15:41
Total/NA	Analysis	SM 4500 H+ B		1	451981	W9YR	EET CF	04/18/25 13:04

Lab Chronicle

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Client Sample ID: MW-26

Date Collected: 04/16/25 14:10
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-7

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452231	QTZ5	EET CF	04/22/25 10:30
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 18:58
Total/NA	Prep	7470A			452863	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 14:17
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:32
Total/NA	Analysis	D516-16		10	453231	WZC8	EET CF	04/30/25 11:25
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 16:26
Total/NA	Analysis	SM 4500 H+ B		1	451981	W9YR	EET CF	04/18/25 13:03

Client Sample ID: MW-27

Date Collected: 04/16/25 14:40
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-8

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452231	QTZ5	EET CF	04/22/25 10:30
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 19:27
Total/NA	Prep	7470A			452863	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 14:23
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:35
Total/NA	Analysis	D516-16		1	453231	WZC8	EET CF	04/30/25 11:25
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 16:27
Total/NA	Analysis	SM 4500 H+ B		1	451981	W9YR	EET CF	04/18/25 13:01

Client Sample ID: QC1

Date Collected: 04/15/25 12:00
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-9

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452231	QTZ5	EET CF	04/22/25 10:30
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 19:30
Total/NA	Prep	7470A			452863	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 14:25
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:38
Total/NA	Analysis	D516-16		10	453112	WZC8	EET CF	04/29/25 13:31
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55
Total/NA	Analysis	SM 2540C		1	452247	MDU9	EET CF	04/21/25 19:11
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 16:27
Total/NA	Analysis	SM 4500 H+ B		1	451981	W9YR	EET CF	04/18/25 10:14

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

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

Method Summary

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-1

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF

Protocol References:

ASTM = ASTM International

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.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-304575 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power & Water

City/State: CITY Muscatine STATE IA Project:

Receipt Information

Date/Time Received: DATE 4/18/25 TIME 0840 Received By: BP

Delivery Type: [X] UPS [ ] FedEx [ ] FedEx Ground [ ] US Mail [ ] Spee-Dee
[ ] Lab Courier [ ] Lab Field Services [ ] Client Drop-off [ ] Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? [X] Yes [ ] No *If yes:* Cooler ID:

Multiple Coolers? [X] Yes [ ] No *If yes:* Cooler # 1 of 2

Cooler Custody Seals Present? [X] Yes [ ] No *If yes:* Cooler custody seals intact? [X] Yes [ ] No

Sample Custody Seals Present? [ ] Yes [X] No *If yes:* Sample custody seals intact? [ ] Yes [ ] No

Trip Blank Present? [ ] Yes [X] No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: [X] Wet ice [ ] Blue ice [ ] Dry ice [ ] Other:_____ [ ] NONE

Thermometer ID: AA 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): 0.7 Corrected Temp (°C): 0.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? [ ] Yes [ ] No
   a) *If yes:* Is there evidence that the chilling process began? [ ] Yes [ ] 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?) [ ] Yes [ ] No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power & Water

City/State: CITY Muscatine STATE IA Project:

Receipt Information

Date/Time Received: DATE 4/18/25 TIME 0840 Received By: BP

Delivery Type: [X] UPS [ ] FedEx [ ] FedEx Ground [ ] US Mail [ ] Spee-Dee
[ ] Lab Courier [ ] Lab Field Services [ ] Client Drop-off [ ] Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? [X] Yes [ ] No *If yes:* Cooler ID:

Multiple Coolers? [X] Yes [ ] No *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? [X] Yes [ ] No *If yes:* Cooler custody seals intact? [X] Yes [ ] No

Sample Custody Seals Present? [ ] Yes [X] No *If yes:* Sample custody seals intact? [ ] Yes [ ] No

Trip Blank Present? [ ] Yes [X] No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: [X] Wet ice [ ] Blue ice [ ] Dry ice [ ] Other:_____ [ ] NONE

Thermometer ID: AA 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): 0.3 Corrected Temp (°C): 0.3

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? [ ] Yes [ ] No
   a) *If yes:* Is there evidence that the chilling process began? [ ] Yes [ ] 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?) [ ] Yes [ ] No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested:			
City: Muscatine	TAT Requested (days):			
State, Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw.org and neil.hoskins@mpw.org	WO #:			
Project Name: Muscatine Power & Water CCR Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Spring 2025 Sampling			

Analysis Requested

Preservation Codes.

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A CCR List, 7470A Mercury	2540C TDS, SM4500_H+ pH	9056A Chloride, Fluoride, Sulfate	Radium-226	Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N				
MW-4B			G	GW			X	X	X	X	X		
MW-5B			G	GW			X	X	X	X	X		
MW-6A			G	GW			X	X	X	X	X		
MW-8	4/16/25	1115	G	GW			X	X	X	X	X		
MW-10	4/16/25	0840	G	GW			X	X	X	X	X		
MW-14A			G	GW			X	X	X	X	X		
MW-15A			G	GW			X	X	X	X	X		
MW-21	4/16/25	1300	G	GW			X	X	X	X	X		
MW-22	4/15/25	0835	G	GW			X	X	X	X	X		
MW-23	4/15/25	1045	G	GW			X	X	X	X	X		
MW-24	4/16/25	1015	G	GW			X	X	X	X	X		

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
					4.4.25 840	
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

ns Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days):			
State, Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water CCR Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Spring 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A CCR List, 7470A Mercury	2540C TDS, SM4500_H+ pH	9056A Chloride, Fluoride, Sulfate	Radium-226	Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N				
MW-26	4/16/25	1410	G	GW			X	X	X	X	X		
MW-27	4/16/25	1440	G	GW			X	X	X	X	X		
QC1	4/15/25	1200	G	GW			X	X	X	X	X		
QC2			G	GW			X	X	X	X	X		
Leachate			G	GW									

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				4-16-25 840	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days)			
State, Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw.org and neil.hoskins@mpw.org	WO #:			
Project Name: Muscatine Power & Water State Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Spring 2025 Sampling			

Analysis Requested

Preservation Codes.

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List	9056A Chloride, Fluoride, Sulfate	452	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N			
MW-4B				GW			X	X			
MW-5B				GW			X	X			
MW-6A				GW			X	X			
MW-8	4/16/25	1115	G	GW			X	X			
MW-10	4/16/25	0840	G	GW			X	X			
MW-14A				GW			X	X			
MW-15A				GW			X	X			
MW-21	4/16/25	1300	G	GW			X	X			
MW-22	4/15/25	0835	G	GW			X	X			
MW-23	4/15/25	1045	G	GW			X	X			
MW-24	4/16/25	1015	G	GW			X	X			

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

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

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

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				4-18-25 840	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Date/Time:	Company	Received by:	Date/Time:	Company

Cooler Temperature(s) °C and Other Remarks:

4/30/2025

ins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No.
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested:			
City: Muscatine	TAT Requested (days):			
State, Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water State Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Spring 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List	9056A Chloride, Fluoride, Sulfate	155	Total Number of containers	Special Instructions/Note
			Preservation Code:				D	N			
MW-26	4/16/25	1410	G	GW			X	X			
MW-27	4/16/25	1440	G	GW			X	X			
QC1	4/15/25	1200	G	GW			X	X			
QC2							X	X			
Leachate											

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

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

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

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1					4.18.25 840	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-304575-1

Login Number: 304575

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.	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	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Sam Bennett
Muscatine Power & Water
1700 Dick Drake Way
PO BOX 899
Muscatine, Iowa 52761

Generated 5/21/2025 2:32:21 PM

JOB DESCRIPTION

MPW CCR - Landfill

JOB NUMBER

310-304575-2

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

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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5/21/2025 2:32:21 PM

Authorized for release by
Bob Michels, Project Manager I
Bob.Michels@et.eurofinsus.com
(319)277-2401

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Job ID: 310-304575-2 — Eurofins Cedar Falls

Job Narrative
310-304575-2

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 4/18/2025 8:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.3°C and 0.7°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.

Sample Summary

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-304575-1	MW-8	Ground Water	04/16/25 11:15	04/18/25 08:40
310-304575-2	MW-10	Ground Water	04/16/25 08:40	04/18/25 08:40
310-304575-3	MW-21	Ground Water	04/16/25 13:00	04/18/25 08:40
310-304575-4	MW-22	Ground Water	04/15/25 08:35	04/18/25 08:40
310-304575-5	MW-23	Ground Water	04/15/25 10:45	04/18/25 08:40
310-304575-9	QC1	Ground Water	04/15/25 12:00	04/18/25 08:40

Detection Summary

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-2

Client Sample ID: MW-8 — Lab Sample ID: 310-304575-1

No Detections.

Client Sample ID: MW-10 — Lab Sample ID: 310-304575-2

No Detections.

Client Sample ID: MW-21 — Lab Sample ID: 310-304575-3

No Detections.

Client Sample ID: MW-22 — Lab Sample ID: 310-304575-4

No Detections.

Client Sample ID: MW-23 — Lab Sample ID: 310-304575-5

No Detections.

Client Sample ID: QC1 — Lab Sample ID: 310-304575-9

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-8

Date Collected: 04/16/25 11:15
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-1

Matrix: Ground Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.303	U	0.196	0.197	1.00	0.303	pCi/L	04/23/25 08:21	05/21/25 07:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.0*		*30 - 110*	*04/23/25 08:21*	*05/21/25 07:41*	*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	0.302	0.302	1.00	0.554	pCi/L	04/23/25 08:24	05/20/25 11:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.0*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:52*	*1*
Y Carrier	*81.5*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:52*	*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	<0.554	U	0.360	0.361	5.00	0.554	pCi/L		05/20/25 11:59	1

Client Sample ID: MW-10

Date Collected: 04/16/25 08:40
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-2

Matrix: Ground Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.254**		0.166	0.167	1.00	0.215	pCi/L	04/23/25 08:21	05/21/25 07:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.1*		*30 - 110*	*04/23/25 08:21*	*05/21/25 07:41*	*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	<0.503	U	0.290	0.290	1.00	0.503	pCi/L	04/23/25 08:24	05/20/25 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.1*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:53*	*1*
Y Carrier	*84.9*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:53*	*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	<0.503	U	0.334	0.335	5.00	0.503	pCi/L		05/20/25 11:59	1

Client Sample ID: MW-21

Date Collected: 04/16/25 13:00
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-3

Matrix: Ground Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.287	U	0.181	0.181	1.00	0.287	pCi/L	04/23/25 08:21	05/21/25 07:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.7*		*30 - 110*	*04/23/25 08:21*	*05/21/25 07:41*	*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	<0.552	U	0.266	0.266	1.00	0.552	pCi/L	04/23/25 08:24	05/20/25 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.7*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:53*	*1*
Y Carrier	*83.0*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:53*	*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	<0.552	U	0.322	0.322	5.00	0.552	pCi/L		05/20/25 11:59	1

Client Sample ID: MW-22

Date Collected: 04/15/25 08:35
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-4

Matrix: Ground Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.334	U	0.221	0.223	1.00	0.334	pCi/L	04/23/25 08:21	05/21/25 07:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.6*		*30 - 110*	*04/23/25 08:21*	*05/21/25 07:41*	*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	<0.458	U	0.299	0.302	1.00	0.458	pCi/L	04/23/25 08:24	05/20/25 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.6*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:53*	*1*
Y Carrier	*83.7*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:53*	*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	**0.665**		0.372	0.375	5.00	0.458	pCi/L		05/20/25 11:59	1

Client Sample ID: MW-23

Date Collected: 04/15/25 10:45
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-5

Matrix: Ground Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.487	U	0.278	0.278	1.00	0.487	pCi/L	04/23/25 08:21	05/21/25 07:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*30 - 110*	*04/23/25 08:21*	*05/21/25 07:41*	*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	<0.648	U	0.361	0.362	1.00	0.648	pCi/L	04/23/25 08:24	05/20/25 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:53*	*1*
Y Carrier	*84.5*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:53*	*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	<0.648	U	0.456	0.456	5.00	0.648	pCi/L		05/20/25 11:59	1

Client Sample ID: QC1

Date Collected: 04/15/25 12:00
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-9

Matrix: Ground Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.327		0.205	0.207	1.00	0.279	pCi/L	04/23/25 08:21	05/21/25 07:43	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.4*		*30 - 110*	*04/23/25 08:21*	*05/21/25 07:43*	*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	<0.522	U	0.278	0.278	1.00	0.522	pCi/L	04/23/25 08:24	05/20/25 11:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.4*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:53*	*1*
Y Carrier	*84.1*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:53*	*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	<0.522	U	0.345	0.347	5.00	0.522	pCi/L		05/20/25 11:59	1

Definitions/Glossary

Client: Muscatine Power & Water
Job ID: 310-304575-2
Project/Site: MPW CCR - Landfill

Qualifiers

Rad

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

Glossary

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

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-713894/1-A
Matrix: Water
Analysis Batch: 718628

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 713894

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.251	U	0.115	0.115	1.00	0.251	pCi/L	04/23/25 08:21	05/21/25 07:40	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.3*		*30 - 110*	*04/23/25 08:21*	*05/21/25 07:40*	*1*

Lab Sample ID: LCS 160-713894/2-A
Matrix: Water
Analysis Batch: 718628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 713894

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			9.58	7.716		1.02	1.00	0.264	pCi/L	81	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.6*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-713895/1-A
Matrix: Water
Analysis Batch: 718429

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 713895

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.518	U	0.268	0.269	1.00	0.518	pCi/L	04/23/25 08:24	05/20/25 11:49	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.3*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:49*	*1*
Y Carrier	*86.0*		*30 - 110*	*04/23/25 08:24*	*05/20/25 11:49*	*1*

Lab Sample ID: LCS 160-713895/2-A
Matrix: Water
Analysis Batch: 718429

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 713895

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			9.43	9.830		1.30	1.00	0.480	pCi/L	104	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*93.6*		*30 - 110*
Y Carrier	*85.2*		*30 - 110*

QC Association Summary

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-2

Rad

Prep Batch: 713894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-1	MW-8	Total/NA	Ground Water	PrecSep-21	
310-304575-2	MW-10	Total/NA	Ground Water	PrecSep-21	
310-304575-3	MW-21	Total/NA	Ground Water	PrecSep-21	
310-304575-4	MW-22	Total/NA	Ground Water	PrecSep-21	
310-304575-5	MW-23	Total/NA	Ground Water	PrecSep-21	
310-304575-9	QC1	Total/NA	Ground Water	PrecSep-21	
MB 160-713894/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-713894/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 713895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304575-1	MW-8	Total/NA	Ground Water	PrecSep_0	
310-304575-2	MW-10	Total/NA	Ground Water	PrecSep_0	
310-304575-3	MW-21	Total/NA	Ground Water	PrecSep_0	
310-304575-4	MW-22	Total/NA	Ground Water	PrecSep_0	
310-304575-5	MW-23	Total/NA	Ground Water	PrecSep_0	
310-304575-9	QC1	Total/NA	Ground Water	PrecSep_0	
MB 160-713895/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-713895/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-2

Client Sample ID: MW-8

Lab Sample ID: 310-304575-1

Date Collected: 04/16/25 11:15

Matrix: Ground Water

Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			713894	OGC	EET SL	04/23/25 08:21
Total/NA	Analysis	9315		1	718628	SWS	EET SL	05/21/25 07:41
Total/NA	Prep	PrecSep_0			713895	OGC	EET SL	04/23/25 08:24
Total/NA	Analysis	9320		1	718429	SWS	EET SL	05/20/25 11:52
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/20/25 11:59

Client Sample ID: MW-10

Lab Sample ID: 310-304575-2

Date Collected: 04/16/25 08:40

Matrix: Ground Water

Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			713894	OGC	EET SL	04/23/25 08:21
Total/NA	Analysis	9315		1	718628	SWS	EET SL	05/21/25 07:41
Total/NA	Prep	PrecSep_0			713895	OGC	EET SL	04/23/25 08:24
Total/NA	Analysis	9320		1	718429	SWS	EET SL	05/20/25 11:53
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/20/25 11:59

Client Sample ID: MW-21

Lab Sample ID: 310-304575-3

Date Collected: 04/16/25 13:00

Matrix: Ground Water

Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			713894	OGC	EET SL	04/23/25 08:21
Total/NA	Analysis	9315		1	718628	SWS	EET SL	05/21/25 07:41
Total/NA	Prep	PrecSep_0			713895	OGC	EET SL	04/23/25 08:24
Total/NA	Analysis	9320		1	718429	SWS	EET SL	05/20/25 11:53
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/20/25 11:59

Client Sample ID: MW-22

Lab Sample ID: 310-304575-4

Date Collected: 04/15/25 08:35

Matrix: Ground Water

Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			713894	OGC	EET SL	04/23/25 08:21
Total/NA	Analysis	9315		1	718628	SWS	EET SL	05/21/25 07:41
Total/NA	Prep	PrecSep_0			713895	OGC	EET SL	04/23/25 08:24
Total/NA	Analysis	9320		1	718429	SWS	EET SL	05/20/25 11:53
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/20/25 11:59

Lab Chronicle

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-2

Client Sample ID: MW-23

Date Collected: 04/15/25 10:45
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-5
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			713894	OGC	EET SL	04/23/25 08:21
Total/NA	Analysis	9315		1	718628	SWS	EET SL	05/21/25 07:41
Total/NA	Prep	PrecSep_0			713895	OGC	EET SL	04/23/25 08:24
Total/NA	Analysis	9320		1	718429	SWS	EET SL	05/20/25 11:53
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/20/25 11:59

Client Sample ID: QC1

Date Collected: 04/15/25 12:00
Date Received: 04/18/25 08:40

Lab Sample ID: 310-304575-9
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			713894	OGC	EET SL	04/23/25 08:21
Total/NA	Analysis	9315		1	718629	SWS	EET SL	05/21/25 07:43
Total/NA	Prep	PrecSep_0			713895	OGC	EET SL	04/23/25 08:24
Total/NA	Analysis	9320		1	718429	SWS	EET SL	05/20/25 11:53
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/20/25 11:59

Laboratory References:

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

Accreditation/Certification Summary

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-2

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	12-01-26

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: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-2

Method	Method Description	Protocol	Laboratory
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
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 SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

eurofins | Environment Testing America

310-304575 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power & Water

City/State: CITY Muscatine STATE IA Project:

Receipt Information

Date/Time Received: DATE 4/18/25 TIME 0840 Received By: BP

Delivery Type: [X] UPS [ ] FedEx [ ] FedEx Ground [ ] US Mail [ ] Spee-Dee
[ ] Lab Courier [ ] Lab Field Services [ ] Client Drop-off [ ] Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? [X] Yes [ ] No *If yes:* Cooler ID:

Multiple Coolers? [X] Yes [ ] No *If yes:* Cooler # 1 of 2

Cooler Custody Seals Present? [X] Yes [ ] No *If yes:* Cooler custody seals intact? [X] Yes [ ] No

Sample Custody Seals Present? [ ] Yes [X] No *If yes:* Sample custody seals intact? [ ] Yes [ ] No

Trip Blank Present? [ ] Yes [X] No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: [X] Wet ice [ ] Blue ice [ ] Dry ice [ ] Other:_____ [ ] NONE

Thermometer ID: AA 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): 0.7 Corrected Temp (°C): 0.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? [ ] Yes [ ] No
   a) *If yes:* Is there evidence that the chilling process began? [ ] Yes [ ] 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?) [ ] Yes [ ] No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power & Water

City/State: CITY Muscatine STATE IA Project:

Receipt Information

Date/Time Received: DATE 4/18/25 TIME 0840 Received By: BP

Delivery Type: [X] UPS [ ] FedEx [ ] FedEx Ground [ ] US Mail [ ] Spee-Dee
[ ] Lab Courier [ ] Lab Field Services [ ] Client Drop-off [ ] Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? [X] Yes [ ] No *If yes:* Cooler ID:

Multiple Coolers? [X] Yes [ ] No *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? [X] Yes [ ] No *If yes:* Cooler custody seals intact? [X] Yes [ ] No

Sample Custody Seals Present? [ ] Yes [X] No *If yes:* Sample custody seals intact? [ ] Yes [ ] No

Trip Blank Present? [ ] Yes [X] No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: [X] Wet ice [ ] Blue ice [ ] Dry ice [ ] Other:_____ [ ] NONE

Thermometer ID: AA 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): 0.3 Corrected Temp (°C): 0.3

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? [ ] Yes [ ] No
   a) *If yes:* Is there evidence that the chilling process began? [ ] Yes [ ] 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?) [ ] Yes [ ] No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested:			
City: Muscatine	TAT Requested (days):			
State, Zip: IA, 52761	PO #: 251639			
Phone:	WO #:			
Email: sbennett@mpw.org and neil.hoskins@mpw.org	TestAmerica Project #: 310-290523			
Project Name: Muscatine Power & Water CCR Landfill	Event: Spring 2025 Sampling			
Site: Iowa				

Analysis Requested

Preservation Codes.

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A CCR List, 7470A Mercury	2540C TDS, SM4500_H+ pH	9056A Chloride, Fluoride, Sulfate	Radium-226	Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N				
MW-4B			G	GW			X	X	X	X	X		
MW-5B			G	GW			X	X	X	X	X		
MW-6A			G	GW			X	X	X	X	X		
MW-8	4/16/25	1115	G	GW			X	X	X	X	X		
MW-10	4/16/25	0840	G	GW			X	X	X	X	X		
MW-14A			G	GW			X	X	X	X	X		
MW-15A			G	GW			X	X	X	X	X		
MW-21	4/16/25	1300	G	GW			X	X	X	X	X		
MW-22	4/15/25	0835	G	GW			X	X	X	X	X		
MW-23	4/15/25	1045	G	GW			X	X	X	X	X		
MW-24	4/16/25	1015	G	GW			X	X	X	X	X		

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
					4.25 840	
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

5/21/2025

ns Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days):			
State, Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water CCR Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Spring 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A CCR List, 7470A Mercury	2540C TDS, SM4500_H+ pH	9056A Chloride, Fluoride, Sulfate	Radium-226	Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N				
MW-26	4/16/25	1410	G	GW			X	X	X	X	X		
MW-27	4/16/25	1440	G	GW			X	X	X	X	X		
QC1	4/15/25	1200	G	GW			X	X	X	X	X		
QC2			G	GW			X	X	X	X	X		
Leachate			G	GW									

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

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

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				4-16-25 840	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

5/21/2025

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days)			
State, Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw.org and neil.hoskins@mpw.org	WO #:			
Project Name: Muscatine Power & Water State Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Spring 2025 Sampling			

Analysis Requested

Preservation Codes.

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List	9056A Chloride, Fluoride, Sulfate	452	Total Number of containers	Special Instructions/Note:
			Preservation Code.				D	N			
MW-4B				GW			X	X			
MW-5B				GW			X	X			
MW-6A				GW			X	X			
MW-8	4/16/25	1115	G	GW			X	X			
MW-10	4/16/25	0840	G	GW			X	X			
MW-14A				GW			X	X			
MW-15A				GW			X	X			
MW-21	4/16/25	1300	G	GW			X	X			
MW-22	4/15/25	0835	G	GW			X	X			
MW-23	4/15/25	1045	G	GW			X	X			
MW-24	4/16/25	1015	G	GW			X	X			

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

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

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

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				4-18-25 840	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Date/Time:	Company	Received by:	Date/Time:	Company

Cooler Temperature(s) °C and Other Remarks:

5/21/2025

ins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No.
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested:			
City: Muscatine	TAT Requested (days):			
State, Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water State Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Spring 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List	9056A Chloride, Fluoride, Sulfate	155	Total Number of containers	Special Instructions/Note
			Preservation Code:				D	N			
MW-26	4/16/25	1410	G	GW			X	X			
MW-27	4/16/25	1440	G	GW			X	X			
QC1	4/15/25	1200	G	GW			X	X			
QC2							X	X			
Leachate											

Page 25 of 28

Possible Hazard Identification

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

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

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

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

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
5/21/2025					4.18.25 840	
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-304575-2

Login Number: 304575

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.	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	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-304575-2

Login Number: 304575
List Number: 2
Creator: Forrest, Cheyenne L

List Source: Eurofins St. Louis
List Creation: 04/21/25 12:22 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
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.	N/A	
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	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Tracer/Carrier Summary

Client: Muscatine Power & Water
Project/Site: MPW CCR - Landfill

Job ID: 310-304575-2

Method: 9315 - Radium-226 (GFPC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Ba							
Lab Sample ID	Client Sample ID	(30-110)							
310-304575-1	MW-8	89.0							
310-304575-2	MW-10	93.1							
310-304575-3	MW-21	84.7							
310-304575-4	MW-22	93.6							
310-304575-5	MW-23	86.4							
310-304575-9	QC1	85.4							

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9315 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Ba							
Lab Sample ID	Client Sample ID	(30-110)							
LCS 160-713894/2-A	Lab Control Sample	93.6							
MB 160-713894/1-A	Method Blank	89.3							

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Ba	Y						
Lab Sample ID	Client Sample ID	(30-110)	(30-110)						
310-304575-1	MW-8	89.0	81.5						
310-304575-2	MW-10	93.1	84.9						
310-304575-3	MW-21	84.7	83.0						
310-304575-4	MW-22	93.6	83.7						
310-304575-5	MW-23	86.4	84.5						
310-304575-9	QC1	85.4	84.1						

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Ba	Y						
Lab Sample ID	Client Sample ID	(30-110)	(30-110)						
LCS 160-713895/2-A	Lab Control Sample	93.6	85.2						
MB 160-713895/1-A	Method Blank	89.3	86.0						

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

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ANALYTICAL REPORT

PREPARED FOR

Attn: Sam Bennett
Muscatine Power & Water
1700 Dick Drake Way
PO BOX 899
Muscatine, Iowa 52761

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JOB DESCRIPTION

Muscatine Power & Water Landfill
310-290523

JOB NUMBER

310-304703-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

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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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Job ID: 310-304703-1 — Eurofins Cedar Falls

Job Narrative
310-304703-1

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 4/22/2025 8:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6°C and 2.0°C.

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.

Sample Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-1
SDG: 310-290523

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-304703-1	MW-4B	Water	04/18/25 09:45	04/22/25 08:25
310-304703-2	MW-5B	Water	04/18/25 08:35	04/22/25 08:25
310-304703-3	MW-6A	Water	04/18/25 10:15	04/22/25 08:25
310-304703-4	MW-14A	Water	04/17/25 08:15	04/22/25 08:25
310-304703-5	MW-15A	Water	04/17/25 10:10	04/22/25 08:25
310-304703-6	QC-2	Water	04/18/25 10:15	04/22/25 08:25
310-304703-7	Leachate	Water	04/18/25 10:45	04/22/25 08:25

Detection Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-1
SDG: 310-290523

Client Sample ID: MW-4B — Lab Sample ID: 310-304703-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.157		0.00200		mg/L	1		6020B	Total/NA
Boron	0.169		0.100		mg/L	1		6020B	Total/NA
Calcium	86.8		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00119		0.000500		mg/L	1		6020B	Total/NA
Iron	0.310		0.100		mg/L	1		6020B	Total/NA
Magnesium	32.3		0.500		mg/L	1		6020B	Total/NA
Manganese	0.241		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.0917		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.268		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	50.8		25.0		mg/L	5		D516-16	Total/NA
Total Suspended Solids	3.75		1.88		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	424		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	18.9		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.5	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-5B — Lab Sample ID: 310-304703-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.0574		0.0500		mg/L	1		6020B	Total/NA
Barium	0.256		0.00200		mg/L	1		6020B	Total/NA
Calcium	106		0.500		mg/L	1		6020B	Total/NA
Iron	2.25		0.100		mg/L	1		6020B	Total/NA
Magnesium	36.3		0.500		mg/L	1		6020B	Total/NA
Manganese	0.478		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.159		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.193		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	35.7		25.0		mg/L	5		D516-16	Total/NA
Total Suspended Solids	8.20		3.00		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	470		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	32.1		20.0		mg/L	10		SM 4500 Cl- E	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-6A — Lab Sample ID: 310-304703-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.231		0.00200		mg/L	1		6020B	Total/NA
Calcium	85.2		0.500		mg/L	1		6020B	Total/NA
Iron	3.20		0.100		mg/L	1		6020B	Total/NA
Magnesium	28.8		0.500		mg/L	1		6020B	Total/NA
Manganese	0.111		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.175		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.303		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	18.5		5.00		mg/L	1		D516-16	Total/NA
Total Suspended Solids	8.33		5.00		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	380		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	15.8		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-14A — Lab Sample ID: 310-304703-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.104		0.0500		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-14A (Continued) — Lab Sample ID: 310-304703-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0294		0.00200		mg/L	1		6020B	Total/NA
Boron	15.4		0.400		mg/L	4		6020B	Total/NA
Calcium	286		0.500		mg/L	1		6020B	Total/NA
Iron	0.163		0.100		mg/L	1		6020B	Total/NA
Magnesium	134		2.00		mg/L	4		6020B	Total/NA
Molybdenum	0.00322		0.00200		mg/L	1		6020B	Total/NA
Strontium	0.229		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.262		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	808		250		mg/L	50		D516-16	Total/NA
Total Suspended Solids	3.25		1.88		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	1830		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	18.0		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-15A — Lab Sample ID: 310-304703-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0300		0.00200		mg/L	1		6020B	Total/NA
Boron	8.16		0.400		mg/L	4		6020B	Total/NA
Calcium	125		0.500		mg/L	1		6020B	Total/NA
Magnesium	53.2		0.500		mg/L	1		6020B	Total/NA
Molybdenum	0.0109		0.00200		mg/L	1		6020B	Total/NA
Strontium	0.107		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.257		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	309		50.0		mg/L	10		D516-16	Total/NA
Total Dissolved Solids	766		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	7.79		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.5	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: QC-2 — Lab Sample ID: 310-304703-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.250		0.00200		mg/L	1		6020B	Total/NA
Calcium	108		0.500		mg/L	1		6020B	Total/NA
Iron	2.19		0.100		mg/L	1		6020B	Total/NA
Magnesium	35.9		0.500		mg/L	1		6020B	Total/NA
Manganese	0.464		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.155		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.198		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	35.8		5.00		mg/L	1		D516-16	Total/NA
Total Suspended Solids	7.00		3.00		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	488		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	42.2		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: Leachate — Lab Sample ID: 310-304703-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.39		0.100		mg/L	50		6020B	Total/NA
Barium	0.0501		0.00200		mg/L	1		6020B	Total/NA
Boron	69.8		5.00		mg/L	50		6020B	Total/NA
Cadmium	0.000529		0.000200		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: Leachate (Continued)

Lab Sample ID: 310-304703-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	434		25.0		mg/L	50		6020B	Total/NA
Iron	3.90		2.00		mg/L	20		6020B	Total/NA
Lithium	0.395		0.200		mg/L	20		6020B	Total/NA
Magnesium	61.9		10.0		mg/L	20		6020B	Total/NA
Manganese	2.10		0.200		mg/L	20		6020B	Total/NA
Molybdenum	1.55		0.0400		mg/L	20		6020B	Total/NA
Strontium	6.27		0.0200		mg/L	20		6020B	Total/NA
Thallium	0.00244		0.00100		mg/L	1		6020B	Total/NA
Fluoride	3.18		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	192		50.0		mg/L	10		D516-16	Total/NA
Total Suspended Solids	2.25		1.88		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	7600		250		mg/L	1		SM 2540C	Total/NA
Chloride	81.6		20.0		mg/L	10		SM 4500 Cl- E	Total/NA
pH	8.9	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-4B

Date Collected: 04/18/25 09:45
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/24/25 09:00	04/25/25 14:58	1
Antimony	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 14:58	1
Arsenic	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 14:58	1
Barium	**0.157**		0.00200		mg/L		04/24/25 09:00	04/25/25 14:58	1
Beryllium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 14:58	1
Boron	**0.169**		0.100		mg/L		04/24/25 09:00	04/28/25 15:27	1
Cadmium	<0.000200		0.000200		mg/L		04/24/25 09:00	04/25/25 14:58	1
Calcium	**86.8**		0.500		mg/L		04/24/25 09:00	04/25/25 14:58	1
Chromium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:58	1
Cobalt	**0.00119**		0.000500		mg/L		04/24/25 09:00	04/25/25 14:58	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:58	1
Iron	**0.310**		0.100		mg/L		04/24/25 09:00	04/25/25 14:58	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 14:58	1
Lithium	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 14:58	1
Magnesium	**32.3**		0.500		mg/L		04/24/25 09:00	04/25/25 14:58	1
Manganese	**0.241**		0.0100		mg/L		04/24/25 09:00	04/25/25 14:58	1
Molybdenum	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 14:58	1
Nickel	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:58	1
Selenium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:58	1
Strontium	**0.0917**		0.00100		mg/L		04/24/25 09:00	04/25/25 14:58	1
Thallium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 14:58	1
Vanadium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:58	1
Zinc	<0.0200		0.0200		mg/L		04/24/25 09:00	04/25/25 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		04/29/25 09:26	04/29/25 15:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.268**		0.100		mg/L			05/02/25 08:34	1
Sulfate (ASTM D516-16)	**50.8**		25.0		mg/L			04/30/25 11:55	5
Total Suspended Solids (USGS I-3765-85)	**3.75**		1.88		mg/L			04/23/25 10:22	1
Total Dissolved Solids (SM 2540C)	**424**		50.0		mg/L			04/22/25 14:38	1
Chloride (SM 4500 Cl- E)	**18.9**		2.00		mg/L			04/26/25 15:15	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.5**	**HF**	1.0		SU			04/22/25 09:27	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-1
SDG: 310-290523

Client Sample ID: MW-5B

Date Collected: 04/18/25 08:35
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.0574**		0.0500		mg/L		04/24/25 09:00	04/25/25 13:13	1
Antimony	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:13	1
Arsenic	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:13	1
Barium	**0.256**		0.00200		mg/L		04/24/25 09:00	04/25/25 13:13	1
Beryllium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 13:13	1
Boron	<0.100		0.100		mg/L		04/24/25 09:00	04/25/25 13:13	1
Cadmium	<0.000200		0.000200		mg/L		04/24/25 09:00	04/25/25 13:13	1
Calcium	**106**		0.500		mg/L		04/24/25 09:00	04/25/25 13:13	1
Chromium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:13	1
Cobalt	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 13:13	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:13	1
Iron	**2.25**		0.100		mg/L		04/24/25 09:00	04/25/25 13:13	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 13:13	1
Lithium	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 13:13	1
Magnesium	**36.3**		0.500		mg/L		04/24/25 09:00	04/25/25 13:13	1
Manganese	**0.478**		0.0100		mg/L		04/24/25 09:00	04/25/25 13:13	1
Molybdenum	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:13	1
Nickel	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:13	1
Selenium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:13	1
Strontium	**0.159**		0.00100		mg/L		04/24/25 09:00	04/25/25 13:13	1
Thallium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 13:13	1
Vanadium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:13	1
Zinc	<0.0200		0.0200		mg/L		04/24/25 09:00	04/25/25 13:13	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/29/25 09:26	04/29/25 15:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.193**		0.100		mg/L			05/02/25 08:44	1
Sulfate (ASTM D516-16)	**35.7**		25.0		mg/L			04/30/25 11:55	5
Total Suspended Solids (USGS I-3765-85)	**8.20**		3.00		mg/L			04/23/25 10:22	1
Total Dissolved Solids (SM 2540C)	**470**		50.0		mg/L			04/22/25 14:38	1
Chloride (SM 4500 Cl- E)	**32.1**		20.0		mg/L			04/26/25 15:15	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			04/22/25 09:28	1

Client Sample ID: MW-6A
Date Collected: 04/18/25 10:15
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/24/25 09:00	04/25/25 13:20	1
Antimony	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:20	1
Arsenic	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:20	1
Barium	**0.231**		0.00200		mg/L		04/24/25 09:00	04/25/25 13:20	1
Beryllium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 13:20	1
Boron	<0.100		0.100		mg/L		04/24/25 09:00	04/25/25 13:20	1
Cadmium	<0.000200		0.000200		mg/L		04/24/25 09:00	04/25/25 13:20	1
Calcium	**85.2**		0.500		mg/L		04/24/25 09:00	04/25/25 13:20	1
Chromium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:20	1
Cobalt	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 13:20	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:20	1
Iron	**3.20**		0.100		mg/L		04/24/25 09:00	04/25/25 13:20	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 13:20	1
Lithium	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 13:20	1
Magnesium	**28.8**		0.500		mg/L		04/24/25 09:00	04/25/25 13:20	1
Manganese	**0.111**		0.0100		mg/L		04/24/25 09:00	04/25/25 13:20	1
Molybdenum	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:20	1
Nickel	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:20	1
Selenium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:20	1
Strontium	**0.175**		0.00100		mg/L		04/24/25 09:00	04/25/25 13:20	1
Thallium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 13:20	1
Vanadium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:20	1
Zinc	<0.0200		0.0200		mg/L		04/24/25 09:00	04/25/25 13:20	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/29/25 09:26	04/29/25 15:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.303**		0.100		mg/L			05/02/25 08:47	1
Sulfate (ASTM D516-16)	**18.5**		5.00		mg/L			04/30/25 12:37	1
Total Suspended Solids (USGS I-3765-85)	**8.33**		5.00		mg/L			04/23/25 09:51	1
Total Dissolved Solids (SM 2540C)	**380**		50.0		mg/L			04/22/25 14:38	1
Chloride (SM 4500 Cl- E)	**15.8**		2.00		mg/L			04/26/25 15:17	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			04/22/25 09:29	1

Client Sample ID: MW-14A

Date Collected: 04/17/25 08:15
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.104**		0.0500		mg/L		04/24/25 09:00	04/25/25 14:56	1
Antimony	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 14:56	1
Arsenic	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 14:56	1
Barium	**0.0294**		0.00200		mg/L		04/24/25 09:00	04/25/25 14:56	1
Beryllium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 14:56	1
Boron	**15.4**		0.400		mg/L		04/24/25 09:00	04/28/25 15:24	4
Cadmium	<0.000200		0.000200		mg/L		04/24/25 09:00	04/25/25 14:56	1
Calcium	**286**		0.500		mg/L		04/24/25 09:00	04/25/25 14:56	1
Chromium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:56	1
Cobalt	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 14:56	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:56	1
Iron	**0.163**		0.100		mg/L		04/24/25 09:00	04/25/25 14:56	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 14:56	1
Lithium	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 14:56	1
Magnesium	**134**		2.00		mg/L		04/24/25 09:00	04/28/25 15:24	4
Manganese	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 14:56	1
Molybdenum	**0.00322**		0.00200		mg/L		04/24/25 09:00	04/25/25 14:56	1
Nickel	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:56	1
Selenium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:56	1
Strontium	**0.229**		0.00100		mg/L		04/24/25 09:00	04/25/25 14:56	1
Thallium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 14:56	1
Vanadium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:56	1
Zinc	<0.0200		0.0200		mg/L		04/24/25 09:00	04/25/25 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		04/29/25 09:26	04/29/25 15:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.262**		0.100		mg/L			05/02/25 08:51	1
Sulfate (ASTM D516-16)	**808**		250		mg/L			04/30/25 11:56	50
Total Suspended Solids (USGS I-3765-85)	**3.25**		1.88		mg/L			04/23/25 09:51	1
Total Dissolved Solids (SM 2540C)	**1830**		50.0		mg/L			04/22/25 14:38	1
Chloride (SM 4500 Cl- E)	**18.0**		2.00		mg/L			04/26/25 14:46	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			04/22/25 09:30	1

Client Sample Results

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-1
SDG: 310-290523

Client Sample ID: MW-15A

Date Collected: 04/17/25 10:10
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/24/25 09:00	04/25/25 14:53	1
Antimony	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 14:53	1
Arsenic	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 14:53	1
Barium	**0.0300**		0.00200		mg/L		04/24/25 09:00	04/25/25 14:53	1
Beryllium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 14:53	1
Boron	**8.16**		0.400		mg/L		04/24/25 09:00	04/28/25 15:22	4
Cadmium	<0.000200		0.000200		mg/L		04/24/25 09:00	04/25/25 14:53	1
Calcium	**125**		0.500		mg/L		04/24/25 09:00	04/25/25 14:53	1
Chromium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:53	1
Cobalt	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 14:53	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:53	1
Iron	<0.100		0.100		mg/L		04/24/25 09:00	04/25/25 14:53	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 14:53	1
Lithium	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 14:53	1
Magnesium	**53.2**		0.500		mg/L		04/24/25 09:00	04/25/25 14:53	1
Manganese	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 14:53	1
Molybdenum	**0.0109**		0.00200		mg/L		04/24/25 09:00	04/25/25 14:53	1
Nickel	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:53	1
Selenium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:53	1
Strontium	**0.107**		0.00100		mg/L		04/24/25 09:00	04/25/25 14:53	1
Thallium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 14:53	1
Vanadium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 14:53	1
Zinc	<0.0200		0.0200		mg/L		04/24/25 09:00	04/25/25 14:53	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/29/25 09:26	04/29/25 15:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.257**		0.100		mg/L			05/02/25 09:00	1
Sulfate (ASTM D516-16)	**309**		50.0		mg/L			04/30/25 11:56	10
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88		mg/L			04/23/25 09:51	1
Total Dissolved Solids (SM 2540C)	**766**		50.0		mg/L			04/22/25 14:38	1
Chloride (SM 4500 Cl- E)	**7.79**		2.00		mg/L			04/26/25 14:46	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.5**	**HF**	1.0		SU			04/22/25 09:31	1

Client Sample ID: QC-2

Date Collected: 04/18/25 10:15
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/24/25 09:00	04/25/25 13:18	1
Antimony	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:18	1
Arsenic	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:18	1
Barium	**0.250**		0.00200		mg/L		04/24/25 09:00	04/25/25 13:18	1
Beryllium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 13:18	1
Boron	<0.100		0.100		mg/L		04/24/25 09:00	04/25/25 13:18	1
Cadmium	<0.000200		0.000200		mg/L		04/24/25 09:00	04/25/25 13:18	1
Calcium	**108**		0.500		mg/L		04/24/25 09:00	04/25/25 13:18	1
Chromium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:18	1
Cobalt	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 13:18	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:18	1
Iron	**2.19**		0.100		mg/L		04/24/25 09:00	04/25/25 13:18	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 13:18	1
Lithium	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 13:18	1
Magnesium	**35.9**		0.500		mg/L		04/24/25 09:00	04/25/25 13:18	1
Manganese	**0.464**		0.0100		mg/L		04/24/25 09:00	04/25/25 13:18	1
Molybdenum	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:18	1
Nickel	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:18	1
Selenium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:18	1
Strontium	**0.155**		0.00100		mg/L		04/24/25 09:00	04/25/25 13:18	1
Thallium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 13:18	1
Vanadium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:18	1
Zinc	<0.0200		0.0200		mg/L		04/24/25 09:00	04/25/25 13:18	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/29/25 09:26	04/29/25 15:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.198**		0.100		mg/L			05/02/25 09:03	1
Sulfate (ASTM D516-16)	**35.8**		5.00		mg/L			04/30/25 12:38	1
Total Suspended Solids (USGS I-3765-85)	**7.00**		3.00		mg/L			04/23/25 10:22	1
Total Dissolved Solids (SM 2540C)	**488**		50.0		mg/L			04/22/25 14:38	1
Chloride (SM 4500 Cl- E)	**42.2**		2.00		mg/L			04/26/25 14:47	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			04/22/25 09:32	1

Client Sample ID: Leachate

Date Collected: 04/18/25 10:45
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-7

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<2.50		2.50		mg/L		04/24/25 09:00	04/29/25 13:40	50
Antimony	<0.0400		0.0400		mg/L		04/24/25 09:00	04/28/25 15:29	20
Arsenic	**2.39**		0.100		mg/L		04/24/25 09:00	04/29/25 13:40	50
Barium	**0.0501**		0.00200		mg/L		04/24/25 09:00	04/25/25 15:05	1
Beryllium	<0.0200		0.0200		mg/L		04/24/25 09:00	04/28/25 15:29	20
Boron	**69.8**		5.00		mg/L		04/24/25 09:00	04/29/25 13:40	50
Cadmium	**0.000529**		0.000200		mg/L		04/24/25 09:00	04/25/25 15:05	1
Calcium	**434**		25.0		mg/L		04/24/25 09:00	04/29/25 13:40	50
Chromium	<0.250		0.250		mg/L		04/24/25 09:00	04/29/25 13:40	50
Cobalt	<0.0250		0.0250		mg/L		04/24/25 09:00	04/29/25 13:40	50
Copper	<0.250		0.250		mg/L		04/24/25 09:00	04/29/25 13:40	50
Iron	**3.90**		2.00		mg/L		04/24/25 09:00	04/28/25 15:29	20
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 15:05	1
Lithium	**0.395**		0.200		mg/L		04/24/25 09:00	04/28/25 15:29	20
Magnesium	**61.9**		10.0		mg/L		04/24/25 09:00	04/28/25 15:29	20
Manganese	**2.10**		0.200		mg/L		04/24/25 09:00	04/28/25 15:29	20
Molybdenum	**1.55**		0.0400		mg/L		04/24/25 09:00	04/28/25 15:29	20
Nickel	<0.250		0.250		mg/L		04/24/25 09:00	04/29/25 13:40	50
Selenium	<0.250		0.250		mg/L		04/24/25 09:00	04/29/25 13:40	50
Strontium	**6.27**		0.0200		mg/L		04/24/25 09:00	04/28/25 15:29	20
Thallium	**0.00244**		0.00100		mg/L		04/24/25 09:00	04/25/25 15:05	1
Vanadium	<0.250		0.250		mg/L		04/24/25 09:00	04/29/25 13:40	50
Zinc	<0.0200		0.0200		mg/L		04/24/25 09:00	04/25/25 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		04/30/25 13:14	05/01/25 12:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**3.18**		0.100		mg/L			05/02/25 09:07	1
Sulfate (ASTM D516-16)	**192**		50.0		mg/L			04/30/25 12:20	10
Total Suspended Solids (USGS I-3765-85)	**2.25**		1.88		mg/L			04/23/25 09:51	1
Total Dissolved Solids (SM 2540C)	**7600**		250		mg/L			04/22/25 14:38	1
Chloride (SM 4500 Cl- E)	**81.6**		20.0		mg/L			04/26/25 14:47	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**8.9**	**HF**	1.0		SU			04/22/25 09:33	1

Definitions/Glossary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-1
SDG: 310-290523

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.

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

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-452476/1-A
Matrix: Water
Analysis Batch: 452834

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452476

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/24/25 09:00	04/25/25 13:53	1
Antimony	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:53	1
Arsenic	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:53	1
Barium	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:53	1
Beryllium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 13:53	1
Boron	<0.100		0.100		mg/L		04/24/25 09:00	04/25/25 13:53	1
Cadmium	<0.000200		0.000200		mg/L		04/24/25 09:00	04/25/25 13:53	1
Calcium	<0.500		0.500		mg/L		04/24/25 09:00	04/25/25 13:53	1
Chromium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:53	1
Cobalt	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 13:53	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:53	1
Iron	<0.100		0.100		mg/L		04/24/25 09:00	04/25/25 13:53	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 13:53	1
Lithium	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 13:53	1
Magnesium	<0.500		0.500		mg/L		04/24/25 09:00	04/25/25 13:53	1
Manganese	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 13:53	1
Molybdenum	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 13:53	1
Nickel	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:53	1
Selenium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:53	1
Strontium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 13:53	1
Thallium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 13:53	1
Vanadium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 13:53	1
Zinc	<0.0200		0.0200		mg/L		04/24/25 09:00	04/25/25 13:53	1

Lab Sample ID: MB 310-452476/1-A
Matrix: Water
Analysis Batch: 452981

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452476

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<0.500		0.500		mg/L		04/24/25 09:00	04/28/25 15:03	1

Lab Sample ID: LCS 310-452476/2-A
Matrix: Water
Analysis Batch: 452834

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452476

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.200	0.1948		mg/L		97	80 - 120
Antimony	0.200	0.2018		mg/L		101	80 - 120
Arsenic	0.200	0.1879		mg/L		94	80 - 120
Barium	0.100	0.09572		mg/L		96	80 - 120
Beryllium	0.100	0.08910		mg/L		89	80 - 120
Boron	0.200	0.2002		mg/L		100	80 - 120
Cadmium	0.100	0.09203		mg/L		92	80 - 120
Calcium	2.00	1.685		mg/L		84	80 - 120
Chromium	0.100	0.09229		mg/L		92	80 - 120
Cobalt	0.100	0.09518		mg/L		95	80 - 120
Copper	0.200	0.1845		mg/L		92	80 - 120
Iron	0.200	0.1929		mg/L		96	80 - 120
Lead	0.200	0.1908		mg/L		95	80 - 120

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

Lab Sample ID: LCS 310-452476/2-A
Matrix: Water
Analysis Batch: 452834

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452476

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	0.200	0.1887		mg/L		94	80 - 120
Magnesium	2.00	1.790		mg/L		89	80 - 120
Manganese	0.100	0.08930		mg/L		89	80 - 120
Molybdenum	0.200	0.1822		mg/L		91	80 - 120
Nickel	0.200	0.1842		mg/L		92	80 - 120
Selenium	0.400	0.3564		mg/L		89	80 - 120
Strontium	0.200	0.1810		mg/L		90	80 - 120
Thallium	0.100	0.08520		mg/L		85	80 - 120
Vanadium	0.100	0.09263		mg/L		93	80 - 120
Zinc	0.200	0.1773		mg/L		89	80 - 120

Lab Sample ID: LCS 310-452476/2-A
Matrix: Water
Analysis Batch: 452981

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452476

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	2.00	1.796		mg/L		90	80 - 120

Lab Sample ID: MB 310-452480/1-A
Matrix: Water
Analysis Batch: 452834

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452480

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/24/25 09:00	04/25/25 12:42	1
Antimony	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 12:42	1
Arsenic	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 12:42	1
Barium	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 12:42	1
Beryllium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 12:42	1
Boron	<0.100		0.100		mg/L		04/24/25 09:00	04/25/25 12:42	1
Cadmium	<0.000200		0.000200		mg/L		04/24/25 09:00	04/25/25 12:42	1
Calcium	<0.500		0.500		mg/L		04/24/25 09:00	04/25/25 12:42	1
Chromium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 12:42	1
Cobalt	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 12:42	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 12:42	1
Iron	<0.100		0.100		mg/L		04/24/25 09:00	04/25/25 12:42	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 12:42	1
Lithium	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 12:42	1
Magnesium	<0.500		0.500		mg/L		04/24/25 09:00	04/25/25 12:42	1
Manganese	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 12:42	1
Molybdenum	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 12:42	1
Nickel	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 12:42	1
Selenium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 12:42	1
Strontium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 12:42	1
Thallium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 12:42	1
Vanadium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 12:42	1
Zinc	<0.0200		0.0200		mg/L		04/24/25 09:00	04/25/25 12:42	1

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

Lab Sample ID: LCS 310-452480/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 452834 — **Prep Batch: 452480**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.200	0.2140		mg/L		107	80 - 120
Antimony	0.200	0.2186		mg/L		109	80 - 120
Arsenic	0.200	0.2068		mg/L		103	80 - 120
Barium	0.100	0.1059		mg/L		106	80 - 120
Beryllium	0.100	0.09833		mg/L		98	80 - 120
Boron	0.200	0.2114		mg/L		106	80 - 120
Cadmium	0.100	0.1016		mg/L		102	80 - 120
Calcium	2.00	1.858		mg/L		93	80 - 120
Chromium	0.100	0.1025		mg/L		103	80 - 120
Cobalt	0.100	0.1061		mg/L		106	80 - 120
Copper	0.200	0.2061		mg/L		103	80 - 120
Iron	0.200	0.2191		mg/L		110	80 - 120
Lead	0.200	0.2087		mg/L		104	80 - 120
Lithium	0.200	0.2054		mg/L		103	80 - 120
Magnesium	2.00	1.965		mg/L		98	80 - 120
Manganese	0.100	0.09914		mg/L		99	80 - 120
Molybdenum	0.200	0.2018		mg/L		101	80 - 120
Nickel	0.200	0.2055		mg/L		103	80 - 120
Selenium	0.400	0.3892		mg/L		97	80 - 120
Strontium	0.200	0.2015		mg/L		101	80 - 120
Thallium	0.100	0.09259		mg/L		93	80 - 120
Vanadium	0.100	0.1024		mg/L		102	80 - 120
Zinc	0.200	0.2025		mg/L		101	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-452864/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453118 — **Prep Batch: 452864**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/29/25 09:26	04/29/25 14:57	1

Lab Sample ID: LCS 310-452864/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453118 — **Prep Batch: 452864**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001647		mg/L		99	80 - 120

Lab Sample ID: MB 310-453106/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453403 — **Prep Batch: 453106**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/30/25 13:14	05/01/25 11:56	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 310-453106/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453403 — **Prep Batch: 453106**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00167	0.001769		mg/L		106	80 - 120		

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-453564/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453564

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.100		0.100		mg/L			05/02/25 08:27	1

Lab Sample ID: LCS 310-453564/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453564

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride			2.00	2.034		mg/L		102	90 - 110		

Lab Sample ID: 310-304703-1 MS — **Client Sample ID: MW-4B**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453564

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	0.268		1.00	1.117		mg/L		85	75 - 125		

Lab Sample ID: 310-304703-1 MSD — **Client Sample ID: MW-4B**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453564

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.268		1.00	1.198		mg/L		93	75 - 125	7	20

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-453231/35 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453231

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			04/30/25 11:49	1

Lab Sample ID: LCS 310-453231/36 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453231

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			10.0	8.688		mg/L		87	85 - 115		

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-452431/1
Matrix: Water
Analysis Batch: 452431

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00		mg/L			04/23/25 09:51	1

Lab Sample ID: LCS 310-452431/2
Matrix: Water
Analysis Batch: 452431

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	112.0		mg/L		112	81 - 116

Lab Sample ID: MB 310-452446/1
Matrix: Water
Analysis Batch: 452446

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00		mg/L			04/23/25 10:22	1

Lab Sample ID: LCS 310-452446/2
Matrix: Water
Analysis Batch: 452446

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	106.0		mg/L		106	81 - 116

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

Lab Sample ID: MB 310-452347/1
Matrix: Water
Analysis Batch: 452347

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			04/22/25 14:38	1

Lab Sample ID: LCS 310-452347/2
Matrix: Water
Analysis Batch: 452347

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	974.0		mg/L		97	88 - 110

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-452818/77
Matrix: Water
Analysis Batch: 452818

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.00		2.00		mg/L			04/26/25 15:13	1

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: MB 310-452818/83
Matrix: Water
Analysis Batch: 452818

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.00		2.00		mg/L			04/26/25 15:16	1

Lab Sample ID: LCS 310-452818/84
Matrix: Water
Analysis Batch: 452818

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	10.58		mg/L		106	90 - 110

Lab Sample ID: 310-304703-3 MSD
Matrix: Water
Analysis Batch: 452818

Client Sample ID: MW-6A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	15.8		10.0	25.13		mg/L		94	73 - 110	3	14

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-452271/1
Matrix: Water
Analysis Batch: 452271

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

Metals

Prep Batch: 452476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	3005A	
310-304703-4	MW-14A	Total/NA	Water	3005A	
310-304703-5	MW-15A	Total/NA	Water	3005A	
310-304703-7	Leachate	Total/NA	Water	3005A	
MB 310-452476/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452476/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 452480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-2	MW-5B	Total/NA	Water	3005A	
310-304703-3	MW-6A	Total/NA	Water	3005A	
310-304703-6	QC-2	Total/NA	Water	3005A	
MB 310-452480/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452480/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 452834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	6020B	452476
310-304703-2	MW-5B	Total/NA	Water	6020B	452480
310-304703-3	MW-6A	Total/NA	Water	6020B	452480
310-304703-4	MW-14A	Total/NA	Water	6020B	452476
310-304703-5	MW-15A	Total/NA	Water	6020B	452476
310-304703-6	QC-2	Total/NA	Water	6020B	452480
310-304703-7	Leachate	Total/NA	Water	6020B	452476
MB 310-452476/1-A	Method Blank	Total/NA	Water	6020B	452476
MB 310-452480/1-A	Method Blank	Total/NA	Water	6020B	452480
LCS 310-452476/2-A	Lab Control Sample	Total/NA	Water	6020B	452476
LCS 310-452480/2-A	Lab Control Sample	Total/NA	Water	6020B	452480

Prep Batch: 452864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	7470A	
310-304703-2	MW-5B	Total/NA	Water	7470A	
310-304703-3	MW-6A	Total/NA	Water	7470A	
310-304703-4	MW-14A	Total/NA	Water	7470A	
310-304703-5	MW-15A	Total/NA	Water	7470A	
310-304703-6	QC-2	Total/NA	Water	7470A	
MB 310-452864/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-452864/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 452981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	6020B	452476
310-304703-4	MW-14A	Total/NA	Water	6020B	452476
310-304703-5	MW-15A	Total/NA	Water	6020B	452476
310-304703-7	Leachate	Total/NA	Water	6020B	452476
MB 310-452476/1-A	Method Blank	Total/NA	Water	6020B	452476
LCS 310-452476/2-A	Lab Control Sample	Total/NA	Water	6020B	452476

Metals

Analysis Batch: 453087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-7	Leachate	Total/NA	Water	6020B	452476

Prep Batch: 453106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-7	Leachate	Total/NA	Water	7470A	
MB 310-453106/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-453106/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 453118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	7470A	452864
310-304703-2	MW-5B	Total/NA	Water	7470A	452864
310-304703-3	MW-6A	Total/NA	Water	7470A	452864
310-304703-4	MW-14A	Total/NA	Water	7470A	452864
310-304703-5	MW-15A	Total/NA	Water	7470A	452864
310-304703-6	QC-2	Total/NA	Water	7470A	452864
MB 310-452864/1-A	Method Blank	Total/NA	Water	7470A	452864
LCS 310-452864/2-A	Lab Control Sample	Total/NA	Water	7470A	452864

Analysis Batch: 453403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-7	Leachate	Total/NA	Water	7470A	453106
MB 310-453106/1-A	Method Blank	Total/NA	Water	7470A	453106
LCS 310-453106/2-A	Lab Control Sample	Total/NA	Water	7470A	453106

General Chemistry

Analysis Batch: 452271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	SM 4500 H+ B	
310-304703-2	MW-5B	Total/NA	Water	SM 4500 H+ B	
310-304703-3	MW-6A	Total/NA	Water	SM 4500 H+ B	
310-304703-4	MW-14A	Total/NA	Water	SM 4500 H+ B	
310-304703-5	MW-15A	Total/NA	Water	SM 4500 H+ B	
310-304703-6	QC-2	Total/NA	Water	SM 4500 H+ B	
310-304703-7	Leachate	Total/NA	Water	SM 4500 H+ B	
LCS 310-452271/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 452347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	SM 2540C	
310-304703-2	MW-5B	Total/NA	Water	SM 2540C	
310-304703-3	MW-6A	Total/NA	Water	SM 2540C	
310-304703-4	MW-14A	Total/NA	Water	SM 2540C	
310-304703-5	MW-15A	Total/NA	Water	SM 2540C	
310-304703-6	QC-2	Total/NA	Water	SM 2540C	
310-304703-7	Leachate	Total/NA	Water	SM 2540C	
MB 310-452347/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-452347/2	Lab Control Sample	Total/NA	Water	SM 2540C	

General Chemistry

Analysis Batch: 452431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-3	MW-6A	Total/NA	Water	I-3765-85	
310-304703-4	MW-14A	Total/NA	Water	I-3765-85	
310-304703-5	MW-15A	Total/NA	Water	I-3765-85	
310-304703-7	Leachate	Total/NA	Water	I-3765-85	
MB 310-452431/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452431/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 452446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	I-3765-85	
310-304703-2	MW-5B	Total/NA	Water	I-3765-85	
310-304703-6	QC-2	Total/NA	Water	I-3765-85	
MB 310-452446/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452446/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 452818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	SM 4500 Cl- E	
310-304703-2	MW-5B	Total/NA	Water	SM 4500 Cl- E	
310-304703-3	MW-6A	Total/NA	Water	SM 4500 Cl- E	
310-304703-4	MW-14A	Total/NA	Water	SM 4500 Cl- E	
310-304703-5	MW-15A	Total/NA	Water	SM 4500 Cl- E	
310-304703-6	QC-2	Total/NA	Water	SM 4500 Cl- E	
310-304703-7	Leachate	Total/NA	Water	SM 4500 Cl- E	
MB 310-452818/77	Method Blank	Total/NA	Water	SM 4500 Cl- E	
MB 310-452818/83	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-452818/84	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
310-304703-3 MSD	MW-6A	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 453231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	D516-16	
310-304703-2	MW-5B	Total/NA	Water	D516-16	
310-304703-3	MW-6A	Total/NA	Water	D516-16	
310-304703-4	MW-14A	Total/NA	Water	D516-16	
310-304703-5	MW-15A	Total/NA	Water	D516-16	
310-304703-6	QC-2	Total/NA	Water	D516-16	
310-304703-7	Leachate	Total/NA	Water	D516-16	
MB 310-453231/35	Method Blank	Total/NA	Water	D516-16	
LCS 310-453231/36	Lab Control Sample	Total/NA	Water	D516-16	

Analysis Batch: 453564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	4500 F C-2011	
310-304703-2	MW-5B	Total/NA	Water	4500 F C-2011	
310-304703-3	MW-6A	Total/NA	Water	4500 F C-2011	
310-304703-4	MW-14A	Total/NA	Water	4500 F C-2011	
310-304703-5	MW-15A	Total/NA	Water	4500 F C-2011	
310-304703-6	QC-2	Total/NA	Water	4500 F C-2011	
310-304703-7	Leachate	Total/NA	Water	4500 F C-2011	
MB 310-453564/5	Method Blank	Total/NA	Water	4500 F C-2011	

General Chemistry (Continued)

Analysis Batch: 453564 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-453564/6	Lab Control Sample	Total/NA	Water	4500 F C-2011	
310-304703-1 MS	MW-4B	Total/NA	Water	4500 F C-2011	
310-304703-1 MSD	MW-4B	Total/NA	Water	4500 F C-2011	

Client Sample ID: MW-4B

Date Collected: 04/18/25 09:45
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452476	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452834	NFT2	EET CF	04/25/25 14:58
Total/NA	Prep	3005A			452476	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452981	NFT2	EET CF	04/28/25 15:27
Total/NA	Prep	7470A			452864	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 15:44
Total/NA	Analysis	4500 F C-2011		1	453564	WZC8	EET CF	05/02/25 08:34
Total/NA	Analysis	D516-16		5	453231	WZC8	EET CF	04/30/25 11:55
Total/NA	Analysis	I-3765-85		1	452446	HE7K	EET CF	04/23/25 10:22
Total/NA	Analysis	SM 2540C		1	452347	XJ7V	EET CF	04/22/25 14:38
Total/NA	Analysis	SM 4500 Cl- E		1	452818	ENB7	EET CF	04/26/25 15:15
Total/NA	Analysis	SM 4500 H+ B		1	452271	W9YR	EET CF	04/22/25 09:27

Client Sample ID: MW-5B

Date Collected: 04/18/25 08:35
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452480	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452834	NFT2	EET CF	04/25/25 13:13
Total/NA	Prep	7470A			452864	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 15:46
Total/NA	Analysis	4500 F C-2011		1	453564	WZC8	EET CF	05/02/25 08:44
Total/NA	Analysis	D516-16		5	453231	WZC8	EET CF	04/30/25 11:55
Total/NA	Analysis	I-3765-85		1	452446	HE7K	EET CF	04/23/25 10:22
Total/NA	Analysis	SM 2540C		1	452347	XJ7V	EET CF	04/22/25 14:38
Total/NA	Analysis	SM 4500 Cl- E		10	452818	ENB7	EET CF	04/26/25 15:15
Total/NA	Analysis	SM 4500 H+ B		1	452271	W9YR	EET CF	04/22/25 09:28

Client Sample ID: MW-6A

Date Collected: 04/18/25 10:15
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452480	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452834	NFT2	EET CF	04/25/25 13:20
Total/NA	Prep	7470A			452864	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 15:48
Total/NA	Analysis	4500 F C-2011		1	453564	WZC8	EET CF	05/02/25 08:47
Total/NA	Analysis	D516-16		1	453231	WZC8	EET CF	04/30/25 12:37
Total/NA	Analysis	I-3765-85		1	452431	HE7K	EET CF	04/23/25 09:51
Total/NA	Analysis	SM 2540C		1	452347	XJ7V	EET CF	04/22/25 14:38
Total/NA	Analysis	SM 4500 Cl- E		1	452818	ENB7	EET CF	04/26/25 15:17

Lab Chronicle

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-1
SDG: 310-290523

Client Sample ID: MW-6A

Date Collected: 04/18/25 10:15
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 4500 H+ B		1	452271	W9YR	EET CF	04/22/25 09:29

Client Sample ID: MW-14A

Date Collected: 04/17/25 08:15
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452476	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452834	NFT2	EET CF	04/25/25 14:56
Total/NA	Prep	3005A			452476	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		4	452981	NFT2	EET CF	04/28/25 15:24
Total/NA	Prep	7470A			452864	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 15:50
Total/NA	Analysis	4500 F C-2011		1	453564	WZC8	EET CF	05/02/25 08:51
Total/NA	Analysis	D516-16		50	453231	WZC8	EET CF	04/30/25 11:56
Total/NA	Analysis	I-3765-85		1	452431	HE7K	EET CF	04/23/25 09:51
Total/NA	Analysis	SM 2540C		1	452347	XJ7V	EET CF	04/22/25 14:38
Total/NA	Analysis	SM 4500 Cl- E		1	452818	ENB7	EET CF	04/26/25 14:46
Total/NA	Analysis	SM 4500 H+ B		1	452271	W9YR	EET CF	04/22/25 09:30

Client Sample ID: MW-15A

Date Collected: 04/17/25 10:10
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452476	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452834	NFT2	EET CF	04/25/25 14:53
Total/NA	Prep	3005A			452476	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		4	452981	NFT2	EET CF	04/28/25 15:22
Total/NA	Prep	7470A			452864	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 15:53
Total/NA	Analysis	4500 F C-2011		1	453564	WZC8	EET CF	05/02/25 09:00
Total/NA	Analysis	D516-16		10	453231	WZC8	EET CF	04/30/25 11:56
Total/NA	Analysis	I-3765-85		1	452431	HE7K	EET CF	04/23/25 09:51
Total/NA	Analysis	SM 2540C		1	452347	XJ7V	EET CF	04/22/25 14:38
Total/NA	Analysis	SM 4500 Cl- E		1	452818	ENB7	EET CF	04/26/25 14:46
Total/NA	Analysis	SM 4500 H+ B		1	452271	W9YR	EET CF	04/22/25 09:31

Lab Chronicle

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-1
SDG: 310-290523

Client Sample ID: QC-2

Lab Sample ID: 310-304703-6

Date Collected: 04/18/25 10:15
Date Received: 04/22/25 08:25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452480	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452834	NFT2	EET CF	04/25/25 13:18
Total/NA	Prep	7470A			452864	F5MW	EET CF	04/29/25 09:26
Total/NA	Analysis	7470A		1	453118	F5MW	EET CF	04/29/25 15:55
Total/NA	Analysis	4500 F C-2011		1	453564	WZC8	EET CF	05/02/25 09:03
Total/NA	Analysis	D516-16		1	453231	WZC8	EET CF	04/30/25 12:38
Total/NA	Analysis	I-3765-85		1	452446	HE7K	EET CF	04/23/25 10:22
Total/NA	Analysis	SM 2540C		1	452347	XJ7V	EET CF	04/22/25 14:38
Total/NA	Analysis	SM 4500 Cl- E		1	452818	ENB7	EET CF	04/26/25 14:47
Total/NA	Analysis	SM 4500 H+ B		1	452271	W9YR	EET CF	04/22/25 09:32

Client Sample ID: Leachate

Lab Sample ID: 310-304703-7

Date Collected: 04/18/25 10:45
Date Received: 04/22/25 08:25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452476	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452834	NFT2	EET CF	04/25/25 15:05
Total/NA	Prep	3005A			452476	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		20	452981	NFT2	EET CF	04/28/25 15:29
Total/NA	Prep	3005A			452476	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		50	453087	NFT2	EET CF	04/29/25 13:40
Total/NA	Prep	7470A			453106	F5MW	EET CF	04/30/25 13:14
Total/NA	Analysis	7470A		1	453403	F5MW	EET CF	05/01/25 12:45
Total/NA	Analysis	4500 F C-2011		1	453564	WZC8	EET CF	05/02/25 09:07
Total/NA	Analysis	D516-16		10	453231	WZC8	EET CF	04/30/25 12:20
Total/NA	Analysis	I-3765-85		1	452431	HE7K	EET CF	04/23/25 09:51
Total/NA	Analysis	SM 2540C		1	452347	XJ7V	EET CF	04/22/25 14:38
Total/NA	Analysis	SM 4500 Cl- E		10	452818	ENB7	EET CF	04/26/25 14:47
Total/NA	Analysis	SM 4500 H+ B		1	452271	W9YR	EET CF	04/22/25 09:33

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-1
SDG: 310-290523

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

Method Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-1
SDG: 310-290523

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF

Protocol References:

ASTM = ASTM International

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.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-304703 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information				
Client: Muscatine Power & Water				
City/State:	CITY Muscatine	STATE IA	Project:	
Receipt Information				
Date/Time Received:	DATE 4/22/25	TIME 0825	Received By:	
Delivery Type: ☒ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:				
Condition of Cooler/Containers				
Sample(s) received in Cooler?	☒ Yes ☐ No	*If yes:* Cooler ID:		
Multiple Coolers?	☒ Yes ☐ No	*If yes:* Cooler # 1 of 2		
Cooler Custody Seals Present? No	☒ Yes ☐ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No		
Sample Custody Seals Present? No	☐ Yes ☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No		
Trip Blank Present?	☐ Yes ☒ No	*If yes:* Which VOA samples are in cooler? ↓		
Temperature Record				
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: ☐ NONE				
Thermometer ID: R		Correction Factor (°C): +0.0		
• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature				
Uncorrected Temp (°C): 1.6		Corrected Temp (°C): 1.6		
• **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? ☐ Yes ☐ No a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No				
NOTE If yes, contact PM before proceeding If no, proceed with login				
Additional Comments				

Document: CED-P-SAM-FRM45521
Revision 26
Date: 27 Jan 2022

Eurofins Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power + Water

City/State: CITY Muscatine STATE IA Project:

Receipt Information

Date/Time Received: DATE 4/22/25 TIME 0825 Received By. [illegible]

Delivery Type. ☒ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE

Thermometer ID: R Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.0 Corrected Temp (°C): 2.0

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested:			
City: Muscatine	TAT Requested (days):			
State Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water CCR Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Spring 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A CCR List, 7470A Mercury	2540C TDS, SM4500_H+ pH	9056A Chloride, Fluoride, Sulfate	Radium-226	Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N				
MW-4B	4/18/25	0945	G	GW			X	X	X	X	X		
MW-5B	4/18/25	0835	G	GW			X	X	X	X	X		
MW-6A	4/18/25	1015	G	GW			X	X	X	X	X		
MW-8			G	GW			X	X	X	X	X		
MW-10			G	GW			X	X	X	X	X		
MW-14A	4/17/25	0815	G	GW			X	X	X	X	X		
MW-15A	4/17/25	1010	G	GW			X	X	X	X	X		
MW-21			G	GW			X	X	X	X	X		
MW-22			G	GW			X	X	X	X	X		
MW-23			G	GW			X	X	X	X	X		
MW-24			G	GW			X	X	X	X	X		

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

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

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

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/22/25 0820	Company

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

5/2/2025

ns Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days)			
State, Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water CCR Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Spring 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A CCR List, 7470A Mercury	2540C TDS, SM4500_H+ pH	9056A Chloride, Fluoride, Sulfate	Radium-226	Radium-228	Total Number of containers	Special Instructions/Note
			Preservation Code:				D	N	N				
MW-26			G	GW			X	X	X	X	X		
MW-27			G	GW			X	X	X	X	X		
QC1			G	GW			X	X	X	X	X		
QC2	4/18/25	1015	G	GW			X	X	X	X	X		
Leachate	4/18/25	1045	G	Leachate									

Possible Hazard Identification

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

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

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

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

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/22/25 0825	Company

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

5/2/2025

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:

Address: 1700 Dick Drake Way	Due Date Requested	Analysis Requested	Preservation Codes
City: Muscatine	TAT Requested (days)		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
State, Zip: IA, 52761			
Phone:	PO #: 251639		
Email: sbennett@mpw.org and neil.hoskins@mpw.org	WO #:		Other:
Project Name: Muscatine Power & Water State Landfill	TestAmerica Project #: 310-290523		
Site: Iowa	Spring 2025 Sampling		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List	9056A Chloride, Fluoride, Sulfate	TSS	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N			
MW-4B	4/18/25	0945	G	GW			X	X	X		
MW-5B	4/18/25	0835	G	GW			X	X	X		
MW-6A	4/18/25	1015	G	GW			X	X	X		
MW-8				GW			X	X	X		
MW-10				GW			X	X	X		
MW-14A	4/17/25	0815	G	GW			X	X	X		
MW-15A	4/17/25	1010	G	GW			X	X	X		
MW-21				GW			X	X	X		
MW-22				GW			X	X	X		
MW-23				GW			X	X	X		
MW-24				GW			X	X	X		

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

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

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

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/22/25 0825	Company

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

5/2/2025

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days)			
State, Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water State Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Spring 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List	9056A Chloride, Fluoride, Sulfate	TSS	Total Number of containers	Special Instructions/Note.
			Preservation Code.				D	N			
MW-26				GW			X	X	X		
MW-27				GW			X	X	X		
QC1				GW			X	X	X		
QC2	4/18/25	1200	G	GW			X	X	X		
Leachate	4/18/25	1045	G	Leachate							

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

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

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

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/22/25 0825	Company

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

5/2/2025

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-304703-1
SDG Number: 310-290523

Login Number: 304703
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	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Sam Bennett
Muscatine Power & Water
1700 Dick Drake Way
PO BOX 899
Muscatine, Iowa 52761

Generated 5/22/2025 12:28:20 PM

JOB DESCRIPTION

Muscatine Power & Water Landfill
310-290523

JOB NUMBER

310-304703-2

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

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



Generated
5/22/2025 12:28:20 PM

Authorized for release by
Bob Michels, Project Manager I
Bob.Michels@et.eurofinsus.com
(319)277-2401

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Job ID: 310-304703-2 — Eurofins Cedar Falls

Job Narrative
310-304703-2

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 4/22/2025 8:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6°C and 2.0°C.

Gas Flow Proportional Counter
Method 9320_Ra228: Radium 228 Batch 714095

The detection goal was not met for the following sample due to a reduced sample volume used in prep attributed to the presence of matrix interferences. Leachate (310-304703-7)

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.

Sample Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-2
SDG: 310-290523

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-304703-1	MW-4B	Water	04/18/25 09:45	04/22/25 08:25
310-304703-2	MW-5B	Water	04/18/25 08:35	04/22/25 08:25
310-304703-3	MW-6A	Water	04/18/25 10:15	04/22/25 08:25
310-304703-4	MW-14A	Water	04/17/25 08:15	04/22/25 08:25
310-304703-5	MW-15A	Water	04/17/25 10:10	04/22/25 08:25
310-304703-6	QC-2	Water	04/18/25 10:15	04/22/25 08:25
310-304703-7	Leachate	Water	04/18/25 10:45	04/22/25 08:25

Detection Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-2
SDG: 310-290523

Client Sample ID: MW-4B — Lab Sample ID: 310-304703-1

No Detections.

Client Sample ID: MW-5B — Lab Sample ID: 310-304703-2

No Detections.

Client Sample ID: MW-6A — Lab Sample ID: 310-304703-3

No Detections.

Client Sample ID: MW-14A — Lab Sample ID: 310-304703-4

No Detections.

Client Sample ID: MW-15A — Lab Sample ID: 310-304703-5

No Detections.

Client Sample ID: QC-2 — Lab Sample ID: 310-304703-6

No Detections.

Client Sample ID: Leachate — Lab Sample ID: 310-304703-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-4B

Date Collected: 04/18/25 09:45
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-1

Matrix: Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.461	U	0.233	0.233	1.00	0.461	pCi/L	04/24/25 07:22	05/21/25 15:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.0*		*30 - 110*	*04/24/25 07:22*	*05/21/25 15:07*	*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	U	0.339	0.340	1.00	0.613	pCi/L	04/24/25 07:28	05/21/25 09:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.0*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:58*	*1*
Y Carrier	*75.5*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:58*	*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	<0.613	U	0.411	0.412	5.00	0.613	pCi/L		05/21/25 14:09	1

Client Sample ID: MW-5B

Date Collected: 04/18/25 08:35
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-2

Matrix: Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.365	U	0.224	0.225	1.00	0.365	pCi/L	04/24/25 07:22	05/21/25 15:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.1*		*30 - 110*	*04/24/25 07:22*	*05/21/25 15:08*	*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	**0.916**		0.494	0.501	1.00	0.699	pCi/L	04/24/25 07:28	05/21/25 09:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.1*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:58*	*1*
Y Carrier	*70.3*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:58*	*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	**1.11**		0.542	0.549	5.00	0.699	pCi/L		05/21/25 14:09	1

Client Sample ID: MW-6A

Date Collected: 04/18/25 10:15
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-3

Matrix: Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.328	U	0.191	0.192	1.00	0.328	pCi/L	04/24/25 07:22	05/21/25 15:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*30 - 110*	*04/24/25 07:22*	*05/21/25 15:08*	*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	<0.630	U	0.389	0.390	1.00	0.630	pCi/L	04/24/25 07:28	05/21/25 09:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:58*	*1*
Y Carrier	*77.8*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:58*	*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	<0.630	U	0.433	0.435	5.00	0.630	pCi/L		05/21/25 14:09	1

Client Sample ID: MW-14A

Date Collected: 04/17/25 08:15
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-4

Matrix: Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.340	U	0.210	0.211	1.00	0.340	pCi/L	04/24/25 07:22	05/21/25 15:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*30 - 110*	*04/24/25 07:22*	*05/21/25 15:08*	*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	<0.672	U	0.426	0.429	1.00	0.672	pCi/L	04/24/25 07:28	05/21/25 09:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:59*	*1*
Y Carrier	*76.3*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:59*	*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	**0.683**		0.475	0.478	5.00	0.672	pCi/L		05/22/25 12:18	1

Client Sample ID: MW-15A

Date Collected: 04/17/25 10:10
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-5

Matrix: Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.295	U	0.183	0.184	1.00	0.295	pCi/L	04/24/25 07:22	05/21/25 15:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*30 - 110*	*04/24/25 07:22*	*05/21/25 15:09*	*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	<0.553	U	0.333	0.334	1.00	0.553	pCi/L	04/24/25 07:28	05/21/25 09:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.1*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:59*	*1*
Y Carrier	*78.9*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:59*	*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	<0.553	U	0.380	0.381	5.00	0.553	pCi/L		05/22/25 12:18	1

Client Sample ID: QC-2

Lab Sample ID: 310-304703-6

Date Collected: 04/18/25 10:15

Matrix: Water

Date Received: 04/22/25 08:25

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.342	U	0.228	0.229	1.00	0.342	pCi/L	04/24/25 07:22	05/21/25 15:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.9*		*30 - 110*	*04/24/25 07:22*	*05/21/25 15:09*	*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	<0.731	U	0.440	0.441	1.00	0.731	pCi/L	04/24/25 07:28	05/21/25 09:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.9*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:59*	*1*
Y Carrier	*74.4*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:59*	*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	<0.731	U	0.496	0.497	5.00	0.731	pCi/L		05/22/25 12:18	1

Client Sample ID: Leachate

Date Collected: 04/18/25 10:45
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-7

Matrix: Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.750	U	0.369	0.369	1.00	0.750	pCi/L	04/24/25 07:22	05/21/25 15:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.8*		*30 - 110*	*04/24/25 07:22*	*05/21/25 15:09*	*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	<1.29	U G	0.748	0.749	1.00	1.29	pCi/L	04/24/25 07:28	05/21/25 09:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.8*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:59*	*1*
Y Carrier	*78.1*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:59*	*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	<1.29	U	0.834	0.835	5.00	1.29	pCi/L		05/21/25 14:09	1

Definitions/Glossary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-2
SDG: 310-290523

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

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

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-714094/1-A
Matrix: Water
Analysis Batch: 718628

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 714094

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.303	U	0.160	0.160	1.00	0.303	pCi/L	04/24/25 07:22	05/21/25 15:06	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.9*		*30 - 110*	*04/24/25 07:22*	*05/21/25 15:06*	*1*

Lab Sample ID: LCS 160-714094/2-A
Matrix: Water
Analysis Batch: 718628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 714094

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			9.58	8.526		1.18	1.00	0.286	pCi/L	89	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.5*		*30 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-714095/1-A
Matrix: Water
Analysis Batch: 718628

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 714095

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	<0.588	U	0.345	0.346	1.00	0.588	pCi/L	04/24/25 07:28	05/21/25 09:57	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.9*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:57*	*1*
Y Carrier	*78.5*		*30 - 110*	*04/24/25 07:28*	*05/21/25 09:57*	*1*

Lab Sample ID: LCS 160-714095/2-A
Matrix: Water
Analysis Batch: 718628

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 714095

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			9.43	9.668		1.35	1.00	0.627	pCi/L	103	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.5*		*30 - 110*
Y Carrier	*77.8*		*30 - 110*

QC Association Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-2
SDG: 310-290523

Rad

Prep Batch: 714094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	PrecSep-21	
310-304703-2	MW-5B	Total/NA	Water	PrecSep-21	
310-304703-3	MW-6A	Total/NA	Water	PrecSep-21	
310-304703-4	MW-14A	Total/NA	Water	PrecSep-21	
310-304703-5	MW-15A	Total/NA	Water	PrecSep-21	
310-304703-6	QC-2	Total/NA	Water	PrecSep-21	
310-304703-7	Leachate	Total/NA	Water	PrecSep-21	
MB 160-714094/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-714094/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 714095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304703-1	MW-4B	Total/NA	Water	PrecSep_0	
310-304703-2	MW-5B	Total/NA	Water	PrecSep_0	
310-304703-3	MW-6A	Total/NA	Water	PrecSep_0	
310-304703-4	MW-14A	Total/NA	Water	PrecSep_0	
310-304703-5	MW-15A	Total/NA	Water	PrecSep_0	
310-304703-6	QC-2	Total/NA	Water	PrecSep_0	
310-304703-7	Leachate	Total/NA	Water	PrecSep_0	
MB 160-714095/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-714095/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-2
SDG: 310-290523

Client Sample ID: MW-4B
Date Collected: 04/18/25 09:45
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			714094	OGC	EET SL	04/24/25 07:22
Total/NA	Analysis	9315		1	718628	SWS	EET SL	05/21/25 15:07
Total/NA	Prep	PrecSep_0			714095	OGC	EET SL	04/24/25 07:28
Total/NA	Analysis	9320		1	718628	SWS	EET SL	05/21/25 09:58
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/21/25 14:09

Client Sample ID: MW-5B
Date Collected: 04/18/25 08:35
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			714094	OGC	EET SL	04/24/25 07:22
Total/NA	Analysis	9315		1	718629	SWS	EET SL	05/21/25 15:08
Total/NA	Prep	PrecSep_0			714095	OGC	EET SL	04/24/25 07:28
Total/NA	Analysis	9320		1	718628	SWS	EET SL	05/21/25 09:58
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/21/25 14:09

Client Sample ID: MW-6A
Date Collected: 04/18/25 10:15
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			714094	OGC	EET SL	04/24/25 07:22
Total/NA	Analysis	9315		1	718629	SWS	EET SL	05/21/25 15:08
Total/NA	Prep	PrecSep_0			714095	OGC	EET SL	04/24/25 07:28
Total/NA	Analysis	9320		1	718628	SWS	EET SL	05/21/25 09:58
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/21/25 14:09

Client Sample ID: MW-14A
Date Collected: 04/17/25 08:15
Date Received: 04/22/25 08:25

Lab Sample ID: 310-304703-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			714094	OGC	EET SL	04/24/25 07:22
Total/NA	Analysis	9315		1	718629	SWS	EET SL	05/21/25 15:08
Total/NA	Prep	PrecSep_0			714095	OGC	EET SL	04/24/25 07:28
Total/NA	Analysis	9320		1	718628	SWS	EET SL	05/21/25 09:59
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/22/25 12:18

Lab Chronicle

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-2
SDG: 310-290523

Client Sample ID: MW-15A

Lab Sample ID: 310-304703-5

Date Collected: 04/17/25 10:10
Date Received: 04/22/25 08:25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			714094	OGC	EET SL	04/24/25 07:22
Total/NA	Analysis	9315		1	718629	SWS	EET SL	05/21/25 15:09
Total/NA	Prep	PrecSep_0			714095	OGC	EET SL	04/24/25 07:28
Total/NA	Analysis	9320		1	718628	SWS	EET SL	05/21/25 09:59
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/22/25 12:18

Client Sample ID: QC-2

Lab Sample ID: 310-304703-6

Date Collected: 04/18/25 10:15
Date Received: 04/22/25 08:25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			714094	OGC	EET SL	04/24/25 07:22
Total/NA	Analysis	9315		1	718629	SWS	EET SL	05/21/25 15:09
Total/NA	Prep	PrecSep_0			714095	OGC	EET SL	04/24/25 07:28
Total/NA	Analysis	9320		1	718628	SWS	EET SL	05/21/25 09:59
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/22/25 12:18

Client Sample ID: Leachate

Lab Sample ID: 310-304703-7

Date Collected: 04/18/25 10:45
Date Received: 04/22/25 08:25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			714094	OGC	EET SL	04/24/25 07:22
Total/NA	Analysis	9315		1	718629	SWS	EET SL	05/21/25 15:09
Total/NA	Prep	PrecSep_0			714095	OGC	EET SL	04/24/25 07:28
Total/NA	Analysis	9320		1	718628	SWS	EET SL	05/21/25 09:59
Total/NA	Analysis	Ra226_Ra228		1	718210	FLC	EET SL	05/21/25 14:09

Laboratory References:

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

Accreditation/Certification Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-2
SDG: 310-290523

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	12-01-26

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: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-2
SDG: 310-290523

Method	Method Description	Protocol	Laboratory
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
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 SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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310-304703 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power & Water

City/State: CITY Muscatine STATE IA Project:

Receipt Information

Date/Time Received: DATE 4/22/25 TIME 0825 Received By:

Delivery Type: ☒ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 1 of 2
Cooler Custody Seals Present?	☒ Yes	☐ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE

Thermometer ID: R Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 1.6 Corrected Temp (°C): 1.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power + Water

City/State: CITY Muscatine STATE IA Project:

Receipt Information

Date/Time Received: DATE 4/22/25 TIME 0825 Received By. [illegible]

Delivery Type. ☒ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 2 of 2

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE

Thermometer ID: R Correction Factor (°C): +0.0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 2.0 Corrected Temp (°C): 2.0

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested:			
City: Muscatine	TAT Requested (days):			
State Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water CCR Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Spring 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A CCR List, 7470A Mercury	2540C TDS, SM4500_H+ pH	9056A Chloride, Fluoride, Sulfate	Radium-226	Radium-228								Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N											
MW-4B	4/18/25	0945	G	GW			X	X	X	X	X									
MW-5B	4/18/25	0835	G	GW			X	X	X	X	X									
MW-6A	4/18/25	1015	G	GW			X	X	X	X	X									
MW-8			G	GW			X	X	X	X	X									
MW-10			G	GW			X	X	X	X	X									
MW-14A	4/17/25	0815	G	GW			X	X	X	X	X									
MW-15A	4/17/25	1010	G	GW			X	X	X	X	X									
MW-21			G	GW			X	X	X	X	X									
MW-22			G	GW			X	X	X	X	X									
MW-23			G	GW			X	X	X	X	X									
MW-24			G	GW			X	X	X	X	X									

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

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

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

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/22/25 0820	Company

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

5/22/2025

ns Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days)			
State, Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water CCR Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Spring 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A CCR List, 7470A Mercury	2540C TDS, SM4500_H+ pH	9056A Chloride, Fluoride, Sulfate	Radium-226	Radium-228	Total Number of containers	Special Instructions/Note
			Preservation Code:				D	N	N				
MW-26			G	GW			X	X	X	X	X		
MW-27			G	GW			X	X	X	X	X		
QC1			G	GW			X	X	X	X	X		
QC2	4/18/25	1015	G	GW			X	X	X	X	X		
Leachate	4/18/25	1045	G	Leachate									

Possible Hazard Identification

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

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

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

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

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/22/25 0825	Company

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

5/22/2025

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:

Address: 1700 Dick Drake Way	Due Date Requested	Analysis Requested	Preservation Codes
City: Muscatine	TAT Requested (days)		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
State, Zip: IA, 52761			
Phone:	PO #: 251639		
Email: sbennett@mpw.org and neil.hoskins@mpw.org	WO #:		Other:
Project Name: Muscatine Power & Water State Landfill	TestAmerica Project #: 310-290523		
Site: Iowa	Spring 2025 Sampling		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List	9056A Chloride, Fluoride, Sulfate	TSS	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N			
MW-4B	4/18/25	0945	G	GW			X	X	X		
MW-5B	4/18/25	0835	G	GW			X	X	X		
MW-6A	4/18/25	1015	G	GW			X	X	X		
MW-8				GW			X	X	X		
MW-10				GW			X	X	X		
MW-14A	4/17/25	0815	G	GW			X	X	X		
MW-15A	4/17/25	1010	G	GW			X	X	X		
MW-21				GW			X	X	X		
MW-22				GW			X	X	X		
MW-23				GW			X	X	X		
MW-24				GW			X	X	X		

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

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

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

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/22/25 0825	Company

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

5/22/2025

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days)			
State, Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water State Landfill	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Spring 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List	9056A Chloride, Fluoride, Sulfate	TSS	Total Number of containers	Special Instructions/Note.
			Preservation Code.				D	N			
MW-26				GW			X	X	X		
MW-27				GW			X	X	X		
QC1				GW			X	X	X		
QC2	4/18/25	1200	G	GW			X	X	X		
Leachate	4/18/25	1045	G	Leachate							

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

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

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

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 4/22/25 0825	Company

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

5/22/2025

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Michels, Bob C	Carrier Tracking No(s): N/A	COC No: 310-82275.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Bob.Michels@et.eurofinsus.com	State of Origin: Iowa	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State - Iowa		Job #: 310-304703-2
Address: 13715 Rider Trail North, ,	Due Date Requested: 5/21/2025			Preservation Codes: -
City: Earth City	TAT Requested (days): N/A			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Muscatine Power & Water Landfill	Project #: 31017990			Other: N/A
Site: N/A	SSOW#: N/A			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
MW-4B (310-304703-1)	4/18/25	09:45 Central	G	Water			X	X	X	2	
MW-5B (310-304703-2)	4/18/25	08:35 Central	G	Water			X	X	X	2	
MW-6A (310-304703-3)	4/18/25	10:15 Central	G	Water			X	X	X	2	
MW-14A (310-304703-4)	4/17/25	08:15 Central	G	Water			X	X	X	2	
MW-15A (310-304703-5)	4/17/25	10:10 Central	G	Water			X	X	X	2	
QC-2 (310-304703-6)	4/18/25	10:15 Central	G	Water			X	X	X	2	
Leachate (310-304703-7)	4/18/25	10:45 Central	G	Water			X	X	X	2	

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

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

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	4/22/25 1310		FED EX		
2	FedEx			Sierra Worthington	4/23/25 0830	EMSL
3						

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

Ver: 10/10/2024

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-304703-2
SDG Number: 310-290523

Login Number: 304703
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	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-304703-2
SDG Number: 310-290523

Login Number: 304703
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 04/23/25 10:36 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Tracer/Carrier Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Landfill

Job ID: 310-304703-2
SDG: 310-290523

Method: 9315 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
310-304703-1	MW-4B	87.0
310-304703-2	MW-5B	82.1
310-304703-3	MW-6A	92.3
310-304703-4	MW-14A	86.4
310-304703-5	MW-15A	94.1
310-304703-6	QC-2	84.9
310-304703-7	Leachate	78.8
LCS 160-714094/2-A	Lab Control Sample	88.5
MB 160-714094/1-A	Method Blank	93.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
310-304703-1	MW-4B	87.0	75.5
310-304703-2	MW-5B	82.1	70.3
310-304703-3	MW-6A	92.3	77.8
310-304703-4	MW-14A	86.4	76.3
310-304703-5	MW-15A	94.1	78.9
310-304703-6	QC-2	84.9	74.4
310-304703-7	Leachate	78.8	78.1
LCS 160-714095/2-A	Lab Control Sample	88.5	77.8
MB 160-714095/1-A	Method Blank	93.9	78.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

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

ANALYTICAL REPORT

PREPARED FOR

Attn: Sam Bennett
Muscatine Power & Water
1700 Dick Drake Way
PO BOX 899
Muscatine, Iowa 52761

Generated 4/30/2025 2:04:31 PM

JOB DESCRIPTION

Muscatine Power & Water State Parameters

JOB NUMBER

310-304576-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

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



Generated
4/30/2025 2:04:31 PM

Authorized for release by
Bob Michels, Project Manager I
Bob.Michels@et.eurofinsus.com
(319)277-2401

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Job ID: 310-304576-1 Eurofins Cedar Falls

Job Narrative
310-304576-1

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 4/18/2025 8:40 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 0.3°C.

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.

Sample Summary

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-304576-1	SW-22	Water	04/14/25 13:55	04/18/25 08:40
310-304576-2	SW-23	Water	04/14/25 14:45	04/18/25 08:40
310-304576-3	SW-24	Water	04/14/25 14:30	04/18/25 08:40
310-304576-4	SW-25	Water	04/14/25 14:05	04/18/25 08:40
310-304576-5	SW-26	Water	04/14/25 15:00	04/18/25 08:40

Detection Summary

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

Client Sample ID: SW-22 — Lab Sample ID: 310-304576-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0741		0.00200		mg/L	1		6020B	Total/NA
Calcium	51.5		0.500		mg/L	1		6020B	Total/NA
Iron	0.181		0.100		mg/L	1		6020B	Total/NA
Magnesium	22.6		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0486		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.103		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.271		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	15.7		5.00		mg/L	1		D516-16	Total/NA
Chloride	19.8		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: SW-23 — Lab Sample ID: 310-304576-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0586		0.00200		mg/L	1		6020B	Total/NA
Boron	0.755		0.100		mg/L	1		6020B	Total/NA
Calcium	63.1		0.500		mg/L	1		6020B	Total/NA
Iron	0.183		0.100		mg/L	1		6020B	Total/NA
Magnesium	28.0		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0584		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.128		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.272		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	34.9		25.0		mg/L	5		D516-16	Total/NA
Chloride	20.4		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: SW-24 — Lab Sample ID: 310-304576-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0213		0.00200		mg/L	1		6020B	Total/NA
Boron	7.82		0.400		mg/L	4		6020B	Total/NA
Calcium	183		0.500		mg/L	1		6020B	Total/NA
Magnesium	78.7		0.500		mg/L	1		6020B	Total/NA
Molybdenum	0.00216		0.00200		mg/L	1		6020B	Total/NA
Strontium	0.271		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.200		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	129		25.0		mg/L	5		D516-16	Total/NA
Chloride	14.7		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: SW-25 — Lab Sample ID: 310-304576-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0503		0.00200		mg/L	1		6020B	Total/NA
Boron	3.57		0.100		mg/L	1		6020B	Total/NA
Calcium	143		0.500		mg/L	1		6020B	Total/NA
Magnesium	49.6		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0159		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.206		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.244		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	69.3		25.0		mg/L	5		D516-16	Total/NA
Chloride	17.0		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

Client Sample ID: SW-26
Lab Sample ID: 310-304576-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	1.28		0.0500		mg/L	1		6020B	Total/NA
Barium	0.0737		0.00200		mg/L	1		6020B	Total/NA
Boron	0.140		0.100		mg/L	1		6020B	Total/NA
Calcium	66.2		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.140		0.000500		mg/L	1		6020B	Total/NA
Copper	0.00773		0.00500		mg/L	1		6020B	Total/NA
Iron	1.61		0.100		mg/L	1		6020B	Total/NA
Lead	0.00299		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0651		0.0100		mg/L	1		6020B	Total/NA
Magnesium	23.1		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0545		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00699		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.0375		0.00500		mg/L	1		6020B	Total/NA
Strontium	0.402		0.00100		mg/L	1		6020B	Total/NA
Vanadium	0.00637		0.00500		mg/L	1		6020B	Total/NA
Zinc	0.0207		0.0200		mg/L	1		6020B	Total/NA
Fluoride	0.256		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	45.5		25.0		mg/L	5		D516-16	Total/NA
Chloride	22.7	F1	2.00		mg/L	1		SM 4500 Cl- E	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

Client Sample ID: SW-22
Lab Sample ID: 310-304576-1
Date Collected: 04/14/25 13:55
Matrix: Water
Date Received: 04/18/25 08:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/24/25 09:00	04/25/25 15:15	1
Arsenic	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 15:15	1
Barium	**0.0741**		0.00200		mg/L		04/24/25 09:00	04/25/25 15:15	1
Beryllium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 15:15	1
Boron	<0.100		0.100		mg/L		04/24/25 09:00	04/28/25 12:37	1
Calcium	**51.5**		0.500		mg/L		04/24/25 09:00	04/25/25 15:15	1
Cobalt	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 15:15	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 15:15	1
Iron	**0.181**		0.100		mg/L		04/24/25 09:00	04/25/25 15:15	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 15:15	1
Lithium	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 15:15	1
Magnesium	**22.6**		0.500		mg/L		04/24/25 09:00	04/25/25 15:15	1
Manganese	**0.0486**		0.0100		mg/L		04/24/25 09:00	04/25/25 15:15	1
Molybdenum	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 15:15	1
Nickel	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 15:15	1
Selenium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 15:15	1
Strontium	**0.103**		0.00100		mg/L		04/24/25 09:00	04/25/25 15:15	1
Vanadium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 15:15	1
Zinc	<0.0200		0.0200		mg/L		04/24/25 09:00	04/25/25 15:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.271**		0.100		mg/L			04/22/25 12:42	1
Sulfate (ASTM D516-16)	**15.7**		5.00		mg/L			04/30/25 11:21	1
Chloride (SM 4500 Cl- E)	**19.8**		2.00		mg/L			04/23/25 16:28	1

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

Client Sample ID: SW-23
Lab Sample ID: 310-304576-2
Date Collected: 04/14/25 14:45
Matrix: Water
Date Received: 04/18/25 08:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/23/25 09:30	04/23/25 17:50	1
Arsenic	<0.00200		0.00200		mg/L		04/23/25 09:30	04/23/25 17:50	1
Barium	**0.0586**		0.00200		mg/L		04/23/25 09:30	04/23/25 17:50	1
Beryllium	<0.00100		0.00100		mg/L		04/23/25 09:30	04/23/25 17:50	1
Boron	**0.755**		0.100		mg/L		04/23/25 09:30	04/23/25 17:50	1
Calcium	**63.1**		0.500		mg/L		04/23/25 09:30	04/23/25 17:50	1
Cobalt	<0.000500		0.000500		mg/L		04/23/25 09:30	04/23/25 17:50	1
Copper	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:50	1
Iron	**0.183**		0.100		mg/L		04/23/25 09:30	04/23/25 17:50	1
Lead	<0.000500		0.000500		mg/L		04/23/25 09:30	04/23/25 17:50	1
Lithium	<0.0100		0.0100		mg/L		04/23/25 09:30	04/23/25 17:50	1
Magnesium	**28.0**		0.500		mg/L		04/23/25 09:30	04/23/25 17:50	1
Manganese	**0.0584**		0.0100		mg/L		04/23/25 09:30	04/23/25 17:50	1
Molybdenum	<0.00200		0.00200		mg/L		04/23/25 09:30	04/23/25 17:50	1
Nickel	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:50	1
Selenium	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:50	1
Strontium	**0.128**		0.00100		mg/L		04/23/25 09:30	04/23/25 17:50	1
Vanadium	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:50	1
Zinc	<0.0200		0.0200		mg/L		04/23/25 09:30	04/23/25 17:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.272**		0.100		mg/L			04/22/25 12:51	1
Sulfate (ASTM D516-16)	**34.9**		25.0		mg/L			04/29/25 13:32	5
Chloride (SM 4500 Cl- E)	**20.4**		2.00		mg/L			04/23/25 16:28	1

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

Client Sample ID: SW-24
Lab Sample ID: 310-304576-3
Date Collected: 04/14/25 14:30
Matrix: Water
Date Received: 04/18/25 08:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/24/25 09:00	04/25/25 15:24	1
Arsenic	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 15:24	1
Barium	**0.0213**		0.00200		mg/L		04/24/25 09:00	04/25/25 15:24	1
Beryllium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 15:24	1
Boron	**7.82**		0.400		mg/L		04/24/25 09:00	04/28/25 12:49	4
Calcium	**183**		0.500		mg/L		04/24/25 09:00	04/25/25 15:24	1
Cobalt	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 15:24	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 15:24	1
Iron	<0.100		0.100		mg/L		04/24/25 09:00	04/25/25 15:24	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 15:24	1
Lithium	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 15:24	1
Magnesium	**78.7**		0.500		mg/L		04/24/25 09:00	04/25/25 15:24	1
Manganese	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 15:24	1
Molybdenum	**0.00216**		0.00200		mg/L		04/24/25 09:00	04/25/25 15:24	1
Nickel	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 15:24	1
Selenium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 15:24	1
Strontium	**0.271**		0.00100		mg/L		04/24/25 09:00	04/25/25 15:24	1
Vanadium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 15:24	1
Zinc	<0.0200		0.0200		mg/L		04/24/25 09:00	04/25/25 15:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.200**		0.100		mg/L			04/22/25 12:55	1
Sulfate (ASTM D516-16)	**129**		25.0		mg/L			04/29/25 13:44	5
Chloride (SM 4500 Cl- E)	**14.7**		2.00		mg/L			04/23/25 16:29	1

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

Client Sample ID: SW-25
Lab Sample ID: 310-304576-4
Date Collected: 04/14/25 14:05
Matrix: Water
Date Received: 04/18/25 08:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/23/25 09:30	04/23/25 17:53	1
Arsenic	<0.00200		0.00200		mg/L		04/23/25 09:30	04/23/25 17:53	1
Barium	**0.0503**		0.00200		mg/L		04/23/25 09:30	04/23/25 17:53	1
Beryllium	<0.00100		0.00100		mg/L		04/23/25 09:30	04/23/25 17:53	1
Boron	**3.57**		0.100		mg/L		04/23/25 09:30	04/23/25 17:53	1
Calcium	**143**		0.500		mg/L		04/23/25 09:30	04/23/25 17:53	1
Cobalt	<0.000500		0.000500		mg/L		04/23/25 09:30	04/23/25 17:53	1
Copper	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:53	1
Iron	<0.100		0.100		mg/L		04/23/25 09:30	04/23/25 17:53	1
Lead	<0.000500		0.000500		mg/L		04/23/25 09:30	04/23/25 17:53	1
Lithium	<0.0100		0.0100		mg/L		04/23/25 09:30	04/23/25 17:53	1
Magnesium	**49.6**		0.500		mg/L		04/23/25 09:30	04/23/25 17:53	1
Manganese	**0.0159**		0.0100		mg/L		04/23/25 09:30	04/23/25 17:53	1
Molybdenum	<0.00200		0.00200		mg/L		04/23/25 09:30	04/23/25 17:53	1
Nickel	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:53	1
Selenium	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:53	1
Strontium	**0.206**		0.00100		mg/L		04/23/25 09:30	04/23/25 17:53	1
Vanadium	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:53	1
Zinc	<0.0200		0.0200		mg/L		04/23/25 09:30	04/23/25 17:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.244**		0.100		mg/L			04/22/25 12:58	1
Sulfate (ASTM D516-16)	**69.3**		25.0		mg/L			04/29/25 13:45	5
Chloride (SM 4500 Cl- E)	**17.0**		2.00		mg/L			04/23/25 16:29	1

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

Client Sample ID: SW-26
Lab Sample ID: 310-304576-5
Date Collected: 04/14/25 15:00
Matrix: Water
Date Received: 04/18/25 08:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.28		0.0500		mg/L		04/22/25 10:30	04/23/25 14:10	1
Arsenic	<0.00200		0.00200		mg/L		04/22/25 10:30	04/23/25 14:10	1
Barium	0.0737		0.00200		mg/L		04/22/25 10:30	04/23/25 14:10	1
Beryllium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/23/25 14:10	1
Boron	0.140		0.100		mg/L		04/22/25 10:30	04/23/25 14:10	1
Calcium	66.2		0.500		mg/L		04/22/25 10:30	04/23/25 14:10	1
Cobalt	0.140		0.000500		mg/L		04/22/25 10:30	04/23/25 14:10	1
Copper	0.00773		0.00500		mg/L		04/22/25 10:30	04/23/25 14:10	1
Iron	1.61		0.100		mg/L		04/22/25 10:30	04/23/25 14:10	1
Lead	0.00299		0.000500		mg/L		04/22/25 10:30	04/23/25 14:10	1
Lithium	0.0651		0.0100		mg/L		04/22/25 10:30	04/23/25 14:10	1
Magnesium	23.1		0.500		mg/L		04/22/25 10:30	04/23/25 14:10	1
Manganese	0.0545		0.0100		mg/L		04/22/25 10:30	04/23/25 14:10	1
Molybdenum	0.00699		0.00200		mg/L		04/22/25 10:30	04/23/25 14:10	1
Nickel	<0.00500		0.00500		mg/L		04/22/25 10:30	04/23/25 14:10	1
Selenium	0.0375		0.00500		mg/L		04/22/25 10:30	04/23/25 14:10	1
Strontium	0.402		0.00100		mg/L		04/22/25 10:30	04/23/25 14:10	1
Vanadium	0.00637		0.00500		mg/L		04/22/25 10:30	04/23/25 14:10	1
Zinc	0.0207		0.0200		mg/L		04/22/25 10:30	04/23/25 14:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	0.256		0.100		mg/L			04/22/25 13:01	1
Sulfate (ASTM D516-16)	45.5		25.0		mg/L			04/29/25 13:33	5
Chloride (SM 4500 Cl- E)	22.7	F1	2.00		mg/L			04/26/25 14:31	1

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

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.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

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

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-452233/1-A
Matrix: Water
Analysis Batch: 452529

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452233

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/22/25 10:30	04/23/25 13:42	1
Arsenic	<0.00200		0.00200		mg/L		04/22/25 10:30	04/23/25 13:42	1
Barium	<0.00200		0.00200		mg/L		04/22/25 10:30	04/23/25 13:42	1
Beryllium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/23/25 13:42	1
Boron	<0.100		0.100		mg/L		04/22/25 10:30	04/23/25 13:42	1
Calcium	<0.500		0.500		mg/L		04/22/25 10:30	04/23/25 13:42	1
Cobalt	<0.000500		0.000500		mg/L		04/22/25 10:30	04/23/25 13:42	1
Copper	<0.00500		0.00500		mg/L		04/22/25 10:30	04/23/25 13:42	1
Iron	<0.100		0.100		mg/L		04/22/25 10:30	04/23/25 13:42	1
Lead	<0.000500		0.000500		mg/L		04/22/25 10:30	04/23/25 13:42	1
Lithium	<0.0100		0.0100		mg/L		04/22/25 10:30	04/23/25 13:42	1
Magnesium	<0.500		0.500		mg/L		04/22/25 10:30	04/23/25 13:42	1
Manganese	<0.0100		0.0100		mg/L		04/22/25 10:30	04/23/25 13:42	1
Molybdenum	<0.00200		0.00200		mg/L		04/22/25 10:30	04/23/25 13:42	1
Nickel	<0.00500		0.00500		mg/L		04/22/25 10:30	04/23/25 13:42	1
Selenium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/23/25 13:42	1
Strontium	<0.00100		0.00100		mg/L		04/22/25 10:30	04/23/25 13:42	1
Vanadium	<0.00500		0.00500		mg/L		04/22/25 10:30	04/23/25 13:42	1
Zinc	<0.0200		0.0200		mg/L		04/22/25 10:30	04/23/25 13:42	1

Lab Sample ID: LCS 310-452233/2-A
Matrix: Water
Analysis Batch: 452529

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452233

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.200	0.2135		mg/L		107	80 - 120
Arsenic	0.200	0.2077		mg/L		104	80 - 120
Barium	0.100	0.1030		mg/L		103	80 - 120
Beryllium	0.100	0.09641		mg/L		96	80 - 120
Boron	0.200	0.2132		mg/L		107	80 - 120
Calcium	2.00	1.867		mg/L		93	80 - 120
Cobalt	0.100	0.1052		mg/L		105	80 - 120
Copper	0.200	0.2086		mg/L		104	80 - 120
Iron	0.200	0.2084		mg/L		104	80 - 120
Lead	0.200	0.2115		mg/L		106	80 - 120
Lithium	0.200	0.2022		mg/L		101	80 - 120
Magnesium	2.00	2.016		mg/L		101	80 - 120
Manganese	0.100	0.09820		mg/L		98	80 - 120
Molybdenum	0.200	0.1954		mg/L		98	80 - 120
Nickel	0.200	0.2025		mg/L		101	80 - 120
Selenium	0.400	0.3952		mg/L		99	80 - 120
Strontium	0.200	0.1941		mg/L		97	80 - 120
Vanadium	0.100	0.1020		mg/L		102	80 - 120
Zinc	0.200	0.1900		mg/L		95	80 - 120

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

Lab Sample ID: MB 310-452353/1-A
Matrix: Water
Analysis Batch: 452529

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452353

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/23/25 09:30	04/23/25 17:17	1
Arsenic	<0.00200		0.00200		mg/L		04/23/25 09:30	04/23/25 17:17	1
Barium	<0.00200		0.00200		mg/L		04/23/25 09:30	04/23/25 17:17	1
Beryllium	<0.00100		0.00100		mg/L		04/23/25 09:30	04/23/25 17:17	1
Boron	<0.100		0.100		mg/L		04/23/25 09:30	04/23/25 17:17	1
Calcium	<0.500		0.500		mg/L		04/23/25 09:30	04/23/25 17:17	1
Cobalt	<0.000500		0.000500		mg/L		04/23/25 09:30	04/23/25 17:17	1
Copper	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:17	1
Iron	<0.100		0.100		mg/L		04/23/25 09:30	04/23/25 17:17	1
Lead	<0.000500		0.000500		mg/L		04/23/25 09:30	04/23/25 17:17	1
Lithium	<0.0100		0.0100		mg/L		04/23/25 09:30	04/23/25 17:17	1
Magnesium	<0.500		0.500		mg/L		04/23/25 09:30	04/23/25 17:17	1
Manganese	<0.0100		0.0100		mg/L		04/23/25 09:30	04/23/25 17:17	1
Molybdenum	<0.00200		0.00200		mg/L		04/23/25 09:30	04/23/25 17:17	1
Nickel	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:17	1
Selenium	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:17	1
Strontium	<0.00100		0.00100		mg/L		04/23/25 09:30	04/23/25 17:17	1
Vanadium	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:17	1
Zinc	<0.0200		0.0200		mg/L		04/23/25 09:30	04/23/25 17:17	1

Lab Sample ID: LCS 310-452353/2-A
Matrix: Water
Analysis Batch: 452529

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452353

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.200	0.2119		mg/L		106	80 - 120
Arsenic	0.200	0.2036		mg/L		102	80 - 120
Barium	0.100	0.1001		mg/L		100	80 - 120
Beryllium	0.100	0.09319		mg/L		93	80 - 120
Boron	0.200	0.2051		mg/L		103	80 - 120
Calcium	2.00	1.808		mg/L		90	80 - 120
Cobalt	0.100	0.1015		mg/L		102	80 - 120
Copper	0.200	0.2015		mg/L		101	80 - 120
Iron	0.200	0.2041		mg/L		102	80 - 120
Lead	0.200	0.2092		mg/L		105	80 - 120
Lithium	0.200	0.1953		mg/L		98	80 - 120
Magnesium	2.00	1.937		mg/L		97	80 - 120
Manganese	0.100	0.09562		mg/L		96	80 - 120
Molybdenum	0.200	0.1804		mg/L		90	80 - 120
Nickel	0.200	0.1954		mg/L		98	80 - 120
Selenium	0.400	0.3922		mg/L		98	80 - 120
Strontium	0.200	0.1899		mg/L		95	80 - 120
Vanadium	0.100	0.09871		mg/L		99	80 - 120
Zinc	0.200	0.1745		mg/L		87	80 - 120

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

Lab Sample ID: MB 310-452473/1-A
Matrix: Water
Analysis Batch: 452834

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452473

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		04/24/25 09:00	04/25/25 15:10	1
Arsenic	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 15:10	1
Barium	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 15:10	1
Beryllium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 15:10	1
Calcium	<0.500		0.500		mg/L		04/24/25 09:00	04/25/25 15:10	1
Cobalt	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 15:10	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 15:10	1
Iron	<0.100		0.100		mg/L		04/24/25 09:00	04/25/25 15:10	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 15:10	1
Lithium	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 15:10	1
Magnesium	<0.500		0.500		mg/L		04/24/25 09:00	04/25/25 15:10	1
Manganese	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 15:10	1
Molybdenum	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 15:10	1
Nickel	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 15:10	1
Selenium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 15:10	1
Strontium	<0.00100		0.00100		mg/L		04/24/25 09:00	04/25/25 15:10	1
Vanadium	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 15:10	1
Zinc	<0.0200		0.0200		mg/L		04/24/25 09:00	04/25/25 15:10	1

Lab Sample ID: MB 310-452473/1-A
Matrix: Water
Analysis Batch: 452946

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452473

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.100		0.100		mg/L		04/24/25 09:00	04/28/25 12:33	1

Lab Sample ID: LCS 310-452473/2-A
Matrix: Water
Analysis Batch: 452834

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452473

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.200	0.1999		mg/L		100	80 - 120
Arsenic	0.200	0.1990		mg/L		100	80 - 120
Barium	0.100	0.1003		mg/L		100	80 - 120
Beryllium	0.100	0.09355		mg/L		94	80 - 120
Calcium	2.00	1.722		mg/L		86	80 - 120
Cobalt	0.100	0.1005		mg/L		100	80 - 120
Copper	0.200	0.1960		mg/L		98	80 - 120
Iron	0.200	0.2080		mg/L		104	80 - 120
Lead	0.200	0.2067		mg/L		103	80 - 120
Lithium	0.200	0.1956		mg/L		98	80 - 120
Magnesium	2.00	1.848		mg/L		92	80 - 120
Manganese	0.100	0.09447		mg/L		94	80 - 120
Molybdenum	0.200	0.1970		mg/L		99	80 - 120
Nickel	0.200	0.1939		mg/L		97	80 - 120
Selenium	0.400	0.3776		mg/L		94	80 - 120
Strontium	0.200	0.1855		mg/L		93	80 - 120
Vanadium	0.100	0.09717		mg/L		97	80 - 120
Zinc	0.200	0.1870		mg/L		94	80 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: LCS 310-452473/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 452946
Prep Batch: 452473

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			0.200	0.1897		mg/L		95	80 - 120		

Lab Sample ID: 310-304576-1 MS
Client Sample ID: SW-22
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 452834
Prep Batch: 452473

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum	<0.0500		0.200	0.2318		mg/L		98	75 - 125		
Arsenic	<0.00200		0.200	0.1975		mg/L		98	75 - 125		
Barium	0.0741		0.100	0.1693		mg/L		95	75 - 125		
Beryllium	<0.00100		0.100	0.09205		mg/L		92	75 - 125		
Calcium	51.5		2.00	52.91	4	mg/L		72	75 - 125		
Cobalt	<0.000500		0.100	0.09529		mg/L		95	75 - 125		
Copper	<0.00500		0.200	0.1856		mg/L		93	75 - 125		
Iron	0.181		0.200	0.3721		mg/L		96	75 - 125		
Lead	<0.000500		0.200	0.1994		mg/L		100	75 - 125		
Lithium	<0.0100		0.200	0.1912		mg/L		96	75 - 125		
Magnesium	22.6		2.00	24.39	4	mg/L		88	75 - 125		
Manganese	0.0486		0.100	0.1406		mg/L		92	75 - 125		
Molybdenum	<0.00200		0.200	0.1945		mg/L		96	75 - 125		
Nickel	<0.00500		0.200	0.1849		mg/L		92	75 - 125		
Selenium	<0.00500		0.400	0.3788		mg/L		95	75 - 125		
Strontium	0.103		0.200	0.2824		mg/L		90	75 - 125		
Vanadium	<0.00500		0.100	0.09641		mg/L		95	75 - 125		
Zinc	<0.0200		0.200	0.1874		mg/L		94	75 - 125		

Lab Sample ID: 310-304576-1 MS
Client Sample ID: SW-22
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 452946
Prep Batch: 452473

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	<0.100		0.200	0.2372		mg/L		119	75 - 125		

Lab Sample ID: 310-304576-1 MSD
Client Sample ID: SW-22
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 452834
Prep Batch: 452473

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	<0.0500		0.200	0.2344		mg/L		99	75 - 125	1	20
Arsenic	<0.00200		0.200	0.1977		mg/L		98	75 - 125	0	20
Barium	0.0741		0.100	0.1717		mg/L		98	75 - 125	1	20
Beryllium	<0.00100		0.100	0.09390		mg/L		94	75 - 125	2	20
Calcium	51.5		2.00	53.67	4	mg/L		110	75 - 125	1	20
Cobalt	<0.000500		0.100	0.09414		mg/L		94	75 - 125	1	20
Copper	<0.00500		0.200	0.1847		mg/L		92	75 - 125	0	20
Iron	0.181		0.200	0.3716		mg/L		95	75 - 125	0	20
Lead	<0.000500		0.200	0.1972		mg/L		99	75 - 125	1	20
Lithium	<0.0100		0.200	0.1912		mg/L		96	75 - 125	0	20
Magnesium	22.6		2.00	24.56	4	mg/L		96	75 - 125	1	20

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

Lab Sample ID: 310-304576-1 MSD — **Client Sample ID: SW-22**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 452834 — **Prep Batch: 452473**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	0.0486		0.100	0.1411		mg/L		92	75 - 125	0	20
Molybdenum	<0.00200		0.200	0.1934		mg/L		96	75 - 125	1	20
Nickel	<0.00500		0.200	0.1846		mg/L		92	75 - 125	0	20
Selenium	<0.00500		0.400	0.3772		mg/L		94	75 - 125	0	20
Strontium	0.103		0.200	0.2820		mg/L		90	75 - 125	0	20
Vanadium	<0.00500		0.100	0.09494		mg/L		93	75 - 125	2	20
Zinc	<0.0200		0.200	0.1826		mg/L		91	75 - 125	3	20

Lab Sample ID: 310-304576-1 MSD — **Client Sample ID: SW-22**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 452946 — **Prep Batch: 452473**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	<0.100		0.200	0.2212		mg/L		111	75 - 125	7	20

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-452344/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 452344

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.100		0.100		mg/L			04/22/25 11:40	1

Lab Sample ID: LCS 310-452344/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 452344

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride			2.00	2.168		mg/L		108	90 - 110		

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-453112/16 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453112

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			04/29/25 13:21	1

Lab Sample ID: LCS 310-453112/17 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 453112

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			10.0	8.555		mg/L		86	85 - 115		

Method: D516-16 - Sulfate (Continued)

Lab Sample ID: MB 310-453231/16
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 453231

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			04/30/25 11:20	1

Lab Sample ID: LCS 310-453231/17
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 453231

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			10.0	9.949		mg/L		99	85 - 115		

Lab Sample ID: 310-304576-1 MS
Client Sample ID: SW-22
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 453231

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate	15.7		10.0	28.00		mg/L		123	70 - 130		

Lab Sample ID: 310-304576-1 MSD
Client Sample ID: SW-22
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 453231

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	15.7		10.0	26.67		mg/L		110	70 - 130	5	20

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-452503/45
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 452503

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.00		2.00		mg/L			04/23/25 15:34	1

Lab Sample ID: LCS 310-452503/46
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 452503

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			10.0	10.39		mg/L		104	90 - 110		

Lab Sample ID: MB 310-452818/35
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 452818

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.00		2.00		mg/L			04/26/25 14:42	1

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: LCS 310-452818/4
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 452818

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.81		mg/L		108	90 - 110

Lab Sample ID: 310-304576-5 MS
Client Sample ID: SW-26
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 452818

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	22.7	F1	10.0	29.60	F1	mg/L		69	73 - 110

Lab Sample ID: 310-304576-5 MSD
Client Sample ID: SW-26
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 452818

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	22.7	F1	10.0	30.03		mg/L		73	73 - 110	1	14

Metals

Prep Batch: 452233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304576-5	SW-26	Total/NA	Water	3005A	
MB 310-452233/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452233/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 452353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304576-2	SW-23	Total/NA	Water	3005A	
310-304576-4	SW-25	Total/NA	Water	3005A	
MB 310-452353/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452353/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 452473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304576-1	SW-22	Total/NA	Water	3005A	
310-304576-3	SW-24	Total/NA	Water	3005A	
MB 310-452473/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452473/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-304576-1 MS	SW-22	Total/NA	Water	3005A	
310-304576-1 MSD	SW-22	Total/NA	Water	3005A	

Analysis Batch: 452529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304576-2	SW-23	Total/NA	Water	6020B	452353
310-304576-4	SW-25	Total/NA	Water	6020B	452353
310-304576-5	SW-26	Total/NA	Water	6020B	452233
MB 310-452233/1-A	Method Blank	Total/NA	Water	6020B	452233
MB 310-452353/1-A	Method Blank	Total/NA	Water	6020B	452353
LCS 310-452233/2-A	Lab Control Sample	Total/NA	Water	6020B	452233
LCS 310-452353/2-A	Lab Control Sample	Total/NA	Water	6020B	452353

Analysis Batch: 452834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304576-1	SW-22	Total/NA	Water	6020B	452473
310-304576-3	SW-24	Total/NA	Water	6020B	452473
MB 310-452473/1-A	Method Blank	Total/NA	Water	6020B	452473
LCS 310-452473/2-A	Lab Control Sample	Total/NA	Water	6020B	452473
310-304576-1 MS	SW-22	Total/NA	Water	6020B	452473
310-304576-1 MSD	SW-22	Total/NA	Water	6020B	452473

Analysis Batch: 452946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304576-1	SW-22	Total/NA	Water	6020B	452473
310-304576-3	SW-24	Total/NA	Water	6020B	452473
MB 310-452473/1-A	Method Blank	Total/NA	Water	6020B	452473
LCS 310-452473/2-A	Lab Control Sample	Total/NA	Water	6020B	452473
310-304576-1 MS	SW-22	Total/NA	Water	6020B	452473
310-304576-1 MSD	SW-22	Total/NA	Water	6020B	452473

General Chemistry

Analysis Batch: 452344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304576-1	SW-22	Total/NA	Water	4500 F C-2011	
310-304576-2	SW-23	Total/NA	Water	4500 F C-2011	
310-304576-3	SW-24	Total/NA	Water	4500 F C-2011	
310-304576-4	SW-25	Total/NA	Water	4500 F C-2011	
310-304576-5	SW-26	Total/NA	Water	4500 F C-2011	
MB 310-452344/5	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-452344/6	Lab Control Sample	Total/NA	Water	4500 F C-2011	

Analysis Batch: 452503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304576-1	SW-22	Total/NA	Water	SM 4500 Cl- E	
310-304576-2	SW-23	Total/NA	Water	SM 4500 Cl- E	
310-304576-3	SW-24	Total/NA	Water	SM 4500 Cl- E	
310-304576-4	SW-25	Total/NA	Water	SM 4500 Cl- E	
MB 310-452503/45	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-452503/46	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 452818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304576-5	SW-26	Total/NA	Water	SM 4500 Cl- E	
MB 310-452818/35	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-452818/4	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
310-304576-5 MS	SW-26	Total/NA	Water	SM 4500 Cl- E	
310-304576-5 MSD	SW-26	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 453112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304576-2	SW-23	Total/NA	Water	D516-16	
310-304576-3	SW-24	Total/NA	Water	D516-16	
310-304576-4	SW-25	Total/NA	Water	D516-16	
310-304576-5	SW-26	Total/NA	Water	D516-16	
MB 310-453112/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-453112/17	Lab Control Sample	Total/NA	Water	D516-16	

Analysis Batch: 453231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304576-1	SW-22	Total/NA	Water	D516-16	
MB 310-453231/16	Method Blank	Total/NA	Water	D516-16	
LCS 310-453231/17	Lab Control Sample	Total/NA	Water	D516-16	
310-304576-1 MS	SW-22	Total/NA	Water	D516-16	
310-304576-1 MSD	SW-22	Total/NA	Water	D516-16	

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

Client Sample ID: SW-22
Lab Sample ID: 310-304576-1
Date Collected: 04/14/25 13:55
Matrix: Water
Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452473	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452834	NFT2	EET CF	04/25/25 15:15
Total/NA	Prep	3005A			452473	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452946	NFT2	EET CF	04/28/25 12:37
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:42
Total/NA	Analysis	D516-16		1	453231	WZC8	EET CF	04/30/25 11:21
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 16:28

Client Sample ID: SW-23
Lab Sample ID: 310-304576-2
Date Collected: 04/14/25 14:45
Matrix: Water
Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452353	QTZ5	EET CF	04/23/25 09:30
Total/NA	Analysis	6020B		1	452529	NFT2	EET CF	04/23/25 17:50
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:51
Total/NA	Analysis	D516-16		5	453112	WZC8	EET CF	04/29/25 13:32
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 16:28

Client Sample ID: SW-24
Lab Sample ID: 310-304576-3
Date Collected: 04/14/25 14:30
Matrix: Water
Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452473	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452834	NFT2	EET CF	04/25/25 15:24
Total/NA	Prep	3005A			452473	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		4	452946	NFT2	EET CF	04/28/25 12:49
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:55
Total/NA	Analysis	D516-16		5	453112	WZC8	EET CF	04/29/25 13:44
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 16:29

Client Sample ID: SW-25
Lab Sample ID: 310-304576-4
Date Collected: 04/14/25 14:05
Matrix: Water
Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452353	QTZ5	EET CF	04/23/25 09:30
Total/NA	Analysis	6020B		1	452529	NFT2	EET CF	04/23/25 17:53
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 12:58
Total/NA	Analysis	D516-16		5	453112	WZC8	EET CF	04/29/25 13:45
Total/NA	Analysis	SM 4500 Cl- E		1	452503	ENB7	EET CF	04/23/25 16:29

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

Client Sample ID: SW-26
Lab Sample ID: 310-304576-5
Date Collected: 04/14/25 15:00
Matrix: Water
Date Received: 04/18/25 08:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452233	QTZ5	EET CF	04/22/25 10:30
Total/NA	Analysis	6020B		1	452529	NFT2	EET CF	04/23/25 14:10
Total/NA	Analysis	4500 F C-2011		1	452344	WZC8	EET CF	04/22/25 13:01
Total/NA	Analysis	D516-16		5	453112	WZC8	EET CF	04/29/25 13:33
Total/NA	Analysis	SM 4500 Cl- E		1	452818	ENB7	EET CF	04/26/25 14:31

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

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

Method Summary

Client: Muscatine Power & Water
Job ID: 310-304576-1
Project/Site: Muscatine Power & Water State Parameters

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

ASTM = ASTM International

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

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

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-304576 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power & Water

City/State: CITY Muscatine STATE IA Project:

Receipt Information

Date/Time Received: DATE 4/18/25 TIME 0840 Received By: BP

Delivery Type: ☒ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? BP ~~☒ Yes~~ ☒ No *If yes:* Cooler # ~~2~~ of ~~2~~

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: AA 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): 0.3 Corrected Temp (°C): 0.3

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days)			
State Zip: IA, 52761				
Phone:	PO #: 251639			
Email: sbennett@mpw.org	WO #:			
Project Name: Muscatine Power & Water State Parameters	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Spring 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List	9056A Chloride, Fluoride, Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N		
SW-22	4/14/25	1355	G	SW			X	X		
SW-23	4/14/25	1445	G	SW			X	X		
SW-24	4/14/25	1430	G	SW			X	X		
SW-25	4/14/25	1405	G	SW			X	X		
SW-26	4/14/25	1500	G	SW			X	X		

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

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

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

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				4.16.25 6:40	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-304576-1

Login Number: 304576

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.	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	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Sam Bennett
Muscatine Power & Water
1700 Dick Drake Way
PO BOX 899
Muscatine, Iowa 52761

Generated 10/1/2025 4:03:43 PM

JOB DESCRIPTION

Muscatine Power & Water CCR Landfill

JOB NUMBER

310-315538-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

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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10/1/2025 4:03:43 PM

Authorized for release by
Bob Michels, Project Manager I
Bob.Michels@et.eurofinsus.com
(319)277-2401

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Job Narrative
310-315538-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 9/12/2025 8:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.9°C, 1.3°C, 1.7°C and 2.7°C.

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.

Sample Summary

Client: Muscatine Power & Water
Job ID: 310-315538-1
Project/Site: Muscatine Power & Water CCR Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-315538-1	MW-4B	Ground Water	09/10/25 09:45	09/12/25 08:25	Iowa
310-315538-2	MW-5B	Ground Water	09/10/25 12:25	09/12/25 08:25	Iowa
310-315538-3	MW-6A	Ground Water	09/10/25 10:40	09/12/25 08:25	Iowa
310-315538-4	MW-8	Ground Water	09/09/25 09:20	09/12/25 08:25	Iowa
310-315538-5	MW-10	Ground Water	09/08/25 15:10	09/12/25 08:25	Iowa
310-315538-6	MW-14A	Ground Water	09/09/25 13:55	09/12/25 08:25	Iowa
310-315538-7	MW-15A	Ground Water	09/10/25 08:25	09/12/25 08:25	Iowa
310-315538-8	MW-21	Ground Water	09/09/25 12:40	09/12/25 08:25	Iowa
310-315538-9	MW-22	Ground Water	09/08/25 11:45	09/12/25 08:25	Iowa
310-315538-10	MW-23	Ground Water	09/08/25 13:50	09/12/25 08:25	Iowa
310-315538-11	DUP-1	Ground Water	09/08/25 12:00	09/12/25 08:25	Iowa
310-315538-12	DUP-2	Ground Water	09/09/25 12:00	09/12/25 08:25	Iowa
310-315538-13	LEACHATE	Water	09/10/25 14:10	09/12/25 08:25	Iowa

Detection Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-1

Client Sample ID: MW-4B — Lab Sample ID: 310-315538-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.175		0.00200		mg/L	1		6020B	Total/NA
Calcium	94.9		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00247		0.000500		mg/L	1		6020B	Total/NA
Iron	0.931		0.100		mg/L	1		6020B	Total/NA
Magnesium	35.7		0.500		mg/L	1		6020B	Total/NA
Manganese	0.386		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.101		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.274	F1	0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	55.8		25.0		mg/L	5		D516-16	Total/NA
Total Dissolved Solids	442		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	18.9		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.5	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-5B — Lab Sample ID: 310-315538-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.252		0.00200		mg/L	1		6020B	Total/NA
Calcium	114		0.500		mg/L	1		6020B	Total/NA
Iron	2.07		0.100		mg/L	1		6020B	Total/NA
Magnesium	38.3		0.500		mg/L	1		6020B	Total/NA
Manganese	0.530		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.161		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.173		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	47.6		25.0		mg/L	5		D516-16	Total/NA
Total Dissolved Solids	496		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	42.0		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-6A — Lab Sample ID: 310-315538-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.213		0.00200		mg/L	1		6020B	Total/NA
Calcium	79.0		0.500		mg/L	1		6020B	Total/NA
Iron	3.11		0.100		mg/L	1		6020B	Total/NA
Magnesium	27.5		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0942		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.162		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.273		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	20.7		5.00		mg/L	1		D516-16	Total/NA
Total Dissolved Solids	380		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	16.8		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-8 — Lab Sample ID: 310-315538-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00317		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0852		0.00200		mg/L	1		6020B	Total/NA
Calcium	79.6		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00142		0.000500		mg/L	1		6020B	Total/NA
Iron	1.13		0.100		mg/L	1		6020B	Total/NA
Magnesium	32.4		0.500		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-8 (Continued) — Lab Sample ID: 310-315538-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.366		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.151		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.311		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	68.8		25.0		mg/L	5		D516-16	Total/NA
Total Dissolved Solids	384		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	20.8		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.4	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 310-315538-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00429		0.00200		mg/L	1		6020B	Total/NA
Barium	0.172		0.00200		mg/L	1		6020B	Total/NA
Calcium	82.6		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000900		0.000500		mg/L	1		6020B	Total/NA
Iron	2.58		0.100		mg/L	1		6020B	Total/NA
Magnesium	36.4		0.500		mg/L	1		6020B	Total/NA
Manganese	0.165		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00216		0.00200		mg/L	1		6020B	Total/NA
Strontium	0.164		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.218		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	57.0		25.0		mg/L	5		D516-16	Total/NA
Total Dissolved Solids	434		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	8.50		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-14A — Lab Sample ID: 310-315538-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0331		0.00200		mg/L	1		6020B	Total/NA
Boron	16.1		0.400		mg/L	4		6020B	Total/NA
Calcium	277		0.500		mg/L	1		6020B	Total/NA
Magnesium	124		2.00		mg/L	4		6020B	Total/NA
Strontium	0.243		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.261		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	953		125		mg/L	25		D516-16	Total/NA
Total Dissolved Solids	1870		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	15.4		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.3	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-15A — Lab Sample ID: 310-315538-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0302		0.00200		mg/L	1		6020B	Total/NA
Boron	5.51		0.400		mg/L	4		6020B	Total/NA
Calcium	77.2		0.500		mg/L	1		6020B	Total/NA
Magnesium	34.2		0.500		mg/L	1		6020B	Total/NA
Strontium	0.0826		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.293		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	162		25.0		mg/L	5		D516-16	Total/NA
Total Dissolved Solids	518		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	4.50		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-15A (Continued) — Lab Sample ID: 310-315538-7

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.4	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-21 — Lab Sample ID: 310-315538-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0412		0.00200		mg/L	1		6020B	Total/NA
Boron	1.65		0.100		mg/L	1		6020B	Total/NA
Calcium	52.8		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0121		0.0100		mg/L	1		6020B	Total/NA
Magnesium	23.7		0.500		mg/L	1		6020B	Total/NA
Manganese	0.320		0.0100		mg/L	1		6020B	Total/NA
Nickel	0.0206		0.00500		mg/L	1		6020B	Total/NA
Strontium	0.166		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.174		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	135		50.0		mg/L	10		D516-16	Total/NA
Total Dissolved Solids	396		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	5.10		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	6.8	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-22 — Lab Sample ID: 310-315538-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00768		0.00200		mg/L	1		6020B	Total/NA
Barium	0.262		0.00200		mg/L	1		6020B	Total/NA
Boron	0.187		0.100		mg/L	1		6020B	Total/NA
Calcium	74.6		0.500		mg/L	1		6020B	Total/NA
Iron	0.196		0.100		mg/L	1		6020B	Total/NA
Magnesium	31.0		0.500		mg/L	1		6020B	Total/NA
Manganese	0.480		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00510		0.00200		mg/L	1		6020B	Total/NA
Strontium	0.119		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.289		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	149		50.0		mg/L	10		D516-16	Total/NA
Total Dissolved Solids	426		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	14.5		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.6	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: MW-23 — Lab Sample ID: 310-315538-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.209		0.0500		mg/L	1		6020B	Total/NA
Barium	0.0468		0.00200		mg/L	1		6020B	Total/NA
Boron	0.123		0.100		mg/L	1		6020B	Total/NA
Calcium	44.9		0.500		mg/L	1		6020B	Total/NA
Iron	0.192		0.100		mg/L	1		6020B	Total/NA
Magnesium	21.9		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0200		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.0530		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.281		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	25.7		5.00		mg/L	1		D516-16	Total/NA
Total Dissolved Solids	300		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	25.2		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-23 (Continued) — Lab Sample ID: 310-315538-10

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.4	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: DUP-1 — Lab Sample ID: 310-315538-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0203		0.00200		mg/L	1		6020B	Total/NA
Barium	0.279		0.00200		mg/L	1		6020B	Total/NA
Calcium	77.6		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.000670		0.000500		mg/L	1		6020B	Total/NA
Iron	1.23		0.100		mg/L	1		6020B	Total/NA
Magnesium	32.0		0.500		mg/L	1		6020B	Total/NA
Manganese	0.642		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00605		0.00200		mg/L	1		6020B	Total/NA
Strontium	0.105		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.290		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	158		50.0		mg/L	10		D516-16	Total/NA
Total Dissolved Solids	416		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	15.6		2.00		mg/L	1		SM 4500 Cl- E	Total/NA
pH	7.6	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: DUP-2 — Lab Sample ID: 310-315538-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00340		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0947		0.00200		mg/L	1		6020B	Total/NA
Boron	0.132		0.100		mg/L	1		6020B	Total/NA
Calcium	88.7		0.500		mg/L	1		6020B	Total/NA
Cobalt	0.00188		0.000500		mg/L	1		6020B	Total/NA
Iron	1.33		0.100		mg/L	1		6020B	Total/NA
Magnesium	36.0		0.500		mg/L	1		6020B	Total/NA
Manganese	0.526		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.171		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.304		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	61.5		50.0		mg/L	10		D516-16	Total/NA
Total Dissolved Solids	406		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	25.1		20.0		mg/L	10		SM 4500 Cl- E	Total/NA
pH	7.4	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: LEACHATE — Lab Sample ID: 310-315538-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.36		0.0400		mg/L	20		6020B	Total/NA
Boron	50.2		2.00		mg/L	20		6020B	Total/NA
Cadmium	0.000867		0.000200		mg/L	1		6020B	Total/NA
Calcium	455		10.0		mg/L	20		6020B	Total/NA
Lithium	0.192		0.0100		mg/L	1		6020B	Total/NA
Magnesium	23.9		0.500		mg/L	1		6020B	Total/NA
Manganese	0.886		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	2.59		0.0400		mg/L	20		6020B	Total/NA
Strontium	6.18		0.0200		mg/L	20		6020B	Total/NA
Thallium	0.00210		0.00100		mg/L	1		6020B	Total/NA
Vanadium	0.0210		0.00500		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: LEACHATE (Continued)
Lab Sample ID: 310-315538-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.47		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	6720		1000		mg/L	200		D516-16	Total/NA
Total Dissolved Solids	9500		250		mg/L	1		SM 2540C	Total/NA
Chloride	120		20.0		mg/L	10		SM 4500 Cl- E	Total/NA
pH	9.0	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-1

Client Sample ID: MW-4B

Date Collected: 09/10/25 09:45
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-1

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:53	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:53	1
Arsenic	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:53	1
Barium	**0.175**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:53	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:53	1
Boron	<0.100		0.100		mg/L		09/17/25 09:00	09/26/25 15:36	1
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:53	1
Calcium	**94.9**		0.500		mg/L		09/17/25 09:00	09/25/25 17:53	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:53	1
Cobalt	**0.00247**		0.000500		mg/L		09/17/25 09:00	09/25/25 17:53	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:53	1
Iron	**0.931**		0.100		mg/L		09/17/25 09:00	09/25/25 17:53	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:53	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:53	1
Magnesium	**35.7**		0.500		mg/L		09/17/25 09:00	09/25/25 17:53	1
Manganese	**0.386**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:53	1
Molybdenum	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:53	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:53	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:53	1
Strontium	**0.101**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:53	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:53	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:53	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 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		09/19/25 14:15	09/22/25 10:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.274**	**F1**	0.100		mg/L			09/17/25 12:09	1
Sulfate (ASTM D516-16)	**55.8**		25.0		mg/L			09/18/25 14:33	5
Total Dissolved Solids (SM 2540C)	**442**		50.0		mg/L			09/16/25 13:34	1
Chloride (SM 4500 Cl- E)	**18.9**		2.00		mg/L			09/18/25 23:09	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.5**	**HF**	1.0		SU			09/12/25 11:43	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-1

Client Sample ID: MW-5B

Date Collected: 09/10/25 12:25
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-2

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:56	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:56	1
Arsenic	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:56	1
Barium	**0.252**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:56	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:56	1
Boron	<0.100		0.100		mg/L		09/17/25 09:00	09/26/25 15:39	1
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:56	1
Calcium	**114**		0.500		mg/L		09/17/25 09:00	09/25/25 17:56	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:56	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:56	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:56	1
Iron	**2.07**		0.100		mg/L		09/17/25 09:00	09/25/25 17:56	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:56	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:56	1
Magnesium	**38.3**		0.500		mg/L		09/17/25 09:00	09/25/25 17:56	1
Manganese	**0.530**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:56	1
Molybdenum	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:56	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:56	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:56	1
Strontium	**0.161**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:56	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:56	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:56	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 18:24	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/19/25 14:15	09/22/25 10:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.173**		0.100		mg/L			09/17/25 12:54	1
Sulfate (ASTM D516-16)	**47.6**		25.0		mg/L			09/18/25 14:33	5
Total Dissolved Solids (SM 2540C)	**496**		50.0		mg/L			09/16/25 13:34	1
Chloride (SM 4500 Cl- E)	**42.0**		2.00		mg/L			09/18/25 23:10	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			09/12/25 11:44	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-1

Client Sample ID: MW-6A

Date Collected: 09/10/25 10:40
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-3

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:24	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:24	1
Arsenic	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:24	1
Barium	**0.213**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:24	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:24	1
Boron	<0.100		0.100		mg/L		09/17/25 09:00	09/26/25 15:08	1
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:24	1
Calcium	**79.0**		0.500		mg/L		09/17/25 09:00	09/25/25 17:24	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:24	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:24	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:24	1
Iron	**3.11**		0.100		mg/L		09/17/25 09:00	09/25/25 17:24	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:24	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:24	1
Magnesium	**27.5**		0.500		mg/L		09/17/25 09:00	09/25/25 17:24	1
Manganese	**0.0942**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:24	1
Molybdenum	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:24	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:24	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:24	1
Strontium	**0.162**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:24	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:24	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:24	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 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		09/19/25 14:15	09/22/25 10:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.273**		0.100		mg/L			09/17/25 12:58	1
Sulfate (ASTM D516-16)	**20.7**		5.00		mg/L			09/18/25 14:34	1
Total Dissolved Solids (SM 2540C)	**380**		50.0		mg/L			09/16/25 13:34	1
Chloride (SM 4500 Cl- E)	**16.8**		2.00		mg/L			09/18/25 23:10	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			09/12/25 11:49	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-1

Client Sample ID: MW-8

Date Collected: 09/09/25 09:20
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-4

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:59	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:59	1
Arsenic	**0.00317**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:59	1
Barium	**0.0852**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:59	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:59	1
Boron	<0.100		0.100		mg/L		09/17/25 09:00	09/26/25 15:42	1
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:59	1
Calcium	**79.6**		0.500		mg/L		09/17/25 09:00	09/25/25 17:59	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:59	1
Cobalt	**0.00142**		0.000500		mg/L		09/17/25 09:00	09/25/25 17:59	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:59	1
Iron	**1.13**		0.100		mg/L		09/17/25 09:00	09/25/25 17:59	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:59	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:59	1
Magnesium	**32.4**		0.500		mg/L		09/17/25 09:00	09/25/25 17:59	1
Manganese	**0.366**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:59	1
Molybdenum	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:59	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:59	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:59	1
Strontium	**0.151**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:59	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:59	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:59	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 18:29	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/19/25 14:15	09/22/25 10:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.311**		0.100		mg/L			09/17/25 13:01	1
Sulfate (ASTM D516-16)	**68.8**		25.0		mg/L			09/18/25 14:35	5
Total Dissolved Solids (SM 2540C)	**384**		50.0		mg/L			09/12/25 18:08	1
Chloride (SM 4500 Cl- E)	**20.8**		2.00		mg/L			09/18/25 23:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.4**	**HF**	1.0		SU			09/12/25 11:52	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-1

Client Sample ID: MW-10

Date Collected: 09/08/25 15:10
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-5

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:27	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:27	1
Arsenic	**0.00429**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:27	1
Barium	**0.172**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:27	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:27	1
Boron	<0.100		0.100		mg/L		09/17/25 09:00	09/26/25 15:10	1
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:27	1
Calcium	**82.6**		0.500		mg/L		09/17/25 09:00	09/25/25 17:27	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:27	1
Cobalt	**0.000900**		0.000500		mg/L		09/17/25 09:00	09/25/25 17:27	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:27	1
Iron	**2.58**		0.100		mg/L		09/17/25 09:00	09/25/25 17:27	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:27	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:27	1
Magnesium	**36.4**		0.500		mg/L		09/17/25 09:00	09/25/25 17:27	1
Manganese	**0.165**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:27	1
Molybdenum	**0.00216**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:27	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:27	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:27	1
Strontium	**0.164**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:27	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:27	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:27	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 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		09/19/25 14:15	09/22/25 10:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.218**		0.100		mg/L			09/17/25 13:04	1
Sulfate (ASTM D516-16)	**57.0**		25.0		mg/L			09/18/25 14:36	5
Total Dissolved Solids (SM 2540C)	**434**		50.0		mg/L			09/12/25 18:08	1
Chloride (SM 4500 Cl- E)	**8.50**		2.00		mg/L			09/18/25 23:12	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			09/12/25 11:51	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-1

Client Sample ID: MW-14A

Date Collected: 09/09/25 13:55
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-6

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:38	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:38	1
Arsenic	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:38	1
Barium	**0.0331**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:38	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:38	1
Boron	**16.1**		0.400		mg/L		09/17/25 09:00	09/26/25 15:28	4
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:38	1
Calcium	**277**		0.500		mg/L		09/17/25 09:00	09/25/25 17:38	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:38	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:38	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:38	1
Iron	<0.100		0.100		mg/L		09/17/25 09:00	09/25/25 17:38	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:38	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:38	1
Magnesium	**124**		2.00		mg/L		09/17/25 09:00	09/26/25 15:28	4
Manganese	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:38	1
Molybdenum	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:38	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:38	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:38	1
Strontium	**0.243**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:38	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:38	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:38	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 18:35	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/19/25 14:15	09/22/25 10:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.261**		0.100		mg/L			09/17/25 13:07	1
Sulfate (ASTM D516-16)	**953**		125		mg/L			09/18/25 15:06	25
Total Dissolved Solids (SM 2540C)	**1870**		50.0		mg/L			09/15/25 18:40	1
Chloride (SM 4500 Cl- E)	**15.4**		2.00		mg/L			09/18/25 23:13	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.3**	**HF**	1.0		SU			09/12/25 11:45	1

Client Sample ID: MW-15A
Lab Sample ID: 310-315538-7
Date Collected: 09/10/25 08:25
Matrix: Ground Water
Date Received: 09/12/25 08:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:30	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:30	1
Arsenic	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:30	1
Barium	**0.0302**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:30	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:30	1
Boron	**5.51**		0.400		mg/L		09/17/25 09:00	09/26/25 15:13	4
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:30	1
Calcium	**77.2**		0.500		mg/L		09/17/25 09:00	09/25/25 17:30	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:30	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:30	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:30	1
Iron	<0.100		0.100		mg/L		09/17/25 09:00	09/25/25 17:30	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:30	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:30	1
Magnesium	**34.2**		0.500		mg/L		09/17/25 09:00	09/25/25 17:30	1
Manganese	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:30	1
Molybdenum	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:30	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:30	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:30	1
Strontium	**0.0826**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:30	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:30	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:30	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 18:43	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/23/25 11:55	09/24/25 10:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.293**		0.100		mg/L			09/17/25 13:11	1
Sulfate (ASTM D516-16)	**162**		25.0		mg/L			09/18/25 14:37	5
Total Dissolved Solids (SM 2540C)	**518**		50.0		mg/L			09/16/25 13:34	1
Chloride (SM 4500 Cl- E)	**4.50**		2.00		mg/L			09/18/25 23:13	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.4**	**HF**	1.0		SU			09/12/25 11:42	1

Client Sample ID: MW-21
Lab Sample ID: 310-315538-8
Date Collected: 09/09/25 12:40
Matrix: Ground Water
Date Received: 09/12/25 08:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:33	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:33	1
Arsenic	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:33	1
Barium	**0.0412**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:33	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:33	1
Boron	**1.65**		0.100		mg/L		09/17/25 09:00	09/26/25 15:22	1
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:33	1
Calcium	**52.8**		0.500		mg/L		09/17/25 09:00	09/25/25 17:33	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:33	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:33	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:33	1
Iron	<0.100		0.100		mg/L		09/17/25 09:00	09/25/25 17:33	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:33	1
Lithium	**0.0121**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:33	1
Magnesium	**23.7**		0.500		mg/L		09/17/25 09:00	09/25/25 17:33	1
Manganese	**0.320**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:33	1
Molybdenum	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:33	1
Nickel	**0.0206**		0.00500		mg/L		09/17/25 09:00	09/25/25 17:33	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:33	1
Strontium	**0.166**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:33	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:33	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:33	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 18:46	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/23/25 11:55	09/24/25 10:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.174**		0.100		mg/L			09/17/25 13:21	1
Sulfate (ASTM D516-16)	**135**		50.0		mg/L			09/18/25 14:37	10
Total Dissolved Solids (SM 2540C)	**396**		50.0		mg/L			09/15/25 18:40	1
Chloride (SM 4500 Cl- E)	**5.10**		2.00		mg/L			09/18/25 23:14	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**6.8**	**HF**	1.0		SU			09/12/25 11:45	1

Client Sample ID: MW-22
Lab Sample ID: 310-315538-9
Date Collected: 09/08/25 11:45
Matrix: Ground Water
Date Received: 09/12/25 08:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:07	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:07	1
Arsenic	**0.00768**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:07	1
Barium	**0.262**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:07	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:07	1
Boron	**0.187**		0.100		mg/L		09/17/25 09:00	09/25/25 17:07	1
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:07	1
Calcium	**74.6**		0.500		mg/L		09/17/25 09:00	09/25/25 17:07	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:07	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:07	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:07	1
Iron	**0.196**		0.100		mg/L		09/17/25 09:00	09/25/25 17:07	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:07	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:07	1
Magnesium	**31.0**		0.500		mg/L		09/17/25 09:00	09/25/25 17:07	1
Manganese	**0.480**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:07	1
Molybdenum	**0.00510**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:07	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:07	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:07	1
Strontium	**0.119**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:07	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:07	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:07	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 18:49	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/23/25 11:55	09/24/25 10:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.289**		0.100		mg/L			09/17/25 13:24	1
Sulfate (ASTM D516-16)	**149**		50.0		mg/L			09/18/25 14:38	10
Total Dissolved Solids (SM 2540C)	**426**		50.0		mg/L			09/12/25 18:08	1
Chloride (SM 4500 Cl- E)	**14.5**		2.00		mg/L			09/18/25 23:14	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.6**	**HF**	1.0		SU			09/12/25 11:41	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-1

Client Sample ID: MW-23

Date Collected: 09/08/25 13:50
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-10

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.209**		0.0500		mg/L		09/17/25 09:00	09/25/25 17:41	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:41	1
Arsenic	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:41	1
Barium	**0.0468**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:41	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:41	1
Boron	**0.123**		0.100		mg/L		09/17/25 09:00	09/26/25 15:30	1
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:41	1
Calcium	**44.9**		0.500		mg/L		09/17/25 09:00	09/25/25 17:41	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:41	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:41	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:41	1
Iron	**0.192**		0.100		mg/L		09/17/25 09:00	09/25/25 17:41	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:41	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:41	1
Magnesium	**21.9**		0.500		mg/L		09/17/25 09:00	09/25/25 17:41	1
Manganese	**0.0200**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:41	1
Molybdenum	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:41	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:41	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:41	1
Strontium	**0.0530**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:41	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:41	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:41	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 18:52	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/23/25 11:55	09/24/25 10:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.281**		0.100		mg/L			09/17/25 13:27	1
Sulfate (ASTM D516-16)	**25.7**		5.00		mg/L			09/18/25 14:38	1
Total Dissolved Solids (SM 2540C)	**300**		50.0		mg/L			09/12/25 18:08	1
Chloride (SM 4500 Cl- E)	**25.2**		2.00		mg/L			09/18/25 23:15	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.4**	**HF**	1.0		SU			09/12/25 11:38	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-1

Client Sample ID: DUP-1

Date Collected: 09/08/25 12:00
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-11

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:15	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:15	1
Arsenic	**0.0203**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:15	1
Barium	**0.279**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:15	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:15	1
Boron	<0.100		0.100		mg/L		09/17/25 09:00	09/26/25 14:59	1
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:15	1
Calcium	**77.6**		0.500		mg/L		09/17/25 09:00	09/25/25 17:15	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:15	1
Cobalt	**0.000670**		0.000500		mg/L		09/17/25 09:00	09/25/25 17:15	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:15	1
Iron	**1.23**		0.100		mg/L		09/17/25 09:00	09/25/25 17:15	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:15	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:15	1
Magnesium	**32.0**		0.500		mg/L		09/17/25 09:00	09/25/25 17:15	1
Manganese	**0.642**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:15	1
Molybdenum	**0.00605**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:15	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:15	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:15	1
Strontium	**0.105**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:15	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:15	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:15	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 18:54	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/23/25 11:55	09/24/25 10:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.290**		0.100		mg/L			09/17/25 13:30	1
Sulfate (ASTM D516-16)	**158**		50.0		mg/L			09/18/25 14:38	10
Total Dissolved Solids (SM 2540C)	**416**		50.0		mg/L			09/12/25 18:08	1
Chloride (SM 4500 Cl- E)	**15.6**		2.00		mg/L			09/18/25 23:15	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.6**	**HF**	1.0		SU			09/12/25 11:40	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-1

Client Sample ID: DUP-2

Date Collected: 09/09/25 12:00
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-12

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:50	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:50	1
Arsenic	**0.00340**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:50	1
Barium	**0.0947**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:50	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:50	1
Boron	**0.132**		0.100		mg/L		09/17/25 09:00	09/26/25 15:33	1
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:50	1
Calcium	**88.7**		0.500		mg/L		09/17/25 09:00	09/25/25 17:50	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:50	1
Cobalt	**0.00188**		0.000500		mg/L		09/17/25 09:00	09/25/25 17:50	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:50	1
Iron	**1.33**		0.100		mg/L		09/17/25 09:00	09/25/25 17:50	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:50	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:50	1
Magnesium	**36.0**		0.500		mg/L		09/17/25 09:00	09/25/25 17:50	1
Manganese	**0.526**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:50	1
Molybdenum	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:50	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:50	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:50	1
Strontium	**0.171**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:50	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:50	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:50	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 19:00	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/23/25 11:55	09/24/25 10:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.304**		0.100		mg/L			09/17/25 13:34	1
Sulfate (ASTM D516-16)	**61.5**		50.0		mg/L			09/18/25 14:39	10
Total Dissolved Solids (SM 2540C)	**406**		50.0		mg/L			09/15/25 18:40	1
Chloride (SM 4500 Cl- E)	**25.1**		20.0		mg/L			09/18/25 23:15	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**7.4**	**HF**	1.0		SU			09/12/25 11:36	1

Client Sample ID: LEACHATE
Lab Sample ID: 310-315538-13

Date Collected: 09/10/25 14:10
Matrix: Water

Date Received: 09/12/25 08:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<1.00		1.00		mg/L		09/17/25 09:00	09/26/25 15:02	20
Antimony	<0.0400		0.0400		mg/L		09/17/25 09:00	09/26/25 15:02	20
Arsenic	**1.36**		0.0400		mg/L		09/29/25 09:00	10/01/25 12:12	20
Barium	<0.0400		0.0400		mg/L		09/17/25 09:00	09/26/25 15:02	20
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:18	1
Boron	**50.2**		2.00		mg/L		09/29/25 09:00	10/01/25 12:12	20
Cadmium	**0.000867**		0.000200		mg/L		09/17/25 09:00	09/25/25 17:18	1
Calcium	**455**		10.0		mg/L		09/17/25 09:00	09/26/25 15:02	20
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:18	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:18	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:18	1
Iron	<2.00		2.00		mg/L		09/29/25 09:00	10/01/25 12:12	20
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:18	1
Lithium	**0.192**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:18	1
Magnesium	**23.9**		0.500		mg/L		09/29/25 09:00	09/30/25 19:03	1
Manganese	**0.886**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:18	1
Molybdenum	**2.59**		0.0400		mg/L		09/29/25 09:00	10/01/25 12:12	20
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:18	1
Selenium	<0.100		0.100		mg/L		09/17/25 09:00	09/26/25 15:02	20
Strontium	**6.18**		0.0200		mg/L		09/17/25 09:00	09/26/25 15:02	20
Thallium	**0.00210**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:18	1
Vanadium	**0.0210**		0.00500		mg/L		09/17/25 09:00	09/25/25 17:18	1
Zinc	<0.400		0.400		mg/L		09/29/25 09:00	10/01/25 12:12	20

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/23/25 11:55	09/24/25 10:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**2.47**		0.100		mg/L			09/17/25 13:37	1
Sulfate (ASTM D516-16)	**6720**		1000		mg/L			09/18/25 14:39	200
Total Dissolved Solids (SM 2540C)	**9500**		250		mg/L			09/16/25 13:34	1
Chloride (SM 4500 Cl- E)	**120**		20.0		mg/L			09/18/25 23:16	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SM 4500 H+ B)	**9.0**	**HF**	1.0		SU			09/12/25 11:39	1

Client: Muscatine Power & Water
Job ID: 310-315538-1
Project/Site: Muscatine Power & Water CCR Landfill

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.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

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

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-466891/1-A
Matrix: Water
Analysis Batch: 468018

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 466891

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 16:44	1
Arsenic	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 16:44	1
Barium	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 16:44	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Boron	<0.100		0.100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 16:44	1
Calcium	<0.500		0.500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Iron	<0.100		0.100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Magnesium	<0.500		0.500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Manganese	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Molybdenum	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 16:44	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Strontium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 16:44	1

Lab Sample ID: LCS 310-466891/2-A
Matrix: Water
Analysis Batch: 468018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 466891

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.200	0.1918		mg/L		96	80 - 120
Antimony	0.200	0.2112		mg/L		106	80 - 120
Arsenic	0.200	0.1909		mg/L		95	80 - 120
Barium	0.100	0.09769		mg/L		98	80 - 120
Beryllium	0.100	0.1028		mg/L		103	80 - 120
Boron	0.200	0.2335		mg/L		117	80 - 120
Cadmium	0.100	0.09928		mg/L		99	80 - 120
Calcium	2.00	1.928		mg/L		96	80 - 120
Chromium	0.100	0.1025		mg/L		102	80 - 120
Cobalt	0.100	0.09908		mg/L		99	80 - 120
Copper	0.200	0.2079		mg/L		104	80 - 120
Iron	0.200	0.1929		mg/L		96	80 - 120
Lead	0.200	0.2025		mg/L		101	80 - 120
Lithium	0.200	0.2066		mg/L		103	80 - 120
Magnesium	2.00	1.880		mg/L		94	80 - 120
Manganese	0.100	0.08828		mg/L		88	80 - 120
Molybdenum	0.200	0.2191		mg/L		110	80 - 120
Nickel	0.200	0.2109		mg/L		105	80 - 120
Selenium	0.400	0.3922		mg/L		98	80 - 120
Strontium	0.200	0.1855		mg/L		93	80 - 120
Thallium	0.100	0.1047		mg/L		105	80 - 120

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

Lab Sample ID: LCS 310-466891/2-A
Matrix: Water
Analysis Batch: 468018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 466891

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Vanadium			0.100	0.1015		mg/L		101	80 - 120		

Lab Sample ID: 310-315538-8 DU
Matrix: Ground Water
Analysis Batch: 468018

Client Sample ID: MW-21
Prep Type: Total/NA
Prep Batch: 466891

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Aluminum	<0.0500			<0.0500		mg/L				NC	20
Antimony	<0.00200			<0.00200		mg/L				NC	20
Arsenic	<0.00200			<0.00200		mg/L				NC	20
Barium	0.0412			0.04187		mg/L				2	20
Beryllium	<0.00100			<0.00100		mg/L				NC	20
Cadmium	<0.000200			<0.000200		mg/L				NC	20
Calcium	52.8			54.24		mg/L				3	20
Chromium	<0.00500			<0.00500		mg/L				NC	20
Cobalt	<0.000500			<0.000500		mg/L				NC	20
Copper	<0.00500			<0.00500		mg/L				NC	20
Iron	<0.100			<0.100		mg/L				NC	20
Lead	<0.000500			<0.000500		mg/L				NC	20
Lithium	0.0121			0.01148		mg/L				5	20
Magnesium	23.7			23.73		mg/L				0.2	20
Manganese	0.320			0.3239		mg/L				1	20
Molybdenum	<0.00200			<0.00200		mg/L				NC	20
Nickel	0.0206			0.02010		mg/L				3	20
Selenium	<0.00500			<0.00500		mg/L				NC	20
Strontium	0.166			0.1683		mg/L				2	20
Thallium	<0.00100			<0.00100		mg/L				NC	20
Vanadium	<0.00500			<0.00500		mg/L				NC	20

Lab Sample ID: 310-315538-8 DU
Matrix: Ground Water
Analysis Batch: 468123

Client Sample ID: MW-21
Prep Type: Total/NA
Prep Batch: 466891

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Boron	1.65			1.723		mg/L				4	20

Lab Sample ID: MB 310-468161/1-A
Matrix: Water
Analysis Batch: 468473

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468161

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 18:02	1

Lab Sample ID: MB 310-468161/1-A
Matrix: Water
Analysis Batch: 468583

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468161

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.100		0.100		mg/L		09/29/25 09:00	10/01/25 11:58	1

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

Lab Sample ID: LCS 310-468161/2-A
Matrix: Water
Analysis Batch: 468473

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Zinc	0.200	0.1969		mg/L		98	80 - 120

Lab Sample ID: LCS 310-468161/2-A
Matrix: Water
Analysis Batch: 468583

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.200	0.1992		mg/L		100	80 - 120

Lab Sample ID: 310-315538-1 MS
Matrix: Ground Water
Analysis Batch: 468473

Client Sample ID: MW-4B
Prep Type: Total/NA
Prep Batch: 468161

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	<0.0500		0.200	0.2086		mg/L		104	75 - 125
Antimony	<0.00200		0.200	0.2242		mg/L		112	75 - 125
Arsenic	<0.00200		0.200	0.1970		mg/L		98	75 - 125
Barium	0.157		0.100	0.2571		mg/L		100	75 - 125
Beryllium	<0.00100		0.100	0.08793		mg/L		88	75 - 125
Cadmium	<0.000200		0.100	0.09583		mg/L		96	75 - 125
Calcium	97.6		2.00	100.3	4	mg/L		136	75 - 125
Chromium	<0.00500		0.100	0.09720		mg/L		97	75 - 125
Cobalt	0.00211		0.100	0.09513		mg/L		93	75 - 125
Copper	<0.00500		0.200	0.1839		mg/L		92	75 - 125
Iron	0.883		0.200	1.093	4	mg/L		105	75 - 125
Lead	<0.000500		0.200	0.1826		mg/L		91	75 - 125
Lithium	<0.0100		0.200	0.1789		mg/L		88	75 - 125
Magnesium	36.7		2.00	37.29	4	mg/L		28	75 - 125
Manganese	0.392		0.100	0.4852		mg/L		94	75 - 125
Molybdenum	<0.00200		0.200	0.1877		mg/L		94	75 - 125
Nickel	<0.00500		0.200	0.1808		mg/L		89	75 - 125
Selenium	<0.00500		0.400	0.3860		mg/L		96	75 - 125
Strontium	0.101		0.200	0.3342		mg/L		117	75 - 125
Thallium	<0.00100		0.100	0.09486		mg/L		95	75 - 125
Vanadium	<0.00500		0.100	0.09120		mg/L		91	75 - 125
Zinc	<0.0200		0.200	0.1909		mg/L		95	75 - 125

Lab Sample ID: 310-315538-1 MS
Matrix: Ground Water
Analysis Batch: 468583

Client Sample ID: MW-4B
Prep Type: Total/NA
Prep Batch: 468161

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	<0.100		0.200	0.2185		mg/L		109	75 - 125

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

Lab Sample ID: 310-315538-1 MSD — **Client Sample ID: MW-4B**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 468473 — **Prep Batch: 468161**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	<0.0500		0.200	0.2146		mg/L		107	75 - 125	3	20
Antimony	<0.00200		0.200	0.2279		mg/L		114	75 - 125	2	20
Arsenic	<0.00200		0.200	0.2017		mg/L		101	75 - 125	2	20
Barium	0.157		0.100	0.2587		mg/L		101	75 - 125	1	20
Beryllium	<0.00100		0.100	0.09253		mg/L		93	75 - 125	5	20
Cadmium	<0.000200		0.100	0.09812		mg/L		98	75 - 125	2	20
Calcium	97.6		2.00	99.51	4	mg/L		95	75 - 125	1	20
Chromium	<0.00500		0.100	0.1010		mg/L		101	75 - 125	4	20
Cobalt	0.00211		0.100	0.09967		mg/L		98	75 - 125	5	20
Copper	<0.00500		0.200	0.1921		mg/L		96	75 - 125	4	20
Iron	0.883		0.200	1.094	4	mg/L		105	75 - 125	0	20
Lead	<0.000500		0.200	0.1918		mg/L		96	75 - 125	5	20
Lithium	<0.0100		0.200	0.1820		mg/L		89	75 - 125	2	20
Magnesium	36.7		2.00	37.49	4	mg/L		38	75 - 125	1	20
Manganese	0.392		0.100	0.4967		mg/L		105	75 - 125	2	20
Molybdenum	<0.00200		0.200	0.1978		mg/L		99	75 - 125	5	20
Nickel	<0.00500		0.200	0.1884		mg/L		93	75 - 125	4	20
Selenium	<0.00500		0.400	0.3929		mg/L		98	75 - 125	2	20
Strontium	0.101		0.200	0.3427		mg/L		121	75 - 125	3	20
Thallium	<0.00100		0.100	0.08282		mg/L		83	75 - 125	14	20
Vanadium	<0.00500		0.100	0.09441		mg/L		94	75 - 125	3	20
Zinc	<0.0200		0.200	0.1953		mg/L		98	75 - 125	2	20

Lab Sample ID: 310-315538-1 MSD — **Client Sample ID: MW-4B**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 468583 — **Prep Batch: 468161**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	<0.100		0.200	0.2226		mg/L		111	75 - 125	2	20

Lab Sample ID: 310-315538-11 DU — **Client Sample ID: DUP-1**
Matrix: Ground Water — **Prep Type: Total/NA**
Analysis Batch: 468473 — **Prep Batch: 468161**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Zinc	<0.0200		<0.0200		mg/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-467199/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 467505 — **Prep Batch: 467199**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/19/25 14:15	09/22/25 09:19	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 310-467199/2-A
Matrix: Water
Analysis Batch: 467505

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467199

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00167	0.001611		mg/L		97	80 - 120		

Lab Sample ID: MB 310-467595/1-A
Matrix: Water
Analysis Batch: 467781

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 467595

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/23/25 11:55	09/24/25 10:13	1

Lab Sample ID: LCS 310-467595/2-A
Matrix: Water
Analysis Batch: 467781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467595

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00167	0.001653		mg/L		99	80 - 120		

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-467076/5
Matrix: Water
Analysis Batch: 467076

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.100		0.100		mg/L			09/17/25 12:02	1

Lab Sample ID: LCS 310-467076/6
Matrix: Water
Analysis Batch: 467076

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride			2.00	2.012		mg/L		101	90 - 110		

Lab Sample ID: 310-315538-1 MS
Matrix: Ground Water
Analysis Batch: 467076

Client Sample ID: MW-4B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	0.274	F1	1.00	0.7314	F1	mg/L		46	75 - 125		

Lab Sample ID: 310-315538-1 MSD
Matrix: Ground Water
Analysis Batch: 467076

Client Sample ID: MW-4B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.274	F1	1.00	0.7712	F1	mg/L		50	75 - 125	5	16

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-467203/16
Matrix: Water
Analysis Batch: 467203

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			09/18/25 14:30	1

Lab Sample ID: MB 310-467203/46
Matrix: Water
Analysis Batch: 467203

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			09/18/25 14:44	1

Lab Sample ID: LCS 310-467203/17
Matrix: Water
Analysis Batch: 467203

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	9.167		mg/L		92	85 - 115

Lab Sample ID: LCS 310-467203/47
Matrix: Water
Analysis Batch: 467203

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	8.527		mg/L		85	85 - 115

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

Lab Sample ID: MB 310-466593/1
Matrix: Water
Analysis Batch: 466593

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			09/12/25 18:08	1

Lab Sample ID: LCS 310-466593/2
Matrix: Water
Analysis Batch: 466593

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	89 - 110

Lab Sample ID: MB 310-466769/1
Matrix: Water
Analysis Batch: 466769

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			09/15/25 18:40	1

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

Lab Sample ID: LCS 310-466769/2
Matrix: Water
Analysis Batch: 466769

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	89 - 110

Lab Sample ID: MB 310-466849/1
Matrix: Water
Analysis Batch: 466849

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			09/16/25 13:34	1

Lab Sample ID: LCS 310-466849/2
Matrix: Water
Analysis Batch: 466849

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	1014		mg/L		101	89 - 110

Lab Sample ID: 310-315538-1 DU
Matrix: Ground Water
Analysis Batch: 466849

Client Sample ID: MW-4B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	442		422.0		mg/L		5	13

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-467219/16
Matrix: Water
Analysis Batch: 467219

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.00		2.00		mg/L			09/18/25 23:07	1

Lab Sample ID: LCS 310-467219/14
Matrix: Water
Analysis Batch: 467219

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	10.79		mg/L		108	90 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-466532/1
Matrix: Water
Analysis Batch: 466532

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

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: 310-315538-3 DU
Client Sample ID: MW-6A
Matrix: Ground Water
Prep Type: Total/NA
Analysis Batch: 466532

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.3	HF		7.3		SU				0.3	20

Lab Sample ID: 310-315538-12 DU
Client Sample ID: DUP-2
Matrix: Ground Water
Prep Type: Total/NA
Analysis Batch: 466532

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.4	HF		7.4		SU				0.1	20

Metals

Prep Batch: 466891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	3005A	
310-315538-2	MW-5B	Total/NA	Ground Water	3005A	
310-315538-3	MW-6A	Total/NA	Ground Water	3005A	
310-315538-4	MW-8	Total/NA	Ground Water	3005A	
310-315538-5	MW-10	Total/NA	Ground Water	3005A	
310-315538-6	MW-14A	Total/NA	Ground Water	3005A	
310-315538-7	MW-15A	Total/NA	Ground Water	3005A	
310-315538-8	MW-21	Total/NA	Ground Water	3005A	
310-315538-9	MW-22	Total/NA	Ground Water	3005A	
310-315538-10	MW-23	Total/NA	Ground Water	3005A	
310-315538-11	DUP-1	Total/NA	Ground Water	3005A	
310-315538-12	DUP-2	Total/NA	Ground Water	3005A	
310-315538-13	LEACHATE	Total/NA	Water	3005A	
MB 310-466891/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-466891/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-315538-8 DU	MW-21	Total/NA	Ground Water	3005A	

Prep Batch: 467199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	7470A	
310-315538-2	MW-5B	Total/NA	Ground Water	7470A	
310-315538-3	MW-6A	Total/NA	Ground Water	7470A	
310-315538-4	MW-8	Total/NA	Ground Water	7470A	
310-315538-5	MW-10	Total/NA	Ground Water	7470A	
310-315538-6	MW-14A	Total/NA	Ground Water	7470A	
MB 310-467199/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-467199/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 467505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	7470A	467199
310-315538-2	MW-5B	Total/NA	Ground Water	7470A	467199
310-315538-3	MW-6A	Total/NA	Ground Water	7470A	467199
310-315538-4	MW-8	Total/NA	Ground Water	7470A	467199
310-315538-5	MW-10	Total/NA	Ground Water	7470A	467199
310-315538-6	MW-14A	Total/NA	Ground Water	7470A	467199
MB 310-467199/1-A	Method Blank	Total/NA	Water	7470A	467199
LCS 310-467199/2-A	Lab Control Sample	Total/NA	Water	7470A	467199

Prep Batch: 467595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-7	MW-15A	Total/NA	Ground Water	7470A	
310-315538-8	MW-21	Total/NA	Ground Water	7470A	
310-315538-9	MW-22	Total/NA	Ground Water	7470A	
310-315538-10	MW-23	Total/NA	Ground Water	7470A	
310-315538-11	DUP-1	Total/NA	Ground Water	7470A	
310-315538-12	DUP-2	Total/NA	Ground Water	7470A	
310-315538-13	LEACHATE	Total/NA	Water	7470A	
MB 310-467595/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-467595/2-A	Lab Control Sample	Total/NA	Water	7470A	

Metals

Analysis Batch: 467781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-7	MW-15A	Total/NA	Ground Water	7470A	467595
310-315538-8	MW-21	Total/NA	Ground Water	7470A	467595
310-315538-9	MW-22	Total/NA	Ground Water	7470A	467595
310-315538-10	MW-23	Total/NA	Ground Water	7470A	467595
310-315538-11	DUP-1	Total/NA	Ground Water	7470A	467595
310-315538-12	DUP-2	Total/NA	Ground Water	7470A	467595
310-315538-13	LEACHATE	Total/NA	Water	7470A	467595
MB 310-467595/1-A	Method Blank	Total/NA	Water	7470A	467595
LCS 310-467595/2-A	Lab Control Sample	Total/NA	Water	7470A	467595

Analysis Batch: 468018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	6020B	466891
310-315538-2	MW-5B	Total/NA	Ground Water	6020B	466891
310-315538-3	MW-6A	Total/NA	Ground Water	6020B	466891
310-315538-4	MW-8	Total/NA	Ground Water	6020B	466891
310-315538-5	MW-10	Total/NA	Ground Water	6020B	466891
310-315538-6	MW-14A	Total/NA	Ground Water	6020B	466891
310-315538-7	MW-15A	Total/NA	Ground Water	6020B	466891
310-315538-8	MW-21	Total/NA	Ground Water	6020B	466891
310-315538-9	MW-22	Total/NA	Ground Water	6020B	466891
310-315538-10	MW-23	Total/NA	Ground Water	6020B	466891
310-315538-11	DUP-1	Total/NA	Ground Water	6020B	466891
310-315538-12	DUP-2	Total/NA	Ground Water	6020B	466891
310-315538-13	LEACHATE	Total/NA	Water	6020B	466891
MB 310-466891/1-A	Method Blank	Total/NA	Water	6020B	466891
LCS 310-466891/2-A	Lab Control Sample	Total/NA	Water	6020B	466891
310-315538-8 DU	MW-21	Total/NA	Ground Water	6020B	466891

Analysis Batch: 468123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	6020B	466891
310-315538-2	MW-5B	Total/NA	Ground Water	6020B	466891
310-315538-3	MW-6A	Total/NA	Ground Water	6020B	466891
310-315538-4	MW-8	Total/NA	Ground Water	6020B	466891
310-315538-5	MW-10	Total/NA	Ground Water	6020B	466891
310-315538-6	MW-14A	Total/NA	Ground Water	6020B	466891
310-315538-7	MW-15A	Total/NA	Ground Water	6020B	466891
310-315538-8	MW-21	Total/NA	Ground Water	6020B	466891
310-315538-10	MW-23	Total/NA	Ground Water	6020B	466891
310-315538-11	DUP-1	Total/NA	Ground Water	6020B	466891
310-315538-12	DUP-2	Total/NA	Ground Water	6020B	466891
310-315538-13	LEACHATE	Total/NA	Water	6020B	466891
310-315538-8 DU	MW-21	Total/NA	Ground Water	6020B	466891

Prep Batch: 468161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	3005A	
310-315538-2	MW-5B	Total/NA	Ground Water	3005A	
310-315538-3	MW-6A	Total/NA	Ground Water	3005A	
310-315538-4	MW-8	Total/NA	Ground Water	3005A	

Metals (Continued)

Prep Batch: 468161 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-5	MW-10	Total/NA	Ground Water	3005A	
310-315538-6	MW-14A	Total/NA	Ground Water	3005A	
310-315538-7	MW-15A	Total/NA	Ground Water	3005A	
310-315538-8	MW-21	Total/NA	Ground Water	3005A	
310-315538-9	MW-22	Total/NA	Ground Water	3005A	
310-315538-10	MW-23	Total/NA	Ground Water	3005A	
310-315538-11	DUP-1	Total/NA	Ground Water	3005A	
310-315538-12	DUP-2	Total/NA	Ground Water	3005A	
310-315538-13	LEACHATE	Total/NA	Water	3005A	
MB 310-468161/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-468161/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-315538-1 MS	MW-4B	Total/NA	Ground Water	3005A	
310-315538-1 MSD	MW-4B	Total/NA	Ground Water	3005A	
310-315538-11 DU	DUP-1	Total/NA	Ground Water	3005A	

Analysis Batch: 468473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	6020B	468161
310-315538-2	MW-5B	Total/NA	Ground Water	6020B	468161
310-315538-3	MW-6A	Total/NA	Ground Water	6020B	468161
310-315538-4	MW-8	Total/NA	Ground Water	6020B	468161
310-315538-5	MW-10	Total/NA	Ground Water	6020B	468161
310-315538-6	MW-14A	Total/NA	Ground Water	6020B	468161
310-315538-7	MW-15A	Total/NA	Ground Water	6020B	468161
310-315538-8	MW-21	Total/NA	Ground Water	6020B	468161
310-315538-9	MW-22	Total/NA	Ground Water	6020B	468161
310-315538-10	MW-23	Total/NA	Ground Water	6020B	468161
310-315538-11	DUP-1	Total/NA	Ground Water	6020B	468161
310-315538-12	DUP-2	Total/NA	Ground Water	6020B	468161
310-315538-13	LEACHATE	Total/NA	Water	6020B	468161
MB 310-468161/1-A	Method Blank	Total/NA	Water	6020B	468161
LCS 310-468161/2-A	Lab Control Sample	Total/NA	Water	6020B	468161
310-315538-1 MS	MW-4B	Total/NA	Ground Water	6020B	468161
310-315538-1 MSD	MW-4B	Total/NA	Ground Water	6020B	468161
310-315538-11 DU	DUP-1	Total/NA	Ground Water	6020B	468161

Analysis Batch: 468583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-13	LEACHATE	Total/NA	Water	6020B	468161
MB 310-468161/1-A	Method Blank	Total/NA	Water	6020B	468161
LCS 310-468161/2-A	Lab Control Sample	Total/NA	Water	6020B	468161
310-315538-1 MS	MW-4B	Total/NA	Ground Water	6020B	468161
310-315538-1 MSD	MW-4B	Total/NA	Ground Water	6020B	468161

General Chemistry

Analysis Batch: 466532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	SM 4500 H+ B	
310-315538-2	MW-5B	Total/NA	Ground Water	SM 4500 H+ B	
310-315538-3	MW-6A	Total/NA	Ground Water	SM 4500 H+ B	

General Chemistry (Continued)

Analysis Batch: 466532 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-4	MW-8	Total/NA	Ground Water	SM 4500 H+ B	
310-315538-5	MW-10	Total/NA	Ground Water	SM 4500 H+ B	
310-315538-6	MW-14A	Total/NA	Ground Water	SM 4500 H+ B	
310-315538-7	MW-15A	Total/NA	Ground Water	SM 4500 H+ B	
310-315538-8	MW-21	Total/NA	Ground Water	SM 4500 H+ B	
310-315538-9	MW-22	Total/NA	Ground Water	SM 4500 H+ B	
310-315538-10	MW-23	Total/NA	Ground Water	SM 4500 H+ B	
310-315538-11	DUP-1	Total/NA	Ground Water	SM 4500 H+ B	
310-315538-12	DUP-2	Total/NA	Ground Water	SM 4500 H+ B	
310-315538-13	LEACHATE	Total/NA	Water	SM 4500 H+ B	
LCS 310-466532/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-315538-3 DU	MW-6A	Total/NA	Ground Water	SM 4500 H+ B	
310-315538-12 DU	DUP-2	Total/NA	Ground Water	SM 4500 H+ B	

Analysis Batch: 466593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-4	MW-8	Total/NA	Ground Water	SM 2540C	
310-315538-5	MW-10	Total/NA	Ground Water	SM 2540C	
310-315538-9	MW-22	Total/NA	Ground Water	SM 2540C	
310-315538-10	MW-23	Total/NA	Ground Water	SM 2540C	
310-315538-11	DUP-1	Total/NA	Ground Water	SM 2540C	
MB 310-466593/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-466593/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 466769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-6	MW-14A	Total/NA	Ground Water	SM 2540C	
310-315538-8	MW-21	Total/NA	Ground Water	SM 2540C	
310-315538-12	DUP-2	Total/NA	Ground Water	SM 2540C	
MB 310-466769/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-466769/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 466849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	SM 2540C	
310-315538-2	MW-5B	Total/NA	Ground Water	SM 2540C	
310-315538-3	MW-6A	Total/NA	Ground Water	SM 2540C	
310-315538-7	MW-15A	Total/NA	Ground Water	SM 2540C	
310-315538-13	LEACHATE	Total/NA	Water	SM 2540C	
MB 310-466849/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-466849/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-315538-1 DU	MW-4B	Total/NA	Ground Water	SM 2540C	

Analysis Batch: 467076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	4500 F C-2011	
310-315538-2	MW-5B	Total/NA	Ground Water	4500 F C-2011	
310-315538-3	MW-6A	Total/NA	Ground Water	4500 F C-2011	
310-315538-4	MW-8	Total/NA	Ground Water	4500 F C-2011	
310-315538-5	MW-10	Total/NA	Ground Water	4500 F C-2011	
310-315538-6	MW-14A	Total/NA	Ground Water	4500 F C-2011	

General Chemistry (Continued)

Analysis Batch: 467076 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-7	MW-15A	Total/NA	Ground Water	4500 F C-2011	
310-315538-8	MW-21	Total/NA	Ground Water	4500 F C-2011	
310-315538-9	MW-22	Total/NA	Ground Water	4500 F C-2011	
310-315538-10	MW-23	Total/NA	Ground Water	4500 F C-2011	
310-315538-11	DUP-1	Total/NA	Ground Water	4500 F C-2011	
310-315538-12	DUP-2	Total/NA	Ground Water	4500 F C-2011	
310-315538-13	LEACHATE	Total/NA	Water	4500 F C-2011	
MB 310-467076/5	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-467076/6	Lab Control Sample	Total/NA	Water	4500 F C-2011	
310-315538-1 MS	MW-4B	Total/NA	Ground Water	4500 F C-2011	
310-315538-1 MSD	MW-4B	Total/NA	Ground Water	4500 F C-2011	

Analysis Batch: 467203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	D516-16	
310-315538-2	MW-5B	Total/NA	Ground Water	D516-16	
310-315538-3	MW-6A	Total/NA	Ground Water	D516-16	
310-315538-4	MW-8	Total/NA	Ground Water	D516-16	
310-315538-5	MW-10	Total/NA	Ground Water	D516-16	
310-315538-6	MW-14A	Total/NA	Ground Water	D516-16	
310-315538-7	MW-15A	Total/NA	Ground Water	D516-16	
310-315538-8	MW-21	Total/NA	Ground Water	D516-16	
310-315538-9	MW-22	Total/NA	Ground Water	D516-16	
310-315538-10	MW-23	Total/NA	Ground Water	D516-16	
310-315538-11	DUP-1	Total/NA	Ground Water	D516-16	
310-315538-12	DUP-2	Total/NA	Ground Water	D516-16	
310-315538-13	LEACHATE	Total/NA	Water	D516-16	
MB 310-467203/16	Method Blank	Total/NA	Water	D516-16	
MB 310-467203/46	Method Blank	Total/NA	Water	D516-16	
LCS 310-467203/17	Lab Control Sample	Total/NA	Water	D516-16	
LCS 310-467203/47	Lab Control Sample	Total/NA	Water	D516-16	

Analysis Batch: 467219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	SM 4500 Cl- E	
310-315538-2	MW-5B	Total/NA	Ground Water	SM 4500 Cl- E	
310-315538-3	MW-6A	Total/NA	Ground Water	SM 4500 Cl- E	
310-315538-4	MW-8	Total/NA	Ground Water	SM 4500 Cl- E	
310-315538-5	MW-10	Total/NA	Ground Water	SM 4500 Cl- E	
310-315538-6	MW-14A	Total/NA	Ground Water	SM 4500 Cl- E	
310-315538-7	MW-15A	Total/NA	Ground Water	SM 4500 Cl- E	
310-315538-8	MW-21	Total/NA	Ground Water	SM 4500 Cl- E	
310-315538-9	MW-22	Total/NA	Ground Water	SM 4500 Cl- E	
310-315538-10	MW-23	Total/NA	Ground Water	SM 4500 Cl- E	
310-315538-11	DUP-1	Total/NA	Ground Water	SM 4500 Cl- E	
310-315538-12	DUP-2	Total/NA	Ground Water	SM 4500 Cl- E	
310-315538-13	LEACHATE	Total/NA	Water	SM 4500 Cl- E	
MB 310-467219/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-467219/14	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Lab Chronicle

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-1

Client Sample ID: MW-4B

Date Collected: 09/10/25 09:45
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-1
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:53
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468123	NFT2	EET CF	09/26/25 15:36
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 18:13
Total/NA	Prep	7470A			467199	RLT9	EET CF	09/19/25 14:15
Total/NA	Analysis	7470A		1	467505	RLT9	EET CF	09/22/25 10:06
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 12:09
Total/NA	Analysis	D516-16		5	467203	WZC8	EET CF	09/18/25 14:33
Total/NA	Analysis	SM 2540C		1	466849	HE7K	EET CF	09/16/25 13:34
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:09
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:43

Client Sample ID: MW-5B

Date Collected: 09/10/25 12:25
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-2
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:56
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468123	NFT2	EET CF	09/26/25 15:39
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 18:24
Total/NA	Prep	7470A			467199	RLT9	EET CF	09/19/25 14:15
Total/NA	Analysis	7470A		1	467505	RLT9	EET CF	09/22/25 10:08
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 12:54
Total/NA	Analysis	D516-16		5	467203	WZC8	EET CF	09/18/25 14:33
Total/NA	Analysis	SM 2540C		1	466849	HE7K	EET CF	09/16/25 13:34
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:10
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:44

Client Sample ID: MW-6A

Date Collected: 09/10/25 10:40
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-3
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:24
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468123	NFT2	EET CF	09/26/25 15:08
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 18:26

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-315538-1
Project/Site: Muscatine Power & Water CCR Landfill

Client Sample ID: MW-6A
Lab Sample ID: 310-315538-3
Date Collected: 09/10/25 10:40
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			467199	RLT9	EET CF	09/19/25 14:15
Total/NA	Analysis	7470A		1	467505	RLT9	EET CF	09/22/25 10:13
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 12:58
Total/NA	Analysis	D516-16		1	467203	WZC8	EET CF	09/18/25 14:34
Total/NA	Analysis	SM 2540C		1	466849	HE7K	EET CF	09/16/25 13:34
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:10
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:49

Client Sample ID: MW-8
Lab Sample ID: 310-315538-4
Date Collected: 09/09/25 09:20
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:59
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468123	NFT2	EET CF	09/26/25 15:42
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 18:29
Total/NA	Prep	7470A			467199	RLT9	EET CF	09/19/25 14:15
Total/NA	Analysis	7470A		1	467505	RLT9	EET CF	09/22/25 10:10
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 13:01
Total/NA	Analysis	D516-16		5	467203	WZC8	EET CF	09/18/25 14:35
Total/NA	Analysis	SM 2540C		1	466593	ENB7	EET CF	09/12/25 18:08
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:12
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:52

Client Sample ID: MW-10
Lab Sample ID: 310-315538-5
Date Collected: 09/08/25 15:10
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:27
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468123	NFT2	EET CF	09/26/25 15:10
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 18:32
Total/NA	Prep	7470A			467199	RLT9	EET CF	09/19/25 14:15
Total/NA	Analysis	7470A		1	467505	RLT9	EET CF	09/22/25 10:15
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 13:04
Total/NA	Analysis	D516-16		5	467203	WZC8	EET CF	09/18/25 14:36
Total/NA	Analysis	SM 2540C		1	466593	ENB7	EET CF	09/12/25 18:08

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-315538-1
Project/Site: Muscatine Power & Water CCR Landfill

Client Sample ID: MW-10
Lab Sample ID: 310-315538-5
Date Collected: 09/08/25 15:10
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:12
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:51

Client Sample ID: MW-14A
Lab Sample ID: 310-315538-6
Date Collected: 09/09/25 13:55
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:38
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		4	468123	NFT2	EET CF	09/26/25 15:28
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 18:35
Total/NA	Prep	7470A			467199	RLT9	EET CF	09/19/25 14:15
Total/NA	Analysis	7470A		1	467505	RLT9	EET CF	09/22/25 10:17
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 13:07
Total/NA	Analysis	D516-16		25	467203	WZC8	EET CF	09/18/25 15:06
Total/NA	Analysis	SM 2540C		1	466769	ENB7	EET CF	09/15/25 18:40
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:13
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:45

Client Sample ID: MW-15A
Lab Sample ID: 310-315538-7
Date Collected: 09/10/25 08:25
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:30
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		4	468123	NFT2	EET CF	09/26/25 15:13
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 18:43
Total/NA	Prep	7470A			467595	RLT9	EET CF	09/23/25 11:55
Total/NA	Analysis	7470A		1	467781	RLT9	EET CF	09/24/25 10:28
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 13:11
Total/NA	Analysis	D516-16		5	467203	WZC8	EET CF	09/18/25 14:37
Total/NA	Analysis	SM 2540C		1	466849	HE7K	EET CF	09/16/25 13:34
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:13
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:42

Client Sample ID: MW-21

Lab Sample ID: 310-315538-8

Date Collected: 09/09/25 12:40

Matrix: Ground Water

Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:33
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468123	NFT2	EET CF	09/26/25 15:22
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 18:46
Total/NA	Prep	7470A			467595	RLT9	EET CF	09/23/25 11:55
Total/NA	Analysis	7470A		1	467781	RLT9	EET CF	09/24/25 10:35
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 13:21
Total/NA	Analysis	D516-16		10	467203	WZC8	EET CF	09/18/25 14:37
Total/NA	Analysis	SM 2540C		1	466769	ENB7	EET CF	09/15/25 18:40
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:14
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:45

Client Sample ID: MW-22

Lab Sample ID: 310-315538-9

Date Collected: 09/08/25 11:45

Matrix: Ground Water

Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:07
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 18:49
Total/NA	Prep	7470A			467595	RLT9	EET CF	09/23/25 11:55
Total/NA	Analysis	7470A		1	467781	RLT9	EET CF	09/24/25 10:37
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 13:24
Total/NA	Analysis	D516-16		10	467203	WZC8	EET CF	09/18/25 14:38
Total/NA	Analysis	SM 2540C		1	466593	ENB7	EET CF	09/12/25 18:08
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:14
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:41

Client Sample ID: MW-23

Lab Sample ID: 310-315538-10

Date Collected: 09/08/25 13:50

Matrix: Ground Water

Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:41
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468123	NFT2	EET CF	09/26/25 15:30
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 18:52
Total/NA	Prep	7470A			467595	RLT9	EET CF	09/23/25 11:55
Total/NA	Analysis	7470A		1	467781	RLT9	EET CF	09/24/25 10:39

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-315538-1
Project/Site: Muscatine Power & Water CCR Landfill

Client Sample ID: MW-23
Lab Sample ID: 310-315538-10
Date Collected: 09/08/25 13:50
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 13:27
Total/NA	Analysis	D516-16		1	467203	WZC8	EET CF	09/18/25 14:38
Total/NA	Analysis	SM 2540C		1	466593	ENB7	EET CF	09/12/25 18:08
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:15
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:38

Client Sample ID: DUP-1
Lab Sample ID: 310-315538-11
Date Collected: 09/08/25 12:00
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:15
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468123	NFT2	EET CF	09/26/25 14:59
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 18:54
Total/NA	Prep	7470A			467595	RLT9	EET CF	09/23/25 11:55
Total/NA	Analysis	7470A		1	467781	RLT9	EET CF	09/24/25 10:41
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 13:30
Total/NA	Analysis	D516-16		10	467203	WZC8	EET CF	09/18/25 14:38
Total/NA	Analysis	SM 2540C		1	466593	ENB7	EET CF	09/12/25 18:08
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:15
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:40

Client Sample ID: DUP-2
Lab Sample ID: 310-315538-12
Date Collected: 09/09/25 12:00
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:50
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468123	NFT2	EET CF	09/26/25 15:33
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 19:00
Total/NA	Prep	7470A			467595	RLT9	EET CF	09/23/25 11:55
Total/NA	Analysis	7470A		1	467781	RLT9	EET CF	09/24/25 10:43
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 13:34
Total/NA	Analysis	D516-16		10	467203	WZC8	EET CF	09/18/25 14:39
Total/NA	Analysis	SM 2540C		1	466769	ENB7	EET CF	09/15/25 18:40
Total/NA	Analysis	SM 4500 Cl- E		10	467219	ZJX4	EET CF	09/18/25 23:15
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:36

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-315538-1
Project/Site: Muscatine Power & Water CCR Landfill

Client Sample ID: LEACHATE
Lab Sample ID: 310-315538-13

Date Collected: 09/10/25 14:10
Matrix: Water

Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:18
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		20	468123	NFT2	EET CF	09/26/25 15:02
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 19:03
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		20	468583	NFT2	EET CF	10/01/25 12:12
Total/NA	Prep	7470A			467595	RLT9	EET CF	09/23/25 11:55
Total/NA	Analysis	7470A		1	467781	RLT9	EET CF	09/24/25 10:45
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 13:37
Total/NA	Analysis	D516-16		200	467203	WZC8	EET CF	09/18/25 14:39
Total/NA	Analysis	SM 2540C		1	466849	HE7K	EET CF	09/16/25 13:34
Total/NA	Analysis	SM 4500 Cl- E		10	467219	ZJX4	EET CF	09/18/25 23:16
Total/NA	Analysis	SM 4500 H+ B		1	466532	W9YR	EET CF	09/12/25 11:39

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Muscatine Power & Water
Job ID: 310-315538-1
Project/Site: Muscatine Power & Water CCR Landfill

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
6020B	3005A	Water	Lithium

Method Summary

Client: Muscatine Power & Water
Job ID: 310-315538-1
Project/Site: Muscatine Power & Water CCR Landfill

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF

Protocol References:

ASTM = ASTM International

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

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

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

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310-315538 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client. Muscatine Power + Water

City/State: CITY Muscatine STATE IA | Project

Receipt Information

Date/Time Received. DATE 09/12/25 TIME 0825 | Received By ES

Delivery Type. ☑ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other._____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID
Multiple Coolers?	☑ Yes	☐ No	*If yes:* Cooler # 1 of 4
Cooler Custody Seals Present? No	☑ Yes	☐ No	*If yes:* Cooler custody seals intact? ☑ Yes ☐
Sample Custody Seals Present? No	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐
Trip Blank Present?	☐ Yes	☑ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE

Thermometer ID. R | 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). 0.9 | Corrected Temp (°C): 0.9

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power & Water

City/State: CITY Muscatine | STATE IA | Project

Receipt Information

Date/Time Received: DATE 09/12/25 | TIME 0825 | Received By ES

Delivery Type. ☑ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes* Cooler ID

Multiple Coolers? ☑ Yes ☐ No *If yes:* Cooler # 1 of 4

Cooler Custody Seals Present? ☑ Yes ☐ No *If yes:* Cooler custody seals intact? ☑ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes.* Which VOA samples are in cooler? ↓

Temperature Record

Coolant ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE

Thermometer ID. R | Correction Factor (°C):

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C) 2.7 | Corrected Temp (°C). 2.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used		
Uncorrected Temp (°C):		
Corrected Temp (°C).		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power + Water

City/State: CITY: Muscatine | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE: 09/12/25 | TIME: 0825 | Received By: ES

Delivery Type: ☑ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other._____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes* Cooler ID:
Multiple Coolers?	☑ Yes	☐ No	*If yes* Cooler # 3 of 4
Cooler Custody Seals Present? No	☑ Yes	☐ No	*If yes* Cooler custody seals intact? ☑ Yes ☐
Sample Custody Seals Present? No	☐ Yes	☑ No	*If yes* Sample custody seals intact? ☐ Yes ☐
Trip Blank Present?	☐ Yes	☑ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE

Thermometer ID: R | 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): 1.3 | Corrected Temp (°C): 1.3

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used		
Uncorrected Temp (°C):		
Corrected Temp (°C)		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE. If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power + Water

City/State: CITY Muscatine | STATE IA | Project

Receipt Information

Date/Time Received: DATE 09/12/25 | TIME 0825 | Received By: ES

Delivery Type. ☑ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other._____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ☐ No *If yes* Cooler # 4 of 4

Cooler Custody Seals Present? ☑ Yes ☐ No *If yes.* Cooler custody seals intact? ☑ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID R | 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) 1.7 | Corrected Temp (°C) 1.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used.		
Uncorrected Temp (°C).		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes.* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob michels@et.eurofinsus com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days)			
State Zip: IA, 52761				
Phone:	PO #: 254338			
Email: sbennett@mpw org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water CCR Landfill	TestAmerica Project #:			
Site: Iowa	Event: Fall 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A CCR List, 7470A Mercury	2540C TDS, SM4500_H+ pH	9056A Chloride, Fluoride, Sulfate	Radium-226	Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N				
MW-4B	9/10/25	0945	G	GW			X	X	X	X	X		
MW-5B	9/10/25	1225	G	GW			X	X	X	X	X		
MW-6A	9/10/25	1040	G	GW			X	X	X	X	X		
MW-8	9/9/25	0920	G	GW			X	X	X	X	X		
MW-10	9/8/25	1510	G	GW			X	X	X	X	X		
MW-14A	9/9/25	1355	G	GW			X	X	X	X	X		
MW-15A	9/10/25	0825	G	GW			X	X	X	X	X		
MW-21	9/9/25	1240	G	GW			X	X	X	X	X		
MW-22	9/8/25	1145	G	GW			X	X	X	X	X		
MW-23	9/8/25	1350	G	GW			X	X	X	X	X		

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

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

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

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Sam Bennett	9/11/25 0900	MPW	ES	09/12/25 0825	EET
2						
3						

Custody Seals Intact: Δ Yes Δ 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 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No.
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days)			
State, Zip: IA, 52761				
Phone:	PO #: 254338			
Email: sbennett@mpw.org and neil.hoskins@mpw.org	WO #:			
Project Name: Muscatine Power & Water CCR Landfill	TestAmerica Project #:			
Site: Iowa	Event: Fall 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A CCR List, 7470A Mercury	2540C TDS, SM4500_H+ pH	9056A Chloride, Fluoride, Sulfate	Radium-226	Radium-228									Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	N	N											X	
DUP-1	9/8/25	1200	G	GW			X	X	X	X	X										
DUP-2	9/9/25	1200	G	GW			X	X	X	X	X										
LEACHATE	9/10/25	1410	G	W			X	X	X	X	X										

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

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

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

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
			ES	09/12/25 0825	CET
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-315538-1
SDG Number:

Login Number: 315538
List Number: 1
Creator: Schaufenbuel, Erin

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	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Sam Bennett
Muscatine Power & Water
1700 Dick Drake Way
PO BOX 899
Muscatine, Iowa 52761

Generated 10/9/2025 3:02:50 PM

JOB DESCRIPTION

Muscatine Power & Water CCR Landfill

JOB NUMBER

310-315538-2

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

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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10/9/2025 3:02:50 PM

Authorized for release by
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Job ID: 310-315538-2 — Eurofins Cedar Falls

Job Narrative
310-315538-2

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 9/12/2025 8:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.9°C, 1.3°C, 1.7°C and 2.7°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.

Sample Summary

Client: Muscatine Power & Water
Job ID: 310-315538-2
Project/Site: Muscatine Power & Water CCR Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-315538-1	MW-4B	Ground Water	09/10/25 09:45	09/12/25 08:25	Iowa
310-315538-2	MW-5B	Ground Water	09/10/25 12:25	09/12/25 08:25	Iowa
310-315538-3	MW-6A	Ground Water	09/10/25 10:40	09/12/25 08:25	Iowa
310-315538-4	MW-8	Ground Water	09/09/25 09:20	09/12/25 08:25	Iowa
310-315538-5	MW-10	Ground Water	09/08/25 15:10	09/12/25 08:25	Iowa
310-315538-6	MW-14A	Ground Water	09/09/25 13:55	09/12/25 08:25	Iowa
310-315538-7	MW-15A	Ground Water	09/10/25 08:25	09/12/25 08:25	Iowa
310-315538-8	MW-21	Ground Water	09/09/25 12:40	09/12/25 08:25	Iowa
310-315538-9	MW-22	Ground Water	09/08/25 11:45	09/12/25 08:25	Iowa
310-315538-10	MW-23	Ground Water	09/08/25 13:50	09/12/25 08:25	Iowa
310-315538-11	DUP-1	Ground Water	09/08/25 12:00	09/12/25 08:25	Iowa
310-315538-12	DUP-2	Ground Water	09/09/25 12:00	09/12/25 08:25	Iowa
310-315538-13	LEACHATE	Water	09/10/25 14:10	09/12/25 08:25	Iowa

Detection Summary

Client: Muscatine Power & Water
Job ID: 310-315538-2
Project/Site: Muscatine Power & Water CCR Landfill

Client Sample ID: MW-4B — **Lab Sample ID: 310-315538-1**

No Detections.

Client Sample ID: MW-5B — **Lab Sample ID: 310-315538-2**

No Detections.

Client Sample ID: MW-6A — **Lab Sample ID: 310-315538-3**

No Detections.

Client Sample ID: MW-8 — **Lab Sample ID: 310-315538-4**

No Detections.

Client Sample ID: MW-10 — **Lab Sample ID: 310-315538-5**

No Detections.

Client Sample ID: MW-14A — **Lab Sample ID: 310-315538-6**

No Detections.

Client Sample ID: MW-15A — **Lab Sample ID: 310-315538-7**

No Detections.

Client Sample ID: MW-21 — **Lab Sample ID: 310-315538-8**

No Detections.

Client Sample ID: MW-22 — **Lab Sample ID: 310-315538-9**

No Detections.

Client Sample ID: MW-23 — **Lab Sample ID: 310-315538-10**

No Detections.

Client Sample ID: DUP-1 — **Lab Sample ID: 310-315538-11**

No Detections.

Client Sample ID: DUP-2 — **Lab Sample ID: 310-315538-12**

No Detections.

Client Sample ID: LEACHATE — **Lab Sample ID: 310-315538-13**

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-4B
Lab Sample ID: 310-315538-1

Date Collected: 09/10/25 09:45
Matrix: Ground Water

Date Received: 09/12/25 08:25

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.571**		0.276	0.280	1.00	0.327	pCi/L	09/16/25 07:45	10/08/25 15:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:35*	*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	<0.619	U	0.383	0.385	1.00	0.619	pCi/L	09/16/25 07:51	10/08/25 11:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:46*	*1*
Y Carrier	*78.5*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:46*	*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	**0.952**		0.472	0.476	5.00	0.619	pCi/L		10/09/25 12:32	1

Client Sample ID: MW-5B
Lab Sample ID: 310-315538-2
Date Collected: 09/10/25 12:25
Matrix: Ground Water
Date Received: 09/12/25 08:25

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.487		0.265	0.268	1.00	0.339	pCi/L	09/16/25 07:45	10/08/25 15:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.1*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:36*	*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	0.685		0.356	0.362	1.00	0.493	pCi/L	09/16/25 07:51	10/08/25 11:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.1*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:46*	*1*
Y Carrier	*78.9*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:46*	*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	1.17		0.444	0.450	5.00	0.493	pCi/L		10/09/25 12:32	1

Client Sample ID: MW-6A
Lab Sample ID: 310-315538-3
Date Collected: 09/10/25 10:40
Matrix: Ground Water
Date Received: 09/12/25 08:25

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.444	U	0.265	0.266	1.00	0.444	pCi/L	09/16/25 07:45	10/08/25 15:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.6*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:36*	*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	**1.14**		0.442	0.454	1.00	0.573	pCi/L	09/16/25 07:51	10/08/25 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.6*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:47*	*1*
Y Carrier	*81.9*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:47*	*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	**1.33**		0.515	0.526	5.00	0.573	pCi/L		10/09/25 12:32	1

Client Sample ID: MW-8
Lab Sample ID: 310-315538-4
Date Collected: 09/09/25 09:20
Matrix: Ground Water
Date Received: 09/12/25 08:25

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.384	U	0.197	0.197	1.00	0.384	pCi/L	09/16/25 07:45	10/08/25 15:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.0*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:36*	*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	<0.630	U	0.417	0.421	1.00	0.630	pCi/L	09/16/25 07:51	10/08/25 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.0*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:47*	*1*
Y Carrier	*77.0*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:47*	*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	**0.638**		0.461	0.465	5.00	0.630	pCi/L		10/09/25 12:32	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-2

Client Sample ID: MW-10

Date Collected: 09/08/25 15:10
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-5

Matrix: Ground Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.609**		0.276	0.282	1.00	0.316	pCi/L	09/16/25 07:45	10/08/25 15:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.4*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:45*	*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	<0.534	U	0.354	0.356	1.00	0.534	pCi/L	09/16/25 07:51	10/08/25 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.4*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:47*	*1*
Y Carrier	*76.6*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:47*	*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	**1.11**		0.449	0.454	5.00	0.534	pCi/L		10/09/25 12:32	1

Client Sample ID: MW-14A
Lab Sample ID: 310-315538-6

Date Collected: 09/09/25 13:55
Matrix: Ground Water

Date Received: 09/12/25 08:25

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.371	U	0.175	0.175	1.00	0.371	pCi/L	09/16/25 07:45	10/08/25 15:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.5*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:45*	*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	**1.58**		0.482	0.504	1.00	0.568	pCi/L	09/16/25 07:51	10/08/25 11:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.5*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:47*	*1*
Y Carrier	*80.0*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:47*	*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	**1.54**		0.513	0.534	5.00	0.568	pCi/L		10/09/25 12:32	1

Client Sample ID: MW-15A
Lab Sample ID: 310-315538-7

Date Collected: 09/10/25 08:25
Matrix: Ground Water

Date Received: 09/12/25 08:25

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.487**		0.275	0.278	1.00	0.360	pCi/L	09/16/25 07:45	10/08/25 15:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.9*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:45*	*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	<0.524	U	0.300	0.301	1.00	0.524	pCi/L	09/16/25 07:51	10/08/25 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.9*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*1*
Y Carrier	*81.9*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*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	**0.626**		0.407	0.410	5.00	0.524	pCi/L		10/09/25 12:32	1

Client Sample ID: MW-21
Lab Sample ID: 310-315538-8
Date Collected: 09/09/25 12:40
Matrix: Ground Water
Date Received: 09/12/25 08:25

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.429	U	0.243	0.243	1.00	0.429	pCi/L	09/16/25 07:45	10/08/25 15:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.8*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:45*	*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	**1.00**		0.383	0.394	1.00	0.452	pCi/L	09/16/25 07:51	10/08/25 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.8*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*1*
Y Carrier	*80.0*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*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	**1.13**		0.454	0.463	5.00	0.452	pCi/L		10/09/25 12:32	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-2

Client Sample ID: MW-22

Date Collected: 09/08/25 11:45
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315538-9

Matrix: Ground Water

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.548**		0.302	0.306	1.00	0.396	pCi/L	09/16/25 07:45	10/08/25 15:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.8*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:45*	*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	<0.525	U	0.337	0.339	1.00	0.525	pCi/L	09/16/25 07:51	10/08/25 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.8*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*1*
Y Carrier	*79.3*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*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	**0.942**		0.453	0.457	5.00	0.525	pCi/L		10/09/25 12:32	1

Client Sample ID: MW-23
Lab Sample ID: 310-315538-10

Date Collected: 09/08/25 13:50
Matrix: Ground Water
Date Received: 09/12/25 08:25

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.488	U	0.292	0.293	1.00	0.488	pCi/L	09/16/25 07:45	10/08/25 15:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.9*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:45*	*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	**1.73**		0.619	0.639	1.00	0.759	pCi/L	09/16/25 07:51	10/08/25 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.9*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*1*
Y Carrier	*78.9*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*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	**1.96**		0.684	0.703	5.00	0.759	pCi/L		10/09/25 12:32	1

Client Sample ID: DUP-1
Lab Sample ID: 310-315538-11
Date Collected: 09/08/25 12:00
Matrix: Ground Water
Date Received: 09/12/25 08:25

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.358	U	0.231	0.232	1.00	0.358	pCi/L	09/16/25 07:45	10/08/25 15:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.2*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:45*	*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	**0.855**		0.370	0.378	1.00	0.486	pCi/L	09/16/25 07:51	10/08/25 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.2*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*1*
Y Carrier	*84.1*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*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	**1.10**		0.436	0.444	5.00	0.486	pCi/L		10/09/25 12:32	1

Client Sample ID: DUP-2
Lab Sample ID: 310-315538-12

Date Collected: 09/09/25 12:00
Matrix: Ground Water
Date Received: 09/12/25 08:25

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.473	U	0.257	0.257	1.00	0.473	pCi/L	09/16/25 07:45	10/08/25 15:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.0*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:45*	*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	**1.25**		0.453	0.467	1.00	0.558	pCi/L	09/16/25 07:51	10/08/25 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.0*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*1*
Y Carrier	*77.8*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*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	**1.32**		0.521	0.533	5.00	0.558	pCi/L		10/09/25 12:32	1

Client Sample ID: LEACHATE
Lab Sample ID: 310-315538-13

Date Collected: 09/10/25 14:10
Matrix: Water
Date Received: 09/12/25 08:25

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.346	U	0.202	0.203	1.00	0.346	pCi/L	09/16/25 07:45	10/08/25 15:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.0*		*30 - 110*	*09/16/25 07:45*	*10/08/25 15:41*	*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	**1.19**		0.524	0.536	1.00	0.698	pCi/L	09/16/25 07:51	10/08/25 11:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.0*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*1*
Y Carrier	*79.3*		*30 - 110*	*09/16/25 07:51*	*10/08/25 11:48*	*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	**1.33**		0.562	0.573	5.00	0.698	pCi/L		10/09/25 12:32	1

Definitions/Glossary

Client: Muscatine Power & Water
Job ID: 310-315538-2
Project/Site: Muscatine Power & Water CCR Landfill

Qualifiers

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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

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-736233/1-A
Matrix: Water
Analysis Batch: 739717

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 736233

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	<0.406	U	0.198	0.198	1.00	0.406	pCi/L	09/16/25 07:45	10/08/25 15:34	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.2		30 - 110	09/16/25 07:45	10/08/25 15:34	1

Lab Sample ID: LCS 160-736233/2-A
Matrix: Water
Analysis Batch: 739717

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 736233

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			9.57	9.278		1.25	1.00	0.351	pCi/L	97	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	90.5		30 - 110

Lab Sample ID: 310-315538-1 DU
Matrix: Ground Water
Analysis Batch: 739717

Client Sample ID: MW-4B
Prep Type: Total/NA
Prep Batch: 736233

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.571			<0.359	U	0.238	1.00	0.359	pCi/L			0.57	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	93.4		30 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-736234/1-A
Matrix: Water
Analysis Batch: 739694

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 736234

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.7758		0.425	0.431	1.00	0.611	pCi/L	09/16/25 07:51	10/08/25 11:46	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.2		30 - 110	09/16/25 07:51	10/08/25 11:46	1
Y Carrier	76.6		30 - 110	09/16/25 07:51	10/08/25 11:46	1

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

Lab Sample ID: LCS 160-736234/2-A
Matrix: Water
Analysis Batch: 739694

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 736234

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			9.00	10.92		1.44	1.00	0.542	pCi/L	121	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*90.5*		*30 - 110*
Y Carrier	*79.3*		*30 - 110*

Lab Sample ID: 310-315538-1 DU
Matrix: Ground Water
Analysis Batch: 739694

Client Sample ID: MW-4B
Prep Type: Total/NA
Prep Batch: 736234

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	<0.619	U		1.002		0.415	1.00	0.527	pCi/L			0.78	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*93.4*		*30 - 110*
Y Carrier	*81.1*		*30 - 110*

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Prep Batch: 736233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	PrecSep-21	
310-315538-2	MW-5B	Total/NA	Ground Water	PrecSep-21	
310-315538-3	MW-6A	Total/NA	Ground Water	PrecSep-21	
310-315538-4	MW-8	Total/NA	Ground Water	PrecSep-21	
310-315538-5	MW-10	Total/NA	Ground Water	PrecSep-21	
310-315538-6	MW-14A	Total/NA	Ground Water	PrecSep-21	
310-315538-7	MW-15A	Total/NA	Ground Water	PrecSep-21	
310-315538-8	MW-21	Total/NA	Ground Water	PrecSep-21	
310-315538-9	MW-22	Total/NA	Ground Water	PrecSep-21	
310-315538-10	MW-23	Total/NA	Ground Water	PrecSep-21	
310-315538-11	DUP-1	Total/NA	Ground Water	PrecSep-21	
310-315538-12	DUP-2	Total/NA	Ground Water	PrecSep-21	
310-315538-13	LEACHATE	Total/NA	Water	PrecSep-21	
MB 160-736233/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-736233/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
310-315538-1 DU	MW-4B	Total/NA	Ground Water	PrecSep-21	

Prep Batch: 736234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315538-1	MW-4B	Total/NA	Ground Water	PrecSep_0	
310-315538-2	MW-5B	Total/NA	Ground Water	PrecSep_0	
310-315538-3	MW-6A	Total/NA	Ground Water	PrecSep_0	
310-315538-4	MW-8	Total/NA	Ground Water	PrecSep_0	
310-315538-5	MW-10	Total/NA	Ground Water	PrecSep_0	
310-315538-6	MW-14A	Total/NA	Ground Water	PrecSep_0	
310-315538-7	MW-15A	Total/NA	Ground Water	PrecSep_0	
310-315538-8	MW-21	Total/NA	Ground Water	PrecSep_0	
310-315538-9	MW-22	Total/NA	Ground Water	PrecSep_0	
310-315538-10	MW-23	Total/NA	Ground Water	PrecSep_0	
310-315538-11	DUP-1	Total/NA	Ground Water	PrecSep_0	
310-315538-12	DUP-2	Total/NA	Ground Water	PrecSep_0	
310-315538-13	LEACHATE	Total/NA	Water	PrecSep_0	
MB 160-736234/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-736234/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
310-315538-1 DU	MW-4B	Total/NA	Ground Water	PrecSep_0	

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-315538-2
Project/Site: Muscatine Power & Water CCR Landfill

Client Sample ID: MW-4B
Lab Sample ID: 310-315538-1
Date Collected: 09/10/25 09:45
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739717	SWS	EET SL	10/08/25 15:35
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:46
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Client Sample ID: MW-5B
Lab Sample ID: 310-315538-2
Date Collected: 09/10/25 12:25
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739717	SWS	EET SL	10/08/25 15:36
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:46
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Client Sample ID: MW-6A
Lab Sample ID: 310-315538-3
Date Collected: 09/10/25 10:40
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739717	SWS	EET SL	10/08/25 15:36
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:47
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Client Sample ID: MW-8
Lab Sample ID: 310-315538-4
Date Collected: 09/09/25 09:20
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739717	SWS	EET SL	10/08/25 15:36
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:47
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-315538-2
Project/Site: Muscatine Power & Water CCR Landfill

Client Sample ID: MW-10
Lab Sample ID: 310-315538-5
Date Collected: 09/08/25 15:10
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739713	SWS	EET SL	10/08/25 15:45
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:47
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Client Sample ID: MW-14A
Lab Sample ID: 310-315538-6
Date Collected: 09/09/25 13:55
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739713	SWS	EET SL	10/08/25 15:45
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:47
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Client Sample ID: MW-15A
Lab Sample ID: 310-315538-7
Date Collected: 09/10/25 08:25
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739713	SWS	EET SL	10/08/25 15:45
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:48
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Client Sample ID: MW-21
Lab Sample ID: 310-315538-8
Date Collected: 09/09/25 12:40
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739713	SWS	EET SL	10/08/25 15:45
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:48
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-315538-2
Project/Site: Muscatine Power & Water CCR Landfill

Client Sample ID: MW-22
Lab Sample ID: 310-315538-9
Date Collected: 09/08/25 11:45
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739713	SWS	EET SL	10/08/25 15:45
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:48
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Client Sample ID: MW-23
Lab Sample ID: 310-315538-10
Date Collected: 09/08/25 13:50
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739713	SWS	EET SL	10/08/25 15:45
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:48
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Client Sample ID: DUP-1
Lab Sample ID: 310-315538-11
Date Collected: 09/08/25 12:00
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739713	SWS	EET SL	10/08/25 15:45
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:48
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Client Sample ID: DUP-2
Lab Sample ID: 310-315538-12
Date Collected: 09/09/25 12:00
Matrix: Ground Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739713	SWS	EET SL	10/08/25 15:45
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:48
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-315538-2
Project/Site: Muscatine Power & Water CCR Landfill

Client Sample ID: LEACHATE
Lab Sample ID: 310-315538-13
Date Collected: 09/10/25 14:10
Matrix: Water
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			736233	JTR	EET SL	09/16/25 07:45
Total/NA	Analysis	9315		1	739694	SWS	EET SL	10/08/25 15:41
Total/NA	Prep	PrecSep_0			736234	JTR	EET SL	09/16/25 07:51
Total/NA	Analysis	9320		1	739694	SWS	EET SL	10/08/25 11:48
Total/NA	Analysis	Ra226_Ra228		1	739928	SCB	EET SL	10/09/25 12:32

Laboratory References:

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

Accreditation/Certification Summary

Client: Muscatine Power & Water
Job ID: 310-315538-2
Project/Site: Muscatine Power & Water CCR Landfill

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	12-01-26

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
9315	PrecSep-21	Water	Radium-226
9320	PrecSep_0	Ground Water	Radium-228
9320	PrecSep_0	Water	Radium-228
Ra226_Ra228		Ground Water	Combined Radium 226 + 228
Ra226_Ra228		Water	Combined Radium 226 + 228

Method Summary

Client: Muscatine Power & Water
Job ID: 310-315538-2
Project/Site: Muscatine Power & Water CCR Landfill

Method	Method Description	Protocol	Laboratory
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
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 SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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310-315538 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client. Muscatine Power + Water

City/State: CITY Muscatine STATE IA | Project

Receipt Information

Date/Time Received. DATE 09/12/25 TIME 0825 | Received By ES

Delivery Type. ☑ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other._____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes:* Cooler ID
Multiple Coolers?	☑ Yes	☐ No	*If yes:* Cooler # 1 of 4
Cooler Custody Seals Present? No	☑ Yes	☐ No	*If yes:* Cooler custody seals intact? ☑ Yes ☐
Sample Custody Seals Present? No	☐ Yes	☑ No	*If yes:* Sample custody seals intact? ☐ Yes ☐
Trip Blank Present?	☐ Yes	☑ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE

Thermometer ID. R | 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). 0.9 | Corrected Temp (°C): 0.9

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

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Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power & Water

City/State: CITY Muscatine STATE IA Project

Receipt Information

Date/Time Received: DATE 09/12/25 TIME 0825 Received By ES

Delivery Type. ☒ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes* Cooler ID

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # 1 of 4

Cooler Custody Seals Present? ☒ Yes ☐ No *If yes:* Cooler custody seals intact? ☒ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☒ No *If yes.* Which VOA samples are in cooler? ↓

Temperature Record

Coolant ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE

Thermometer ID. R Correction Factor (°C):

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C) 2.7 Corrected Temp (°C). 2.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used		
Uncorrected Temp (°C):		
Corrected Temp (°C).		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power + Water

City/State: CITY: Muscatine | STATE: IA | Project:

Receipt Information

Date/Time Received: DATE: 09/12/25 | TIME: 0825 | Received By: ES

Delivery Type: ☑ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other._____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☑ Yes	☐ No	*If yes* Cooler ID:
Multiple Coolers?	☑ Yes	☐ No	*If yes* Cooler # 3 of 4
Cooler Custody Seals Present? No	☑ Yes	☐ No	*If yes* Cooler custody seals intact? ☑ Yes ☐
Sample Custody Seals Present? No	☐ Yes	☑ No	*If yes* Sample custody seals intact? ☐ Yes ☐
Trip Blank Present?	☐ Yes	☑ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE

Thermometer ID: R | 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): 1.3 | Corrected Temp (°C): 1.3

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used		
Uncorrected Temp (°C):		
Corrected Temp (°C)		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE. If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power + Water

City/State: CITY Muscatine | STATE IA | Project

Receipt Information

Date/Time Received: DATE 09/12/25 | TIME 0825 | Received By: ES

Delivery Type. ☑ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other._____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ☐ No *If yes* Cooler # 4 of 4

Cooler Custody Seals Present? ☑ Yes ☐ No *If yes.* Cooler custody seals intact? ☑ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R | 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): 1.7 | Corrected Temp (°C): 1.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used.		
Uncorrected Temp (°C).		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes.* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob michels@et.eurofinsus com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days)			
State Zip: IA, 52761				
Phone:	PO #: 254338			
Email: sbennett@mpw org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water CCR Landfill	TestAmerica Project #:			
Site: Iowa	Event: Fall 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A CCR List, 7470A Mercury	2540C TDS, SM4500_H+ pH	9056A Chloride, Fluoride, Sulfate	Radium-226	Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N	N				
MW-4B	9/10/25	0945	G	GW			X	X	X	X	X		
MW-5B	9/10/25	1225	G	GW			X	X	X	X	X		
MW-6A	9/10/25	1040	G	GW			X	X	X	X	X		
MW-8	9/9/25	0920	G	GW			X	X	X	X	X		
MW-10	9/8/25	1510	G	GW			X	X	X	X	X		
MW-14A	9/9/25	1355	G	GW			X	X	X	X	X		
MW-15A	9/10/25	0825	G	GW			X	X	X	X	X		
MW-21	9/9/25	1240	G	GW			X	X	X	X	X		
MW-22	9/8/25	1145	G	GW			X	X	X	X	X		
MW-23	9/8/25	1350	G	GW			X	X	X	X	X		

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

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

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

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Date/Time	Company		Date/Time	Company
Relinquished by: Sam Bennett	9/11/25 0900	MPW	Received by: ES	09/12/25 0825	EET
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No.
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days)			
State, Zip: IA, 52761				
Phone:	PO #: 254338			
Email: sbennett@mpw.org and neil.hoskins@mpw.org	WO #:			
Project Name: Muscatine Power & Water CCR Landfill	TestAmerica Project #:			
Site: Iowa	Event: Fall 2025 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A CCR List, 7470A Mercury	2540C TDS, SM4500_H+ pH	9056A Chloride, Fluoride, Sulfate	Radium-226	Radium-228									Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	D	N	N											X	
DUP-1	9/8/25	1200	G	GW			X	X	X	X	X										
DUP-2	9/9/25	1200	G	GW			X	X	X	X	X										
LEACHATE	9/10/25	1410	G	W			X	X	X	X	X										

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

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

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

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
			ES	09/12/25 0825	CET
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-315538-2
SDG Number:

Login Number: 315538
List Number: 1
Creator: Schaufenbuel, Erin

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	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-315538-2
SDG Number:

Login Number: 315538
List Number: 2
Creator: Pinette, Meadow L

List Source: Eurofins St. Louis
List Creation: 09/15/25 11:12 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Tracer/Carrier Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water CCR Landfill

Job ID: 310-315538-2

Method: 9315 - Radium-226 (GFPC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
310-315538-1	MW-4B	91.7
310-315538-1 DU	MW-4B	93.4
310-315538-2	MW-5B	95.1
310-315538-3	MW-6A	87.6
310-315538-4	MW-8	88.0
310-315538-5	MW-10	95.4
310-315538-6	MW-14A	91.5
310-315538-7	MW-15A	93.9
310-315538-8	MW-21	86.8
310-315538-9	MW-22	87.8
310-315538-10	MW-23	82.9
310-315538-11	DUP-1	93.2
310-315538-12	DUP-2	88.0

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9315 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
310-315538-13	LEACHATE	72.0
LCS 160-736233/2-A	Lab Control Sample	90.5
MB 160-736233/1-A	Method Blank	90.2

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
310-315538-1	MW-4B	91.7	78.5
310-315538-1 DU	MW-4B	93.4	81.1
310-315538-2	MW-5B	95.1	78.9
310-315538-3	MW-6A	87.6	81.9
310-315538-4	MW-8	88.0	77.0
310-315538-5	MW-10	95.4	76.6
310-315538-6	MW-14A	91.5	80.0
310-315538-7	MW-15A	93.9	81.9
310-315538-8	MW-21	86.8	80.0
310-315538-9	MW-22	87.8	79.3
310-315538-10	MW-23	82.9	78.9
310-315538-11	DUP-1	93.2	84.1
310-315538-12	DUP-2	88.0	77.8

Tracer/Carrier Legend

Ba = Ba Carrier

Tracer/Carrier Summary

Client: Muscatine Power & Water
Job ID: 310-315538-2
Project/Site: Muscatine Power & Water CCR Landfill

Y = Y Carrier

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)								
310-315538-13	LEACHATE	72.0	79.3								
LCS 160-736234/2-A	Lab Control Sample	90.5	79.3								
MB 160-736234/1-A	Method Blank	90.2	76.6								

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

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ANALYTICAL REPORT

PREPARED FOR

Attn: Sam Bennett
Muscatine Power & Water
1700 Dick Drake Way
PO BOX 899
Muscatine, Iowa 52761

Generated 10/1/2025 10:14:18 AM

JOB DESCRIPTION

Muscatine Power & Water State Landfill

JOB NUMBER

310-315839-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

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Authorized for release by
Bob Michels, Project Manager I
Bob.Michels@et.eurofinsus.com
(319)277-2401

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Job ID: 310-315839-1 — Eurofins Cedar Falls

Job Narrative
310-315839-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 9/12/2025 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice.

Metals
Method 6020B: The laboratory control sample (LCS), CRI, ICV, ICSAB for preparation batch 310-467334 and analytical batch 310-468312 recovered outside control limits for the following analytes: silver. 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
Method 2540C_Calcd: The following samples were received outside of holding time: MW-24 (310-315839-1), MW-26 (310-315839-2) and MW-27 (310-315839-3).

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

Sample Summary

Client: Muscatine Power & Water
Job ID: 310-315839-1
Project/Site: Muscatine Power & Water State Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-315839-1	MW-24	Water	09/09/25 08:25	09/12/25 10:00	Iowa
310-315839-2	MW-26	Water	09/09/25 11:05	09/12/25 10:00	Iowa
310-315839-3	MW-27	Water	09/09/25 12:05	09/12/25 10:00	Iowa

Detection Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water State Landfill

Job ID: 310-315839-1

Client Sample ID: MW-24 — Lab Sample ID: 310-315839-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.101		0.00200		mg/L	1		6020B	Total/NA
Boron	0.126		0.100		mg/L	1		6020B	Total/NA
Calcium	72.9		0.500		mg/L	1		6020B	Total/NA
Magnesium	34.6		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0326		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00250		0.00200		mg/L	1		6020B	Total/NA
Strontium	0.0790		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.222		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	38.2		25.0		mg/L	5		D516-16	Total/NA
Total Dissolved Solids	376	H	50.0		mg/L	1		SM 2540C	Total/NA
Chloride	26.5		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: MW-26 — Lab Sample ID: 310-315839-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0589		0.00200		mg/L	1		6020B	Total/NA
Boron	4.81		0.400		mg/L	4		6020B	Total/NA
Calcium	114		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0118		0.0100		mg/L	1		6020B	Total/NA
Magnesium	44.8		0.500		mg/L	1		6020B	Total/NA
Manganese	0.146		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.120		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.187		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	264		50.0		mg/L	10		D516-16	Total/NA
Total Dissolved Solids	672	H	50.0		mg/L	1		SM 2540C	Total/NA
Chloride	17.1		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: MW-27 — Lab Sample ID: 310-315839-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.0623		0.0500		mg/L	1		6020B	Total/NA
Barium	0.0804		0.00200		mg/L	1		6020B	Total/NA
Boron	2.46		0.100		mg/L	1		6020B	Total/NA
Calcium	55.5		0.500		mg/L	1		6020B	Total/NA
Magnesium	24.2		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0138		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.122		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.173		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	55.2		25.0		mg/L	5		D516-16	Total/NA
Total Dissolved Solids	308	H	50.0		mg/L	1		SM 2540C	Total/NA
Chloride	24.4		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water State Landfill

Job ID: 310-315839-1

Client Sample ID: MW-24

Date Collected: 09/09/25 08:25
Date Received: 09/12/25 10:00

Lab Sample ID: 310-315839-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Arsenic	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 15:59	1
Barium	**0.101**		0.00200		mg/L		09/22/25 09:30	09/26/25 15:59	1
Beryllium	<0.00100		0.00100		mg/L		09/22/25 09:30	09/26/25 15:59	1
Boron	**0.126**		0.100		mg/L		09/22/25 09:30	09/26/25 15:59	1
Calcium	**72.9**		0.500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Cobalt	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Copper	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Iron	<0.100		0.100		mg/L		09/22/25 09:30	09/26/25 15:59	1
Lead	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Lithium	<0.0100		0.0100		mg/L		09/22/25 09:30	09/26/25 15:59	1
Magnesium	**34.6**		0.500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Manganese	**0.0326**		0.0100		mg/L		09/22/25 09:30	09/26/25 15:59	1
Molybdenum	**0.00250**		0.00200		mg/L		09/22/25 09:30	09/26/25 15:59	1
Nickel	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Selenium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Strontium	**0.0790**		0.00100		mg/L		09/22/25 09:30	09/26/25 15:59	1
Vanadium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Zinc	<0.0200		0.0200		mg/L		09/22/25 09:30	09/26/25 15:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.222**		0.100		mg/L			09/23/25 20:05	1
Sulfate (ASTM D516-16)	**38.2**		25.0		mg/L			09/23/25 13:50	5
Total Dissolved Solids (SM 2540C)	**376**	**H**	50.0		mg/L			09/18/25 14:46	1
Chloride (SM 4500 Cl- E)	**26.5**		2.00		mg/L			09/19/25 01:15	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water State Landfill

Job ID: 310-315839-1

Client Sample ID: MW-26

Date Collected: 09/09/25 11:05
Date Received: 09/12/25 10:00

Lab Sample ID: 310-315839-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Arsenic	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 15:48	1
Barium	**0.0589**		0.00200		mg/L		09/22/25 09:30	09/26/25 15:48	1
Beryllium	<0.00100		0.00100		mg/L		09/22/25 09:30	09/26/25 15:48	1
Boron	**4.81**		0.400		mg/L		09/22/25 09:30	09/30/25 17:12	4
Calcium	**114**		0.500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Cobalt	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Copper	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Iron	<0.100		0.100		mg/L		09/22/25 09:30	09/26/25 15:48	1
Lead	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Lithium	**0.0118**		0.0100		mg/L		09/22/25 09:30	09/26/25 15:48	1
Magnesium	**44.8**		0.500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Manganese	**0.146**		0.0100		mg/L		09/22/25 09:30	09/26/25 15:48	1
Molybdenum	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 15:48	1
Nickel	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Selenium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Strontium	**0.120**		0.00100		mg/L		09/22/25 09:30	09/26/25 15:48	1
Vanadium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Zinc	<0.0200		0.0200		mg/L		09/22/25 09:30	09/26/25 15:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.187**		0.100		mg/L			09/23/25 20:16	1
Sulfate (ASTM D516-16)	**264**		50.0		mg/L			09/23/25 13:50	10
Total Dissolved Solids (SM 2540C)	**672**	**H**	50.0		mg/L			09/18/25 14:46	1
Chloride (SM 4500 Cl- E)	**17.1**		2.00		mg/L			09/19/25 01:15	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water State Landfill

Job ID: 310-315839-1

Client Sample ID: MW-27

Date Collected: 09/09/25 12:05
Date Received: 09/12/25 10:00

Lab Sample ID: 310-315839-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.0623**		0.0500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Arsenic	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 15:51	1
Barium	**0.0804**		0.00200		mg/L		09/22/25 09:30	09/26/25 15:51	1
Beryllium	<0.00100		0.00100		mg/L		09/22/25 09:30	09/26/25 15:51	1
Boron	**2.46**		0.100		mg/L		09/22/25 09:30	09/26/25 15:51	1
Calcium	**55.5**		0.500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Cobalt	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Copper	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Iron	<0.100		0.100		mg/L		09/22/25 09:30	09/26/25 15:51	1
Lead	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Lithium	<0.0100		0.0100		mg/L		09/22/25 09:30	09/26/25 15:51	1
Magnesium	**24.2**		0.500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Manganese	**0.0138**		0.0100		mg/L		09/22/25 09:30	09/26/25 15:51	1
Molybdenum	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 15:51	1
Nickel	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Selenium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Strontium	**0.122**		0.00100		mg/L		09/22/25 09:30	09/26/25 15:51	1
Vanadium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Zinc	<0.0200		0.0200		mg/L		09/22/25 09:30	09/26/25 15:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.173**		0.100		mg/L			09/23/25 20:19	1
Sulfate (ASTM D516-16)	**55.2**		25.0		mg/L			09/23/25 14:24	5
Total Dissolved Solids (SM 2540C)	**308**	**H**	50.0		mg/L			09/18/25 14:46	1
Chloride (SM 4500 Cl- E)	**24.4**		2.00		mg/L			09/19/25 01:16	1

Definitions/Glossary

Client: Muscatine Power & Water
Job ID: 310-315839-1
Project/Site: Muscatine Power & Water State Landfill

Qualifiers

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.

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

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-467334/1-A
Matrix: Water
Analysis Batch: 468195

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 467334

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Arsenic	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 14:55	1
Barium	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 14:55	1
Beryllium	<0.00100		0.00100		mg/L		09/22/25 09:30	09/26/25 14:55	1
Boron	<0.100		0.100		mg/L		09/22/25 09:30	09/26/25 14:55	1
Calcium	<0.500		0.500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Cobalt	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Copper	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Iron	<0.100		0.100		mg/L		09/22/25 09:30	09/26/25 14:55	1
Lead	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Lithium	<0.0100		0.0100		mg/L		09/22/25 09:30	09/26/25 14:55	1
Magnesium	<0.500		0.500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Manganese	<0.0100		0.0100		mg/L		09/22/25 09:30	09/26/25 14:55	1
Molybdenum	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 14:55	1
Nickel	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Selenium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Strontium	<0.00100		0.00100		mg/L		09/22/25 09:30	09/26/25 14:55	1
Vanadium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Zinc	<0.0200		0.0200		mg/L		09/22/25 09:30	09/26/25 14:55	1

Lab Sample ID: LCS 310-467334/2-A
Matrix: Water
Analysis Batch: 468195

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467334

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.200	0.2068		mg/L		103	80 - 120
Arsenic	0.200	0.1999		mg/L		100	80 - 120
Barium	0.100	0.1026		mg/L		103	80 - 120
Beryllium	0.100	0.1001		mg/L		100	80 - 120
Boron	0.200	0.2299		mg/L		115	80 - 120
Calcium	2.00	2.041		mg/L		102	80 - 120
Cobalt	0.100	0.1031		mg/L		103	80 - 120
Copper	0.200	0.2084		mg/L		104	80 - 120
Iron	0.200	0.2310		mg/L		115	80 - 120
Lead	0.200	0.2045		mg/L		102	80 - 120
Lithium	0.200	0.2058		mg/L		103	80 - 120
Magnesium	2.00	2.151		mg/L		108	80 - 120
Manganese	0.100	0.1003		mg/L		100	80 - 120
Molybdenum	0.200	0.2143		mg/L		107	80 - 120
Nickel	0.200	0.2026		mg/L		101	80 - 120
Selenium	0.400	0.3884		mg/L		97	80 - 120
Strontium	0.200	0.1968		mg/L		98	80 - 120
Vanadium	0.100	0.09854		mg/L		99	80 - 120
Zinc	0.200	0.1868		mg/L		93	80 - 120

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

Lab Sample ID: 310-315839-3 DU
Matrix: Water
Analysis Batch: 468195

Client Sample ID: MW-27
Prep Type: Total/NA
Prep Batch: 467334

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	0.0623		0.07155		mg/L		14	20
Arsenic	<0.00200		<0.00200		mg/L		NC	20
Barium	0.0804		0.08166		mg/L		2	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Boron	2.46		2.522		mg/L		3	20
Calcium	55.5		56.40		mg/L		2	20
Cobalt	<0.000500		<0.000500		mg/L		NC	20
Copper	<0.00500		<0.00500		mg/L		NC	20
Iron	<0.100		<0.100		mg/L		NC	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Lithium	<0.0100		<0.0100		mg/L		NC	20
Magnesium	24.2		24.68		mg/L		2	20
Manganese	0.0138		0.01405		mg/L		2	20
Molybdenum	<0.00200		<0.00200		mg/L		NC	20
Nickel	<0.00500		<0.00500		mg/L		NC	20
Selenium	<0.00500		<0.00500		mg/L		NC	20
Strontium	0.122		0.1226		mg/L		0.5	20
Vanadium	<0.00500		<0.00500		mg/L		NC	20
Zinc	<0.0200		<0.0200		mg/L		NC	20

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-467684/5
Matrix: Water
Analysis Batch: 467684

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.100		0.100		mg/L			09/23/25 19:59	1

Lab Sample ID: LCS 310-467684/6
Matrix: Water
Analysis Batch: 467684

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	1.950		mg/L		97	90 - 110

Lab Sample ID: 310-315839-1 MS
Matrix: Water
Analysis Batch: 467684

Client Sample ID: MW-24
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.222		1.00	1.086		mg/L		86	75 - 125

Lab Sample ID: 310-315839-1 MSD
Matrix: Water
Analysis Batch: 467684

Client Sample ID: MW-24
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.222		1.00	1.112		mg/L		89	75 - 125	2	16

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-467663/16
Matrix: Water
Analysis Batch: 467663

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			09/23/25 13:49	1

Lab Sample ID: MB 310-467663/46
Matrix: Water
Analysis Batch: 467663

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			09/23/25 14:02	1

Lab Sample ID: LCS 310-467663/17
Matrix: Water
Analysis Batch: 467663

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	9.398		mg/L		94	85 - 115

Lab Sample ID: LCS 310-467663/47
Matrix: Water
Analysis Batch: 467663

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	9.123		mg/L		91	85 - 115

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

Lab Sample ID: MB 310-467197/1
Matrix: Water
Analysis Batch: 467197

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			09/18/25 14:46	1

Lab Sample ID: LCS 310-467197/2
Matrix: Water
Analysis Batch: 467197

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	958.0		mg/L		96	89 - 110

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-467220/16
Matrix: Water
Analysis Batch: 467220

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.00		2.00		mg/L			09/19/25 00:28	1

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: LCS 310-467220/14
Matrix: Water
Analysis Batch: 467220

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	9.993		mg/L		100	90 - 110		

Metals

Prep Batch: 467334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-1	MW-24	Total/NA	Water	3005A	
310-315839-2	MW-26	Total/NA	Water	3005A	
310-315839-3	MW-27	Total/NA	Water	3005A	
MB 310-467334/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-467334/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-315839-3 DU	MW-27	Total/NA	Water	3005A	

Analysis Batch: 468195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-1	MW-24	Total/NA	Water	6020B	467334
310-315839-2	MW-26	Total/NA	Water	6020B	467334
310-315839-3	MW-27	Total/NA	Water	6020B	467334
MB 310-467334/1-A	Method Blank	Total/NA	Water	6020B	467334
LCS 310-467334/2-A	Lab Control Sample	Total/NA	Water	6020B	467334
310-315839-3 DU	MW-27	Total/NA	Water	6020B	467334

Analysis Batch: 468473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-2	MW-26	Total/NA	Water	6020B	467334

General Chemistry

Analysis Batch: 467197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-1	MW-24	Total/NA	Water	SM 2540C	
310-315839-2	MW-26	Total/NA	Water	SM 2540C	
310-315839-3	MW-27	Total/NA	Water	SM 2540C	
MB 310-467197/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-467197/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 467220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-1	MW-24	Total/NA	Water	SM 4500 Cl- E	
310-315839-2	MW-26	Total/NA	Water	SM 4500 Cl- E	
310-315839-3	MW-27	Total/NA	Water	SM 4500 Cl- E	
MB 310-467220/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-467220/14	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 467663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-1	MW-24	Total/NA	Water	D516-16	
310-315839-2	MW-26	Total/NA	Water	D516-16	
310-315839-3	MW-27	Total/NA	Water	D516-16	
MB 310-467663/16	Method Blank	Total/NA	Water	D516-16	
MB 310-467663/46	Method Blank	Total/NA	Water	D516-16	
LCS 310-467663/17	Lab Control Sample	Total/NA	Water	D516-16	
LCS 310-467663/47	Lab Control Sample	Total/NA	Water	D516-16	

Analysis Batch: 467684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-1	MW-24	Total/NA	Water	4500 F C-2011	

General Chemistry (Continued)

Analysis Batch: 467684 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-2	MW-26	Total/NA	Water	4500 F C-2011	
310-315839-3	MW-27	Total/NA	Water	4500 F C-2011	
MB 310-467684/5	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-467684/6	Lab Control Sample	Total/NA	Water	4500 F C-2011	
310-315839-1 MS	MW-24	Total/NA	Water	4500 F C-2011	
310-315839-1 MSD	MW-24	Total/NA	Water	4500 F C-2011	

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-315839-1
Project/Site: Muscatine Power & Water State Landfill

Client Sample ID: MW-24
Lab Sample ID: 310-315839-1
Date Collected: 09/09/25 08:25
Matrix: Water
Date Received: 09/12/25 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			467334	WK2X	EET CF	09/22/25 09:30
Total/NA	Analysis	6020B		1	468195	ZRI4	EET CF	09/26/25 15:59
Total/NA	Analysis	4500 F C-2011		1	467684	T5AC	EET CF	09/23/25 20:05
Total/NA	Analysis	D516-16		5	467663	WZC8	EET CF	09/23/25 13:50
Total/NA	Analysis	SM 2540C		1	467197	HE7K	EET CF	09/18/25 14:46
Total/NA	Analysis	SM 4500 Cl- E		1	467220	ZJX4	EET CF	09/19/25 01:15

Client Sample ID: MW-26
Lab Sample ID: 310-315839-2
Date Collected: 09/09/25 11:05
Matrix: Water
Date Received: 09/12/25 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			467334	WK2X	EET CF	09/22/25 09:30
Total/NA	Analysis	6020B		1	468195	ZRI4	EET CF	09/26/25 15:48
Total/NA	Prep	3005A			467334	WK2X	EET CF	09/22/25 09:30
Total/NA	Analysis	6020B		4	468473	NFT2	EET CF	09/30/25 17:12
Total/NA	Analysis	4500 F C-2011		1	467684	T5AC	EET CF	09/23/25 20:16
Total/NA	Analysis	D516-16		10	467663	WZC8	EET CF	09/23/25 13:50
Total/NA	Analysis	SM 2540C		1	467197	HE7K	EET CF	09/18/25 14:46
Total/NA	Analysis	SM 4500 Cl- E		1	467220	ZJX4	EET CF	09/19/25 01:15

Client Sample ID: MW-27
Lab Sample ID: 310-315839-3
Date Collected: 09/09/25 12:05
Matrix: Water
Date Received: 09/12/25 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			467334	WK2X	EET CF	09/22/25 09:30
Total/NA	Analysis	6020B		1	468195	ZRI4	EET CF	09/26/25 15:51
Total/NA	Analysis	4500 F C-2011		1	467684	T5AC	EET CF	09/23/25 20:19
Total/NA	Analysis	D516-16		5	467663	WZC8	EET CF	09/23/25 14:24
Total/NA	Analysis	SM 2540C		1	467197	HE7K	EET CF	09/18/25 14:46
Total/NA	Analysis	SM 4500 Cl- E		1	467220	ZJX4	EET CF	09/19/25 01:16

Laboratory References:
EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Muscatine Power & Water
Job ID: 310-315839-1
Project/Site: Muscatine Power & Water State Landfill

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

Method Summary

Client: Muscatine Power & Water
Job ID: 310-315839-1
Project/Site: Muscatine Power & Water State Landfill

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

ASTM = ASTM International

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

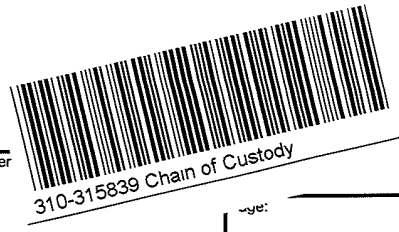
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record



Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob michels@et.eurofinsus com	

Company: Muscatine Power & Water

Address: 1700 Dick Drake Way
City: Muscatine
State, Zip: IA, 52761
Phone:
Email: sbennett@mpw org and neil hoskins@mpw org
Project Name: Muscatine Power & Water State Landfill
Site: Iowa

Due Date Requested:
TAT Requested (days):
PO #: 254338
WO #:
TestAmerica Project #:
Fall 2025 Sampling

Job #:

Analysis Requested

Preservation Codes.

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List, Lithium, TDS	9056A Chloride, Fluoride, Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N		
MW-4B	9/10/25	0945	G	GW			X	X		
MW-5B	9/10/25	1225	G	GW			X	X		
MW-6A	9/10/25	1040	G	GW			X	X		
MW-8	9/9/25	0920	G	GW			X	X		
MW-10	9/8/25	1510	G	GW			X	X		
MW-14A	9/9/25	1355	G	GW			X	X		
MW-15A	9/10/25	0825	G	GW			X	X		
MW-21	9/9/25	1240	G	GW			X	X		
MW-22	9/8/25	1145	G	GW			X	X		
MW-23	9/8/25	1350	G	GW			X	X		
MW-24	9/9/25	0825	G	GW			X	X		

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

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

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

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Sam Bennett	9/11/25 0900	MW			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

10/1/2025

E ⌄ Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob michels@et.eurofinsus com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested:			
City: Muscatine	TAT Requested (days):			
State Zip: IA, 52761				
Phone:	PO #: 254338			
Email: sbennett@mpw.org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water State Landfill	TestAmerica Project #:			
Site: Iowa	Event: Fall 2025 Sampling			

Analysis Requested

Preservation Codes.

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List, Lithium, TDS	9056A Chloride, Fluoride, Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N		
MW-26	9/9/25	1105	G	GW			X	X		
MW-27	9/9/25	1205	G	GW			X	X		
DUP-1	9/8/25	1200	G	GW			X	X		
DUP-2	9/9/25	1200	G	GW			X	X		
LEACHATE	9/10/25	1410	G	W			X	X		

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

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

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

Special Instructions/QC Requirements.

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

10/1/2025

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-315839-1

Login Number: 315839
List Number: 1
Creator: Calhoun, Conner M

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.	False	Received 3 samples off the COC
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").	N/A	
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: Sam Bennett
Muscatine Power & Water
1700 Dick Drake Way
PO BOX 899
Muscatine, Iowa 52761

Generated 10/1/2025 10:14:18 AM

JOB DESCRIPTION

Muscatine Power & Water State Landfill

JOB NUMBER

310-315839-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

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
Bob Michels, Project Manager I
Bob.Michels@et.eurofinsus.com
(319)277-2401

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Job ID: 310-315839-1 — Eurofins Cedar Falls

Job Narrative
310-315839-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 9/12/2025 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice.

Metals
Method 6020B: The laboratory control sample (LCS), CRI, ICV, ICSAB for preparation batch 310-467334 and analytical batch 310-468312 recovered outside control limits for the following analytes: silver. 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
Method 2540C_Calcd: The following samples were received outside of holding time: MW-24 (310-315839-1), MW-26 (310-315839-2) and MW-27 (310-315839-3).

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

Sample Summary

Client: Muscatine Power & Water
Job ID: 310-315839-1
Project/Site: Muscatine Power & Water State Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-315839-1	MW-24	Water	09/09/25 08:25	09/12/25 10:00	Iowa
310-315839-2	MW-26	Water	09/09/25 11:05	09/12/25 10:00	Iowa
310-315839-3	MW-27	Water	09/09/25 12:05	09/12/25 10:00	Iowa

Detection Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water State Landfill

Job ID: 310-315839-1

Client Sample ID: MW-24 — Lab Sample ID: 310-315839-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.101		0.00200		mg/L	1		6020B	Total/NA
Boron	0.126		0.100		mg/L	1		6020B	Total/NA
Calcium	72.9		0.500		mg/L	1		6020B	Total/NA
Magnesium	34.6		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0326		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00250		0.00200		mg/L	1		6020B	Total/NA
Strontium	0.0790		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.222		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	38.2		25.0		mg/L	5		D516-16	Total/NA
Total Dissolved Solids	376	H	50.0		mg/L	1		SM 2540C	Total/NA
Chloride	26.5		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: MW-26 — Lab Sample ID: 310-315839-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0589		0.00200		mg/L	1		6020B	Total/NA
Boron	4.81		0.400		mg/L	4		6020B	Total/NA
Calcium	114		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0118		0.0100		mg/L	1		6020B	Total/NA
Magnesium	44.8		0.500		mg/L	1		6020B	Total/NA
Manganese	0.146		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.120		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.187		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	264		50.0		mg/L	10		D516-16	Total/NA
Total Dissolved Solids	672	H	50.0		mg/L	1		SM 2540C	Total/NA
Chloride	17.1		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: MW-27 — Lab Sample ID: 310-315839-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.0623		0.0500		mg/L	1		6020B	Total/NA
Barium	0.0804		0.00200		mg/L	1		6020B	Total/NA
Boron	2.46		0.100		mg/L	1		6020B	Total/NA
Calcium	55.5		0.500		mg/L	1		6020B	Total/NA
Magnesium	24.2		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0138		0.0100		mg/L	1		6020B	Total/NA
Strontium	0.122		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.173		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	55.2		25.0		mg/L	5		D516-16	Total/NA
Total Dissolved Solids	308	H	50.0		mg/L	1		SM 2540C	Total/NA
Chloride	24.4		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water State Landfill

Job ID: 310-315839-1

Client Sample ID: MW-24

Date Collected: 09/09/25 08:25
Date Received: 09/12/25 10:00

Lab Sample ID: 310-315839-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Arsenic	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 15:59	1
Barium	**0.101**		0.00200		mg/L		09/22/25 09:30	09/26/25 15:59	1
Beryllium	<0.00100		0.00100		mg/L		09/22/25 09:30	09/26/25 15:59	1
Boron	**0.126**		0.100		mg/L		09/22/25 09:30	09/26/25 15:59	1
Calcium	**72.9**		0.500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Cobalt	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Copper	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Iron	<0.100		0.100		mg/L		09/22/25 09:30	09/26/25 15:59	1
Lead	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Lithium	<0.0100		0.0100		mg/L		09/22/25 09:30	09/26/25 15:59	1
Magnesium	**34.6**		0.500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Manganese	**0.0326**		0.0100		mg/L		09/22/25 09:30	09/26/25 15:59	1
Molybdenum	**0.00250**		0.00200		mg/L		09/22/25 09:30	09/26/25 15:59	1
Nickel	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Selenium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Strontium	**0.0790**		0.00100		mg/L		09/22/25 09:30	09/26/25 15:59	1
Vanadium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:59	1
Zinc	<0.0200		0.0200		mg/L		09/22/25 09:30	09/26/25 15:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.222**		0.100		mg/L			09/23/25 20:05	1
Sulfate (ASTM D516-16)	**38.2**		25.0		mg/L			09/23/25 13:50	5
Total Dissolved Solids (SM 2540C)	**376**	**H**	50.0		mg/L			09/18/25 14:46	1
Chloride (SM 4500 Cl- E)	**26.5**		2.00		mg/L			09/19/25 01:15	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water State Landfill

Job ID: 310-315839-1

Client Sample ID: MW-26

Date Collected: 09/09/25 11:05
Date Received: 09/12/25 10:00

Lab Sample ID: 310-315839-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Arsenic	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 15:48	1
Barium	**0.0589**		0.00200		mg/L		09/22/25 09:30	09/26/25 15:48	1
Beryllium	<0.00100		0.00100		mg/L		09/22/25 09:30	09/26/25 15:48	1
Boron	**4.81**		0.400		mg/L		09/22/25 09:30	09/30/25 17:12	4
Calcium	**114**		0.500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Cobalt	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Copper	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Iron	<0.100		0.100		mg/L		09/22/25 09:30	09/26/25 15:48	1
Lead	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Lithium	**0.0118**		0.0100		mg/L		09/22/25 09:30	09/26/25 15:48	1
Magnesium	**44.8**		0.500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Manganese	**0.146**		0.0100		mg/L		09/22/25 09:30	09/26/25 15:48	1
Molybdenum	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 15:48	1
Nickel	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Selenium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Strontium	**0.120**		0.00100		mg/L		09/22/25 09:30	09/26/25 15:48	1
Vanadium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:48	1
Zinc	<0.0200		0.0200		mg/L		09/22/25 09:30	09/26/25 15:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.187**		0.100		mg/L			09/23/25 20:16	1
Sulfate (ASTM D516-16)	**264**		50.0		mg/L			09/23/25 13:50	10
Total Dissolved Solids (SM 2540C)	**672**	**H**	50.0		mg/L			09/18/25 14:46	1
Chloride (SM 4500 Cl- E)	**17.1**		2.00		mg/L			09/19/25 01:15	1

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water State Landfill

Job ID: 310-315839-1

Client Sample ID: MW-27

Date Collected: 09/09/25 12:05
Date Received: 09/12/25 10:00

Lab Sample ID: 310-315839-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.0623**		0.0500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Arsenic	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 15:51	1
Barium	**0.0804**		0.00200		mg/L		09/22/25 09:30	09/26/25 15:51	1
Beryllium	<0.00100		0.00100		mg/L		09/22/25 09:30	09/26/25 15:51	1
Boron	**2.46**		0.100		mg/L		09/22/25 09:30	09/26/25 15:51	1
Calcium	**55.5**		0.500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Cobalt	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Copper	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Iron	<0.100		0.100		mg/L		09/22/25 09:30	09/26/25 15:51	1
Lead	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Lithium	<0.0100		0.0100		mg/L		09/22/25 09:30	09/26/25 15:51	1
Magnesium	**24.2**		0.500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Manganese	**0.0138**		0.0100		mg/L		09/22/25 09:30	09/26/25 15:51	1
Molybdenum	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 15:51	1
Nickel	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Selenium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Strontium	**0.122**		0.00100		mg/L		09/22/25 09:30	09/26/25 15:51	1
Vanadium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 15:51	1
Zinc	<0.0200		0.0200		mg/L		09/22/25 09:30	09/26/25 15:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.173**		0.100		mg/L			09/23/25 20:19	1
Sulfate (ASTM D516-16)	**55.2**		25.0		mg/L			09/23/25 14:24	5
Total Dissolved Solids (SM 2540C)	**308**	**H**	50.0		mg/L			09/18/25 14:46	1
Chloride (SM 4500 Cl- E)	**24.4**		2.00		mg/L			09/19/25 01:16	1

Definitions/Glossary

Client: Muscatine Power & Water
Job ID: 310-315839-1
Project/Site: Muscatine Power & Water State Landfill

Qualifiers

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.

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

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-467334/1-A
Matrix: Water
Analysis Batch: 468195

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 467334

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Arsenic	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 14:55	1
Barium	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 14:55	1
Beryllium	<0.00100		0.00100		mg/L		09/22/25 09:30	09/26/25 14:55	1
Boron	<0.100		0.100		mg/L		09/22/25 09:30	09/26/25 14:55	1
Calcium	<0.500		0.500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Cobalt	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Copper	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Iron	<0.100		0.100		mg/L		09/22/25 09:30	09/26/25 14:55	1
Lead	<0.000500		0.000500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Lithium	<0.0100		0.0100		mg/L		09/22/25 09:30	09/26/25 14:55	1
Magnesium	<0.500		0.500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Manganese	<0.0100		0.0100		mg/L		09/22/25 09:30	09/26/25 14:55	1
Molybdenum	<0.00200		0.00200		mg/L		09/22/25 09:30	09/26/25 14:55	1
Nickel	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Selenium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Strontium	<0.00100		0.00100		mg/L		09/22/25 09:30	09/26/25 14:55	1
Vanadium	<0.00500		0.00500		mg/L		09/22/25 09:30	09/26/25 14:55	1
Zinc	<0.0200		0.0200		mg/L		09/22/25 09:30	09/26/25 14:55	1

Lab Sample ID: LCS 310-467334/2-A
Matrix: Water
Analysis Batch: 468195

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 467334

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.200	0.2068		mg/L		103	80 - 120
Arsenic	0.200	0.1999		mg/L		100	80 - 120
Barium	0.100	0.1026		mg/L		103	80 - 120
Beryllium	0.100	0.1001		mg/L		100	80 - 120
Boron	0.200	0.2299		mg/L		115	80 - 120
Calcium	2.00	2.041		mg/L		102	80 - 120
Cobalt	0.100	0.1031		mg/L		103	80 - 120
Copper	0.200	0.2084		mg/L		104	80 - 120
Iron	0.200	0.2310		mg/L		115	80 - 120
Lead	0.200	0.2045		mg/L		102	80 - 120
Lithium	0.200	0.2058		mg/L		103	80 - 120
Magnesium	2.00	2.151		mg/L		108	80 - 120
Manganese	0.100	0.1003		mg/L		100	80 - 120
Molybdenum	0.200	0.2143		mg/L		107	80 - 120
Nickel	0.200	0.2026		mg/L		101	80 - 120
Selenium	0.400	0.3884		mg/L		97	80 - 120
Strontium	0.200	0.1968		mg/L		98	80 - 120
Vanadium	0.100	0.09854		mg/L		99	80 - 120
Zinc	0.200	0.1868		mg/L		93	80 - 120

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

Lab Sample ID: 310-315839-3 DU
Matrix: Water
Analysis Batch: 468195

Client Sample ID: MW-27
Prep Type: Total/NA
Prep Batch: 467334

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	0.0623		0.07155		mg/L		14	20
Arsenic	<0.00200		<0.00200		mg/L		NC	20
Barium	0.0804		0.08166		mg/L		2	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Boron	2.46		2.522		mg/L		3	20
Calcium	55.5		56.40		mg/L		2	20
Cobalt	<0.000500		<0.000500		mg/L		NC	20
Copper	<0.00500		<0.00500		mg/L		NC	20
Iron	<0.100		<0.100		mg/L		NC	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Lithium	<0.0100		<0.0100		mg/L		NC	20
Magnesium	24.2		24.68		mg/L		2	20
Manganese	0.0138		0.01405		mg/L		2	20
Molybdenum	<0.00200		<0.00200		mg/L		NC	20
Nickel	<0.00500		<0.00500		mg/L		NC	20
Selenium	<0.00500		<0.00500		mg/L		NC	20
Strontium	0.122		0.1226		mg/L		0.5	20
Vanadium	<0.00500		<0.00500		mg/L		NC	20
Zinc	<0.0200		<0.0200		mg/L		NC	20

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-467684/5
Matrix: Water
Analysis Batch: 467684

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.100		0.100		mg/L			09/23/25 19:59	1

Lab Sample ID: LCS 310-467684/6
Matrix: Water
Analysis Batch: 467684

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	1.950		mg/L		97	90 - 110

Lab Sample ID: 310-315839-1 MS
Matrix: Water
Analysis Batch: 467684

Client Sample ID: MW-24
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.222		1.00	1.086		mg/L		86	75 - 125

Lab Sample ID: 310-315839-1 MSD
Matrix: Water
Analysis Batch: 467684

Client Sample ID: MW-24
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.222		1.00	1.112		mg/L		89	75 - 125	2	16

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-467663/16
Matrix: Water
Analysis Batch: 467663

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			09/23/25 13:49	1

Lab Sample ID: MB 310-467663/46
Matrix: Water
Analysis Batch: 467663

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			09/23/25 14:02	1

Lab Sample ID: LCS 310-467663/17
Matrix: Water
Analysis Batch: 467663

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	9.398		mg/L		94	85 - 115

Lab Sample ID: LCS 310-467663/47
Matrix: Water
Analysis Batch: 467663

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	9.123		mg/L		91	85 - 115

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

Lab Sample ID: MB 310-467197/1
Matrix: Water
Analysis Batch: 467197

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			09/18/25 14:46	1

Lab Sample ID: LCS 310-467197/2
Matrix: Water
Analysis Batch: 467197

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	958.0		mg/L		96	89 - 110

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-467220/16
Matrix: Water
Analysis Batch: 467220

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.00		2.00		mg/L			09/19/25 00:28	1

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: LCS 310-467220/14
Matrix: Water
Analysis Batch: 467220

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	9.993		mg/L		100	90 - 110		

Metals

Prep Batch: 467334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-1	MW-24	Total/NA	Water	3005A	
310-315839-2	MW-26	Total/NA	Water	3005A	
310-315839-3	MW-27	Total/NA	Water	3005A	
MB 310-467334/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-467334/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-315839-3 DU	MW-27	Total/NA	Water	3005A	

Analysis Batch: 468195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-1	MW-24	Total/NA	Water	6020B	467334
310-315839-2	MW-26	Total/NA	Water	6020B	467334
310-315839-3	MW-27	Total/NA	Water	6020B	467334
MB 310-467334/1-A	Method Blank	Total/NA	Water	6020B	467334
LCS 310-467334/2-A	Lab Control Sample	Total/NA	Water	6020B	467334
310-315839-3 DU	MW-27	Total/NA	Water	6020B	467334

Analysis Batch: 468473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-2	MW-26	Total/NA	Water	6020B	467334

General Chemistry

Analysis Batch: 467197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-1	MW-24	Total/NA	Water	SM 2540C	
310-315839-2	MW-26	Total/NA	Water	SM 2540C	
310-315839-3	MW-27	Total/NA	Water	SM 2540C	
MB 310-467197/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-467197/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 467220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-1	MW-24	Total/NA	Water	SM 4500 Cl- E	
310-315839-2	MW-26	Total/NA	Water	SM 4500 Cl- E	
310-315839-3	MW-27	Total/NA	Water	SM 4500 Cl- E	
MB 310-467220/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-467220/14	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 467663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-1	MW-24	Total/NA	Water	D516-16	
310-315839-2	MW-26	Total/NA	Water	D516-16	
310-315839-3	MW-27	Total/NA	Water	D516-16	
MB 310-467663/16	Method Blank	Total/NA	Water	D516-16	
MB 310-467663/46	Method Blank	Total/NA	Water	D516-16	
LCS 310-467663/17	Lab Control Sample	Total/NA	Water	D516-16	
LCS 310-467663/47	Lab Control Sample	Total/NA	Water	D516-16	

Analysis Batch: 467684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-1	MW-24	Total/NA	Water	4500 F C-2011	

General Chemistry (Continued)

Analysis Batch: 467684 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315839-2	MW-26	Total/NA	Water	4500 F C-2011	
310-315839-3	MW-27	Total/NA	Water	4500 F C-2011	
MB 310-467684/5	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-467684/6	Lab Control Sample	Total/NA	Water	4500 F C-2011	
310-315839-1 MS	MW-24	Total/NA	Water	4500 F C-2011	
310-315839-1 MSD	MW-24	Total/NA	Water	4500 F C-2011	

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-315839-1
Project/Site: Muscatine Power & Water State Landfill

Client Sample ID: MW-24
Lab Sample ID: 310-315839-1
Date Collected: 09/09/25 08:25
Matrix: Water
Date Received: 09/12/25 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			467334	WK2X	EET CF	09/22/25 09:30
Total/NA	Analysis	6020B		1	468195	ZRI4	EET CF	09/26/25 15:59
Total/NA	Analysis	4500 F C-2011		1	467684	T5AC	EET CF	09/23/25 20:05
Total/NA	Analysis	D516-16		5	467663	WZC8	EET CF	09/23/25 13:50
Total/NA	Analysis	SM 2540C		1	467197	HE7K	EET CF	09/18/25 14:46
Total/NA	Analysis	SM 4500 Cl- E		1	467220	ZJX4	EET CF	09/19/25 01:15

Client Sample ID: MW-26
Lab Sample ID: 310-315839-2
Date Collected: 09/09/25 11:05
Matrix: Water
Date Received: 09/12/25 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			467334	WK2X	EET CF	09/22/25 09:30
Total/NA	Analysis	6020B		1	468195	ZRI4	EET CF	09/26/25 15:48
Total/NA	Prep	3005A			467334	WK2X	EET CF	09/22/25 09:30
Total/NA	Analysis	6020B		4	468473	NFT2	EET CF	09/30/25 17:12
Total/NA	Analysis	4500 F C-2011		1	467684	T5AC	EET CF	09/23/25 20:16
Total/NA	Analysis	D516-16		10	467663	WZC8	EET CF	09/23/25 13:50
Total/NA	Analysis	SM 2540C		1	467197	HE7K	EET CF	09/18/25 14:46
Total/NA	Analysis	SM 4500 Cl- E		1	467220	ZJX4	EET CF	09/19/25 01:15

Client Sample ID: MW-27
Lab Sample ID: 310-315839-3
Date Collected: 09/09/25 12:05
Matrix: Water
Date Received: 09/12/25 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			467334	WK2X	EET CF	09/22/25 09:30
Total/NA	Analysis	6020B		1	468195	ZRI4	EET CF	09/26/25 15:51
Total/NA	Analysis	4500 F C-2011		1	467684	T5AC	EET CF	09/23/25 20:19
Total/NA	Analysis	D516-16		5	467663	WZC8	EET CF	09/23/25 14:24
Total/NA	Analysis	SM 2540C		1	467197	HE7K	EET CF	09/18/25 14:46
Total/NA	Analysis	SM 4500 Cl- E		1	467220	ZJX4	EET CF	09/19/25 01:16

Laboratory References:
EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Muscatine Power & Water
Job ID: 310-315839-1
Project/Site: Muscatine Power & Water State Landfill

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

Method Summary

Client: Muscatine Power & Water
Job ID: 310-315839-1
Project/Site: Muscatine Power & Water State Landfill

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

ASTM = ASTM International

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

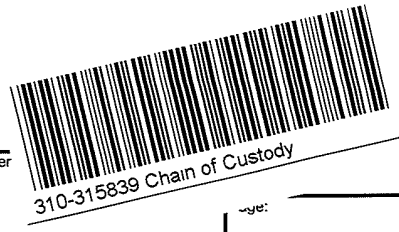
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record



Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob michels@et.eurofinsus com	

Company: Muscatine Power & Water

Address: 1700 Dick Drake Way
City: Muscatine
State, Zip: IA, 52761
Phone:
Email: sbennett@mpw org and neil hoskins@mpw org
Project Name: Muscatine Power & Water State Landfill
Site: Iowa

Due Date Requested:
TAT Requested (days):
PO #: 254338
WO #:
TestAmerica Project #:
Fall 2025 Sampling

Job #:

Analysis Requested

Preservation Codes.

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List, Lithium, TDS	9056A Chloride, Fluoride, Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N		
MW-4B	9/10/25	0945	G	GW			X	X		
MW-5B	9/10/25	1225	G	GW			X	X		
MW-6A	9/10/25	1040	G	GW			X	X		
MW-8	9/9/25	0920	G	GW			X	X		
MW-10	9/8/25	1510	G	GW			X	X		
MW-14A	9/9/25	1355	G	GW			X	X		
MW-15A	9/10/25	0825	G	GW			X	X		
MW-21	9/9/25	1240	G	GW			X	X		
MW-22	9/8/25	1145	G	GW			X	X		
MW-23	9/8/25	1350	G	GW			X	X		
MW-24	9/9/25	0825	G	GW			X	X		

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

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

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

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Sam Bennett	9/11/25 0900	MW			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

10/1/2025

E ⌄ Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob michels@et.eurofinsus com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested:			
City: Muscatine	TAT Requested (days):			
State Zip: IA, 52761				
Phone:	PO #: 254338			
Email: sbennett@mpw.org and neil hoskins@mpw org	WO #:			
Project Name: Muscatine Power & Water State Landfill	TestAmerica Project #:			
Site: Iowa	Event: Fall 2025 Sampling			

Analysis Requested

Preservation Codes.

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List, Lithium, TDS	9056A Chloride, Fluoride, Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N		
MW-26	9/9/25	1105	G	GW			X	X		
MW-27	9/9/25	1205	G	GW			X	X		
DUP-1	9/8/25	1200	G	GW			X	X		
DUP-2	9/9/25	1200	G	GW			X	X		
LEACHATE	9/10/25	1410	G	W			X	X		

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

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

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

Special Instructions/QC Requirements.

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

10/1/2025

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-315839-1

Login Number: 315839
List Number: 1
Creator: Calhoun, Conner M

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.	False	Received 3 samples off the COC
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Sam Bennett
Muscatine Power & Water
1700 Dick Drake Way
PO BOX 899
Muscatine, Iowa 52761

Generated 10/1/2025 10:15:37 AM

JOB DESCRIPTION

Muscatine Power & Water Surface Water

JOB NUMBER

310-315543-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

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



Generated
10/1/2025 10:15:37 AM

Authorized for release by
Bob Michels, Project Manager I
Bob.Michels@et.eurofinsus.com
(319)277-2401

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Job ID: 310-315543-1 — Eurofins Cedar Falls

Job Narrative
310-315543-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 9/12/2025 8:25 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 1.7°C.

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.

Sample Summary

Client: Muscatine Power & Water
Job ID: 310-315543-1
Project/Site: Muscatine Power & Water Surface Water

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-315543-1	SW-24	Stormwater	09/10/25 13:00	09/12/25 08:25	Iowa
310-315543-2	SW-25	Stormwater	09/10/25 13:25	09/12/25 08:25	Iowa
310-315543-3	SW-26	Stormwater	09/10/25 13:45	09/12/25 08:25	Iowa

Detection Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Surface Water

Job ID: 310-315543-1

Client Sample ID: SW-24 — Lab Sample ID: 310-315543-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0244		0.00200		mg/L	1		6020B	Total/NA
Boron	8.09		0.400		mg/L	4		6020B	Total/NA
Calcium	227		0.500		mg/L	1		6020B	Total/NA
Magnesium	95.8		2.00		mg/L	4		6020B	Total/NA
Strontium	0.368		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.187	F1	0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	594		250		mg/L	50		D516-16	Total/NA
Total Dissolved Solids	1330		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	16.3		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: SW-25 — Lab Sample ID: 310-315543-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0579		0.00200		mg/L	1		6020B	Total/NA
Boron	5.25		0.400		mg/L	4		6020B	Total/NA
Calcium	159		0.500		mg/L	1		6020B	Total/NA
Magnesium	53.3		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0219		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00772		0.00200		mg/L	1		6020B	Total/NA
Strontium	0.223		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.231		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	344		125		mg/L	25		D516-16	Total/NA
Total Dissolved Solids	964		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	21.0		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: SW-26 — Lab Sample ID: 310-315543-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0489		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0865		0.00200		mg/L	1		6020B	Total/NA
Boron	5.19		0.400		mg/L	4		6020B	Total/NA
Calcium	69.3		0.500		mg/L	1		6020B	Total/NA
Iron	0.191		0.100		mg/L	1		6020B	Total/NA
Lithium	0.0155		0.0100		mg/L	1		6020B	Total/NA
Magnesium	29.1		0.500		mg/L	1		6020B	Total/NA
Manganese	0.225		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.0427		0.00200		mg/L	1		6020B	Total/NA
Strontium	0.387		0.00100		mg/L	1		6020B	Total/NA
Fluoride	0.357		0.100		mg/L	1		4500 F C-2011	Total/NA
Sulfate	452		125		mg/L	25		D516-16	Total/NA
Total Dissolved Solids	862		50.0		mg/L	1		SM 2540C	Total/NA
Chloride	24.8		2.00		mg/L	1		SM 4500 Cl- E	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Muscatine Power & Water
Job ID: 310-315543-1
Project/Site: Muscatine Power & Water Surface Water

Client Sample ID: SW-24
Lab Sample ID: 310-315543-1
Date Collected: 09/10/25 13:00
Matrix: Stormwater
Date Received: 09/12/25 08:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:01	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:01	1
Arsenic	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:01	1
Barium	**0.0244**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:01	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:01	1
Boron	**8.09**		0.400		mg/L		09/17/25 09:00	09/26/25 14:50	4
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:01	1
Calcium	**227**		0.500		mg/L		09/17/25 09:00	09/25/25 17:01	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:01	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:01	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:01	1
Iron	<0.100		0.100		mg/L		09/17/25 09:00	09/25/25 17:01	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:01	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:01	1
Magnesium	**95.8**		2.00		mg/L		09/17/25 09:00	09/26/25 14:50	4
Manganese	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:01	1
Molybdenum	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:01	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:01	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:01	1
Strontium	**0.368**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:01	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:01	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:01	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 19:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.187**	**F1**	0.100		mg/L			09/17/25 13:48	1
Sulfate (ASTM D516-16)	**594**		250		mg/L			09/18/25 15:06	50
Total Dissolved Solids (SM 2540C)	**1330**		50.0		mg/L			09/16/25 13:34	1
Chloride (SM 4500 Cl- E)	**16.3**		2.00		mg/L			09/18/25 23:18	1

Client Sample Results

Client: Muscatine Power & Water
Job ID: 310-315543-1
Project/Site: Muscatine Power & Water Surface Water

Client Sample ID: SW-25
Date Collected: 09/10/25 13:25
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315543-2
Matrix: Stormwater

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:21	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:21	1
Arsenic	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:21	1
Barium	**0.0579**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:21	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:21	1
Boron	**5.25**		0.400		mg/L		09/17/25 09:00	09/26/25 15:05	4
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:21	1
Calcium	**159**		0.500		mg/L		09/17/25 09:00	09/25/25 17:21	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:21	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:21	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:21	1
Iron	<0.100		0.100		mg/L		09/17/25 09:00	09/25/25 17:21	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:21	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 17:21	1
Magnesium	**53.3**		0.500		mg/L		09/17/25 09:00	09/25/25 17:21	1
Manganese	**0.0219**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:21	1
Molybdenum	**0.00772**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:21	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:21	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:21	1
Strontium	**0.223**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:21	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:21	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:21	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 19:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.231**		0.100		mg/L			09/17/25 14:04	1
Sulfate (ASTM D516-16)	**344**		125		mg/L			09/18/25 15:06	25
Total Dissolved Solids (SM 2540C)	**964**		50.0		mg/L			09/16/25 13:34	1
Chloride (SM 4500 Cl- E)	**21.0**		2.00		mg/L			09/18/25 23:18	1

Client Sample Results

Client: Muscatine Power & Water
Job ID: 310-315543-1
Project/Site: Muscatine Power & Water Surface Water

Client Sample ID: SW-26
Date Collected: 09/10/25 13:45
Date Received: 09/12/25 08:25

Lab Sample ID: 310-315543-3
Matrix: Stormwater

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 17:04	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 17:04	1
Arsenic	**0.0489**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:04	1
Barium	**0.0865**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:04	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:04	1
Boron	**5.19**		0.400		mg/L		09/17/25 09:00	09/26/25 14:53	4
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 17:04	1
Calcium	**69.3**		0.500		mg/L		09/17/25 09:00	09/25/25 17:04	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:04	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:04	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:04	1
Iron	**0.191**		0.100		mg/L		09/17/25 09:00	09/25/25 17:04	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 17:04	1
Lithium	**0.0155**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:04	1
Magnesium	**29.1**		0.500		mg/L		09/17/25 09:00	09/25/25 17:04	1
Manganese	**0.225**		0.0100		mg/L		09/17/25 09:00	09/25/25 17:04	1
Molybdenum	**0.0427**		0.00200		mg/L		09/17/25 09:00	09/25/25 17:04	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:04	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:04	1
Strontium	**0.387**		0.00100		mg/L		09/17/25 09:00	09/25/25 17:04	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 17:04	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 17:04	1
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 19:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride (SM 4500 F C-2011)	**0.357**		0.100		mg/L			09/17/25 14:07	1
Sulfate (ASTM D516-16)	**452**		125		mg/L			09/18/25 15:07	25
Total Dissolved Solids (SM 2540C)	**862**		50.0		mg/L			09/15/25 18:40	1
Chloride (SM 4500 Cl- E)	**24.8**		2.00		mg/L			09/19/25 01:07	1

Definitions/Glossary

Client: Muscatine Power & Water
Job ID: 310-315543-1
Project/Site: Muscatine Power & Water Surface Water

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

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

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-466891/1-A
Matrix: Water
Analysis Batch: 468018

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 466891

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0500		0.0500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Antimony	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 16:44	1
Arsenic	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 16:44	1
Barium	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 16:44	1
Beryllium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Boron	<0.100		0.100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Cadmium	<0.000200		0.000200		mg/L		09/17/25 09:00	09/25/25 16:44	1
Calcium	<0.500		0.500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Chromium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Cobalt	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Copper	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Iron	<0.100		0.100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Lead	<0.000500		0.000500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Lithium	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Magnesium	<0.500		0.500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Manganese	<0.0100		0.0100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Molybdenum	<0.00200		0.00200		mg/L		09/17/25 09:00	09/25/25 16:44	1
Nickel	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Selenium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 16:44	1
Strontium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Thallium	<0.00100		0.00100		mg/L		09/17/25 09:00	09/25/25 16:44	1
Vanadium	<0.00500		0.00500		mg/L		09/17/25 09:00	09/25/25 16:44	1

Lab Sample ID: LCS 310-466891/2-A
Matrix: Water
Analysis Batch: 468018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 466891

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.200	0.1918		mg/L		96	80 - 120
Antimony	0.200	0.2112		mg/L		106	80 - 120
Arsenic	0.200	0.1909		mg/L		95	80 - 120
Barium	0.100	0.09769		mg/L		98	80 - 120
Beryllium	0.100	0.1028		mg/L		103	80 - 120
Boron	0.200	0.2335		mg/L		117	80 - 120
Cadmium	0.100	0.09928		mg/L		99	80 - 120
Calcium	2.00	1.928		mg/L		96	80 - 120
Chromium	0.100	0.1025		mg/L		102	80 - 120
Cobalt	0.100	0.09908		mg/L		99	80 - 120
Copper	0.200	0.2079		mg/L		104	80 - 120
Iron	0.200	0.1929		mg/L		96	80 - 120
Lead	0.200	0.2025		mg/L		101	80 - 120
Lithium	0.200	0.2066		mg/L		103	80 - 120
Magnesium	2.00	1.880		mg/L		94	80 - 120
Manganese	0.100	0.08828		mg/L		88	80 - 120
Molybdenum	0.200	0.2191		mg/L		110	80 - 120
Nickel	0.200	0.2109		mg/L		105	80 - 120
Selenium	0.400	0.3922		mg/L		98	80 - 120
Strontium	0.200	0.1855		mg/L		93	80 - 120
Thallium	0.100	0.1047		mg/L		105	80 - 120

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

Lab Sample ID: LCS 310-466891/2-A
Matrix: Water
Analysis Batch: 468018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 466891

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vanadium	0.100	0.1015		mg/L		101	80 - 120

Lab Sample ID: MB 310-468161/1-A
Matrix: Water
Analysis Batch: 468473

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 468161

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<0.0200		0.0200		mg/L		09/29/25 09:00	09/30/25 18:02	1

Lab Sample ID: LCS 310-468161/2-A
Matrix: Water
Analysis Batch: 468473

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 468161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Zinc	0.200	0.1969		mg/L		98	80 - 120

Method: 4500 F C-2011 - Fluoride (Ion-selective Electrode)

Lab Sample ID: MB 310-467076/33
Matrix: Water
Analysis Batch: 467076

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.100		0.100		mg/L			09/17/25 13:41	1

Lab Sample ID: LCS 310-467076/34
Matrix: Water
Analysis Batch: 467076

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.00	2.042		mg/L		102	90 - 110

Lab Sample ID: 310-315543-1 MS
Matrix: Stormwater
Analysis Batch: 467076

Client Sample ID: SW-24
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.187	F1	1.00	0.6775	F1	mg/L		49	75 - 125

Lab Sample ID: 310-315543-1 MSD
Matrix: Stormwater
Analysis Batch: 467076

Client Sample ID: SW-24
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.187	F1	1.00	0.6637	F1	mg/L		48	75 - 125	2	16

Method: D516-16 - Sulfate

Lab Sample ID: MB 310-467203/16
Matrix: Water
Analysis Batch: 467203

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			09/18/25 14:30	1

Lab Sample ID: MB 310-467203/46
Matrix: Water
Analysis Batch: 467203

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.00		5.00		mg/L			09/18/25 14:44	1

Lab Sample ID: LCS 310-467203/17
Matrix: Water
Analysis Batch: 467203

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	9.167		mg/L		92	85 - 115

Lab Sample ID: LCS 310-467203/47
Matrix: Water
Analysis Batch: 467203

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	8.527		mg/L		85	85 - 115

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

Lab Sample ID: MB 310-466769/1
Matrix: Water
Analysis Batch: 466769

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			09/15/25 18:40	1

Lab Sample ID: LCS 310-466769/2
Matrix: Water
Analysis Batch: 466769

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	89 - 110

Lab Sample ID: MB 310-466849/1
Matrix: Water
Analysis Batch: 466849

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			09/16/25 13:34	1

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

Lab Sample ID: LCS 310-466849/2
Matrix: Water
Analysis Batch: 466849

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	1014		mg/L		101	89 - 110		

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 310-467219/16
Matrix: Water
Analysis Batch: 467219

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.00		2.00		mg/L			09/18/25 23:07	1

Lab Sample ID: LCS 310-467219/14
Matrix: Water
Analysis Batch: 467219

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	10.79		mg/L		108	90 - 110		

Lab Sample ID: MB 310-467220/16
Matrix: Water
Analysis Batch: 467220

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.00		2.00		mg/L			09/19/25 00:28	1

Lab Sample ID: LCS 310-467220/14
Matrix: Water
Analysis Batch: 467220

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	9.993		mg/L		100	90 - 110		

Lab Sample ID: 310-315543-3 MS
Matrix: Stormwater
Analysis Batch: 467220

Client Sample ID: SW-26
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	24.8		10.0	32.47		mg/L		77	26 - 120		

Lab Sample ID: 310-315543-3 MSD
Matrix: Stormwater
Analysis Batch: 467220

Client Sample ID: SW-26
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	24.8		10.0	32.24		mg/L		75	26 - 120	1	10

QC Association Summary

Client: Muscatine Power & Water
Job ID: 310-315543-1
Project/Site: Muscatine Power & Water Surface Water

Metals

Prep Batch: 466891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315543-1	SW-24	Total/NA	Stormwater	3005A	
310-315543-2	SW-25	Total/NA	Stormwater	3005A	
310-315543-3	SW-26	Total/NA	Stormwater	3005A	
MB 310-466891/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-466891/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 468018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315543-1	SW-24	Total/NA	Stormwater	6020B	466891
310-315543-2	SW-25	Total/NA	Stormwater	6020B	466891
310-315543-3	SW-26	Total/NA	Stormwater	6020B	466891
MB 310-466891/1-A	Method Blank	Total/NA	Water	6020B	466891
LCS 310-466891/2-A	Lab Control Sample	Total/NA	Water	6020B	466891

Analysis Batch: 468123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315543-1	SW-24	Total/NA	Stormwater	6020B	466891
310-315543-2	SW-25	Total/NA	Stormwater	6020B	466891
310-315543-3	SW-26	Total/NA	Stormwater	6020B	466891

Prep Batch: 468161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315543-1	SW-24	Total/NA	Stormwater	3005A	
310-315543-2	SW-25	Total/NA	Stormwater	3005A	
310-315543-3	SW-26	Total/NA	Stormwater	3005A	
MB 310-468161/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-468161/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 468473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315543-1	SW-24	Total/NA	Stormwater	6020B	468161
310-315543-2	SW-25	Total/NA	Stormwater	6020B	468161
310-315543-3	SW-26	Total/NA	Stormwater	6020B	468161
MB 310-468161/1-A	Method Blank	Total/NA	Water	6020B	468161
LCS 310-468161/2-A	Lab Control Sample	Total/NA	Water	6020B	468161

General Chemistry

Analysis Batch: 466769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315543-3	SW-26	Total/NA	Stormwater	SM 2540C	
MB 310-466769/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-466769/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 466849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315543-1	SW-24	Total/NA	Stormwater	SM 2540C	
310-315543-2	SW-25	Total/NA	Stormwater	SM 2540C	
MB 310-466849/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-466849/2	Lab Control Sample	Total/NA	Water	SM 2540C	

QC Association Summary

Client: Muscatine Power & Water
Project/Site: Muscatine Power & Water Surface Water

Job ID: 310-315543-1

General Chemistry

Analysis Batch: 467076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315543-1	SW-24	Total/NA	Stormwater	4500 F C-2011	
310-315543-2	SW-25	Total/NA	Stormwater	4500 F C-2011	
310-315543-3	SW-26	Total/NA	Stormwater	4500 F C-2011	
MB 310-467076/33	Method Blank	Total/NA	Water	4500 F C-2011	
LCS 310-467076/34	Lab Control Sample	Total/NA	Water	4500 F C-2011	
310-315543-1 MS	SW-24	Total/NA	Stormwater	4500 F C-2011	
310-315543-1 MSD	SW-24	Total/NA	Stormwater	4500 F C-2011	

Analysis Batch: 467203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315543-1	SW-24	Total/NA	Stormwater	D516-16	
310-315543-2	SW-25	Total/NA	Stormwater	D516-16	
310-315543-3	SW-26	Total/NA	Stormwater	D516-16	
MB 310-467203/16	Method Blank	Total/NA	Water	D516-16	
MB 310-467203/46	Method Blank	Total/NA	Water	D516-16	
LCS 310-467203/17	Lab Control Sample	Total/NA	Water	D516-16	
LCS 310-467203/47	Lab Control Sample	Total/NA	Water	D516-16	

Analysis Batch: 467219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315543-1	SW-24	Total/NA	Stormwater	SM 4500 Cl- E	
310-315543-2	SW-25	Total/NA	Stormwater	SM 4500 Cl- E	
MB 310-467219/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-467219/14	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 467220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-315543-3	SW-26	Total/NA	Stormwater	SM 4500 Cl- E	
MB 310-467220/16	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 310-467220/14	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
310-315543-3 MS	SW-26	Total/NA	Stormwater	SM 4500 Cl- E	
310-315543-3 MSD	SW-26	Total/NA	Stormwater	SM 4500 Cl- E	

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-315543-1
Project/Site: Muscatine Power & Water Surface Water

Client Sample ID: SW-24
Lab Sample ID: 310-315543-1
Date Collected: 09/10/25 13:00
Matrix: Stormwater
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:01
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		4	468123	NFT2	EET CF	09/26/25 14:50
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 19:06
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 13:48
Total/NA	Analysis	D516-16		50	467203	WZC8	EET CF	09/18/25 15:06
Total/NA	Analysis	SM 2540C		1	466849	HE7K	EET CF	09/16/25 13:34
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:18

Client Sample ID: SW-25
Lab Sample ID: 310-315543-2
Date Collected: 09/10/25 13:25
Matrix: Stormwater
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:21
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		4	468123	NFT2	EET CF	09/26/25 15:05
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 19:08
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 14:04
Total/NA	Analysis	D516-16		25	467203	WZC8	EET CF	09/18/25 15:06
Total/NA	Analysis	SM 2540C		1	466849	HE7K	EET CF	09/16/25 13:34
Total/NA	Analysis	SM 4500 Cl- E		1	467219	ZJX4	EET CF	09/18/25 23:18

Client Sample ID: SW-26
Lab Sample ID: 310-315543-3
Date Collected: 09/10/25 13:45
Matrix: Stormwater
Date Received: 09/12/25 08:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		1	468018	NFT2	EET CF	09/25/25 17:04
Total/NA	Prep	3005A			466891	WK2X	EET CF	09/17/25 09:00
Total/NA	Analysis	6020B		4	468123	NFT2	EET CF	09/26/25 14:53
Total/NA	Prep	3005A			468161	QTZ5	EET CF	09/29/25 09:00
Total/NA	Analysis	6020B		1	468473	NFT2	EET CF	09/30/25 19:17
Total/NA	Analysis	4500 F C-2011		1	467076	WZC8	EET CF	09/17/25 14:07
Total/NA	Analysis	D516-16		25	467203	WZC8	EET CF	09/18/25 15:07
Total/NA	Analysis	SM 2540C		1	466769	ENB7	EET CF	09/15/25 18:40
Total/NA	Analysis	SM 4500 Cl- E		1	467220	ZJX4	EET CF	09/19/25 01:07

Lab Chronicle

Client: Muscatine Power & Water
Job ID: 310-315543-1
Project/Site: Muscatine Power & Water Surface Water

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Muscatine Power & Water
Job ID: 310-315543-1
Project/Site: Muscatine Power & Water Surface Water

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	Stormwater	Lithium

Method Summary

Client: Muscatine Power & Water
Job ID: 310-315543-1
Project/Site: Muscatine Power & Water Surface Water

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET CF
4500 F C-2011	Fluoride (Ion-selective Electrode)	SM	EET CF
D516-16	Sulfate	ASTM	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 Cl- E	Chloride, Total	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

ASTM = ASTM International

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

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

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-315543 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: Muscatine Power + Water

City/State: CITY Muscatine STATE IA

Project:

Receipt Information

Date/Time Received: DATE 09/12/25 TIME 0825

Received By: ES

Delivery Type. ☑ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other.

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID: 9-12-25 N

Multiple Coolers? ☑ Yes ☑ No *If yes* Cooler # ~~4~~ of ~~4~~

Cooler Custody Seals Present? ☑ Yes ☐ No *If yes* Cooler custody seals intact? ☑ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☑ No *If yes* Which VOA samples are in cooler? ↓

Temperature Record

Coolant ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other. ☐ NONE

Thermometer ID: R 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): 1.7 Corrected Temp (°C): 1.7

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C).		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes* Is there evidence that the chilling process began? ☐ Yes ☐ 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?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone (319) 277-2401 Fax (319) 277-2425

Chain of Custody Record

Client Information	Sampler: Sam Bennett	Lab PM: Michels, Bob	Carrier Tracking No(s):	COC No:
Client Contact: Sam Bennett MP&W	Phone: 563-262-3583	E-Mail: bob.michels@et.eurofinsus.com		Page:
Company: Muscatine Power & Water				Job #:
Address: 1700 Dick Drake Way	Due Date Requested			
City: Muscatine	TAT Requested (days)			
State, Zip: IA, 52761				
Phone:	PO #: 254338			
Email: sbennett@mpw.org	WO #:			
Project Name: Muscatine Power & Water State Parameters	TestAmerica Project #: 310-290523			
Site: Iowa	Event: Fall 2024 Sampling			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A State Metals List, Lithium, TDS	9056A Chloride, Fluoride, Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:				D	N		
SW-22	Dry		G	SW			X	X		
SW-23	Inaccessible/Dry?		G	SW			X	X		
SW-24	9/10/25	1300	G	SW			X	X		
SW-25	9/10/25	1325	G	SW			X	X		
SW-26	9/10/25	1345	G	SW			X	X		

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

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

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

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Sam Bennett	9/11/25 0900	MPW	ES	09/12/25 0825	EET
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Login Sample Receipt Checklist

Client: Muscatine Power & Water

Job Number: 310-315543-1

Login Number: 315543
List Number: 1
Creator: Schaufenbuel, Erin

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	

Appendix C

Statistical Analysis

GROUNDWATER STATS CONSULTING

December 17, 2025

GHD
Attn: Mr. Michael Alowitz
11228 Aurora Avenue
Des Moines Iowa 50322-7904

Re: Muscatine Power & Water – State: April & September 2025 Analyses

Dear Mr. Alowitz,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the statistical analyses of the groundwater data for the April and September 2025 sample events for Muscatine Power & Water for the State groundwater program regulated by the Iowa Department of Natural Resources.

The monitoring well network at Muscatine Power & Water consists of the following:

- **Upgradient wells:** MW-08, MW-10, MW-22 and MW-23
- **Downgradient wells:** MW-4B, MW-5B, MW-6A, MW-14A, MW-15A, MW-21, MW-24, MW-26, and MW-27

Surface water locations include the following:

- **Upstream well:** SW-22
- **Downstream wells:** SW-23, SW-24, SW-25, and SW-26

Sampling began for the Iowa State groundwater monitoring program in October 2016 and at least 8 sample events have been completed at all wells and surface water locations; therefore, all wells and surface water locations have sufficient samples to be evaluated with interwell statistical limits.

Note that upgradient well SW-22 and downgradient well SW-23 were not sampled during the September 2025 event; therefore, separate analyses were performed for all surface

water locations through April 2025 and for SW-24, SW-25, and SW-26 through September 2025. Since upstream well SW-22 is located upgradient of the facility representing water quality conditions independent of the facility, all available data from this location was used to construct interwell statistical limits for each sample event.

Interwell prediction limits were constructed from upgradient wells and upstream locations for the following constituents: aluminum, arsenic, barium, beryllium, boron, calcium, chloride, cobalt, copper, fluoride, iron, lead, magnesium, manganese, molybdenum, nickel, selenium, strontium, sulfate, vanadium, and zinc. Figures for monitoring wells and surface water locations are provided in separate sections of this report.

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed by Andrew Collins, Project Manager of Groundwater Stats Consulting.

Time series plots for constituents at all wells are provided for the purpose of visualizing data at these wells and surface water locations (Figure A). Additionally, a separate section of box plots is included for all constituents at upgradient and downgradient wells as well as surface water locations (Figure B). The time series plots were used to initially screen for suspected outliers and trends primarily in upgradient wells for the purposes of maintaining interwell statistical limits that were conservative from a regulatory perspective. The box plots provide visual representation of variation within individual wells and between all wells, and among surface water locations. Values in background which have been flagged as outliers may be seen in a lighter font and as a disconnected symbol on the graphs. A summary of flagged outliers follows this report (Figure C).

When there are no detections present in downgradient wells for a given constituent, statistical analyses are not required. Summaries of downgradient and downstream well/constituent pairs with 100% non-detects follows this letter.

Summary of Initial Background Screening - Conducted in December 2018

Background data were originally screened in December 2018 as described below for all parameters at each upgradient location.

Outlier Screening

Time series plots were used to initially screen for suspected outliers, trends, and seasonal patterns. Outliers and trends in background data result in increased variation and statistical limits that are not conservative from a regulatory perspective, if not addressed.

Box plots were included for all wells and surface water locations to provide visual representation of variation within individual wells and between wells. Upgradient data were formally tested using Tukey's box plot method. No values were identified as outliers by Tukey's test. However, due to the transformation to data that were applied in some cases, the resulting upper limits were significantly higher than the reported measurements. Therefore, a few values were flagged as outliers to construct limits that are lower and more conservative from a regulatory perspective. When outliers are confirmed, these values are flagged in the computer database with "o" in order to deselect prior to construction of statistical limits. A summary of those values follows this letter as mentioned above (Figure C).

Seasonality

No seasonal patterns were visually apparent in the limited amount of data; therefore, no deseasonalizing adjustments were made to the data. When seasonal patterns are observed, data may be optionally deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

Trend Tests

No suspected trending data were observed during the screening; therefore, no formal tests were conducted due to limited data. For meaningful results, a minimum of 6 values is needed. When future background updates are conducted, the Sen's Slope/Mann Kendall trend test will be used to evaluate all proposed background data to identify statistically significant increasing or decreasing trends. In the absence of suspected contamination, significant trending data are typically not included as part of the background data used for construction of statistical limits. This step serves to eliminate the trend and, thus, reduce variation in background. When statistically significant trends are present, earlier data are evaluated to determine whether earlier concentration levels are significantly different than current reported concentrations and will be deselected as necessary. When the historical records of data are truncated for the reasons above, a summary report will be provided to show the date ranges used in construction of the statistical limits.

Natural systems continuously evolve due to physical changes made to the environment and unrelated to the site. To accommodate these types of changes, background data are updated during each analysis to include all upgradient well data for construction of interwell prediction limits after careful screening for new outliers. Improved sample size in background data sets results in statistical limits that provide better representation of

the true background population. Data are evaluated to determine whether newer measurements are representative of earlier measurements in which case they may be incorporated into background.

Summary of Background Update – September 2025

Outlier Analysis

Visual screening with time series graphs and Tukey's outlier test were used to identify suspected outliers, or extreme values that would result in limits that are not representative of the current pooled upgradient well data population (Figure C). Suspected outliers at upgradient wells for all parameters were formally tested using Tukey's box plot method and, when identified, flagged in the computer database with "o" and deselected prior to construction of statistical limits. When the most recent values are identified as an outlier, values are often not flagged in the database as the measurements may represent a possible trend. If future values do not remain at similar concentrations, these values will be flagged as outliers and deselected.

Tukey's outlier test on pooled upgradient well data identified values for aluminum, calcium, and molybdenum for monitoring wells, and arsenic, boron, calcium, lead, magnesium, sulfate, and vanadium for surface water locations. Previously flagged values were confirmed with Tukey's test and visual screening (Figure C). Among values identified by Tukey's test, the highest value for calcium in MW-08 was flagged during this update. Any other values identified by Tukey's, but not flagged in the database, appeared representative of remaining concentrations among pooled upgradient data. When any values are flagged in the database as outliers, the measurements are plotted in a disconnected and lighter symbol on the time series graph. The accompanying data pages display the flagged value in a lighter font as well.

Seasonality

No obvious seasonal patterns were observed on the time series plots for any of the detected data; therefore, no deseasonalizing adjustments were made to the data. When seasonal patterns are observed, data may be deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

Trend Test Evaluation

While trends can be identified by visual inspection, a quantification of the trend and its statistical significance is needed. The Sen's Slope/Mann Kendall trend test was used to evaluate all data at each upgradient well to identify statistically significant increasing or decreasing trends (Figure D). In the absence of suspected contamination, significant trending data are typically not included as part of the background data used for construction of prediction limits. This step serves to eliminate the trend and, thus, reduce variation in background. When any records of data are truncated for the reasons above, a summary report will be provided to show the date ranges used in construction of the statistical limits. The following statistically significant trends were identified at upgradient wells:

Increasing

- Arsenic: MW-22
- Barium: MW-10 and MW-22
- Chloride: MW-23
- Cobalt: MW-08 and MW-10
- Iron: MW-08
- Sulfate: MW-22

Decreasing

- Chloride: MW-22
- Strontium: MW-08
- Sulfate: MW-08 and MW-23

While identifying these upgradient trends is useful for understanding and characterization of upgradient background groundwater quality, truncation of the records to remove the trend may be appropriate when the trend would result in statistical limits that are not representative of upgradient groundwater quality and/or not able to detect downgradient changes that result from the facility. Deselecting data at upgradient wells is done with caution as similar observations may be observed at one or more downgradient wells depending on transport times. For example, concentrations early in the record for strontium and sulfate at MW-08 are similar to more recent measurements at downgradient wells for these constituents. Therefore, no truncation is recommended at this time.

Although, statistically significant trends were identified, no adjustments to the data set were required for the statistically significant trends identified, as all observations within these wells fall within the range of the other pooled upgradient well concentrations.

Truncating the earlier measurements from these individual records to reduce the influence of the trend would not impact resulting interwell prediction limits using pooled upgradient well data. Therefore, no adjustments were required for these well/constituent pairs at this time, and all data from upgradient wells were used to construct interwell prediction limits for all parameters.

Evaluation of Compliance Samples – April and September 2025

Monitoring Wells

Interwell prediction limits are used to construct background limits for comparison of compliance well data at this site. In previous analyses, a handful of possible outliers were identified and formally tested using Tukey's box plot method. When outliers were confirmed, these values were flagged in the computer database with "o" in order to deselect prior to construction of statistical limits. Flagged values appear as a disconnected, lighter symbol on the time series graphs. Time series plots were reviewed for any newly suspected outliers in upgradient wells during this analysis. No additional suspected outliers were found.

The time series plots were also used to determine whether upgradient well data are stable, or whether increasing or decreasing trending patterns are observed. It was noted that concentrations of arsenic and iron in upgradient well MW-10 have slightly increased compared to earlier reported measurements in this well, indicating that groundwater quality may be changing over time. It was also noted that upgradient well MW-23 exhibits fluctuation for reported concentrations of aluminum and manganese, which is assumed to represent variation in groundwater quality upgradient of the facility.

<u>Interwell Prediction Limits – Monitoring Wells</u>

Interwell prediction limits were constructed as recommended in the EPA Unified Guidance (2009), based on a 1-of-2 resample plan using pooled upgradient well data for all parameters through April and September 2025 (Figures E and F, respectively). In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of a resample to determine whether the initial exceedance is confirmed, in which case a statistically significant increase (SSI) is identified. If the resample falls within the statistical limit, the initial exceedance is considered to be a false positive result and, therefore, no further action is necessary. If no resample is collected, the exceedance is considered to be confirmed.

Parametric interwell prediction limits were constructed when background data followed a normal or transformed-normal distribution. Non-parametric interwell prediction limits are provided for data sets with greater than 50% non-detects, and for data sets which do not follow a normal or transformed-normal distribution. Downgradient measurements were compared to these background limits and significant exceedances were identified for the following well/constituent pairs:

April 2025 Sample Event:

- Boron: MW-14A, MW-15A, MW-21, and MW-26
- Calcium: MW-14A
- Chloride: MW-5B
- Magnesium: MW-14A and MW-15A
- Molybdenum: MW-15A
- Selenium: MW-21
- Sulfate: MW-14A
- Vanadium: MW-27

September 2025 Sample Event:

- Boron: MW-14A, MW-15A, MW-21, MW-26, and MW-27
- Calcium: MW-14A
- Chloride: MW-5B
- Magnesium: MW-14A
- Nickel: MW-21
- Sulfate: MW-14A

Further research would be required to determine whether these exceedances reflect natural variation in groundwater quality or are a result of practices at the facility. That study is beyond the scope of this analysis provided by Groundwater Stats Consulting. Prediction limits results and summary tables of well/constituent pairs found to exceed their respective limits follow this letter.

Trend Tests

The Sen's Slope/Mann Kendall trend test was performed at the 99% confidence level on exceedances mentioned above to determine whether concentrations are increasing, decreasing or stabilizing over time through September 2025 (Figure G). Upgradient wells were included to establish whether similar patterns may be seen upgradient of the facility. A summary of the trend tests follows this report and statistically significant trends were identified for the following well/constituent pairs:

Increasing

- Chloride: MW-23 (upgradient)
- Magnesium: MW-14A
- Sulfate: MW-22 (upgradient)

Decreasing

- Boron: MW-15A
- Chloride: MW-22 (upgradient) and MW-5B
- Magnesium: MW-15A
- Selenium: MW-21
- Sulfate: MW-08 and MW-23 (both upgradient)

Surface Water Locations

Interwell prediction limits are used to construct background limits for comparison of surface water data at this site.

As mentioned above, Tukey's outlier test and time series plots were reviewed for any suspected outliers and trending data in the upstream location, and no additional values were flagged as outliers during this analysis. A high value for copper remains flagged from previous analyses at upstream well SW-22 in order to construct statistical limits that are capable of detecting changes in groundwater quality since it was an order of magnitude higher than any other observations upgradient of the facility for this constituent. A list of flagged outliers follows this report.

Interwell Prediction Limits – Surface Water Locations

Interwell prediction limits were constructed as recommended in the EPA Unified Guidance (2009), based on a 1-of-2 resample plan using data from upstream well SW-22 through April 2025, to compare the April 2025 sample event for all downstream locations on all parameters, and the September 2025 sample event for downstream locations SW-24, SW-25, and SW-26 (Figures H and I, respectively). In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of an additional sample to determine whether the initial exceedance is confirmed, in which case a statistically significant increase (SSI) is identified. If the resample falls within the statistical limit, the initial exceedance is considered to be a false positive result and, therefore, no further action is necessary. If no resample is collected, it is considered a confirmed exceedance.

Parametric interwell prediction limits were constructed when background data followed a normal or transformed-normal distribution. Non-parametric interwell prediction limits are provided for data sets with greater than 50% non-detects, and for data sets which do not follow a normal or transformed-normal distribution. Summary tables of these prediction limits results follow this letter. As mentioned above, downstream wells containing 100% non-detects did not require analysis, which includes all downstream wells for beryllium and nickel. Downgradient surface water measurements were compared to these background limits and exceedances were noted for the following well/constituent pairs:

April 2025 Sample Event:

- Boron: SW-24
- Cobalt: SW-26
- Copper: SW-26
- Lead: SW-26
- Magnesium: SW-24
- Molybdenum: SW-26
- Selenium: SW-26
- Strontium: SW-26

September 2025 Sample Event:

- Arsenic: SW-26
- Boron: SW-24
- Calcium: SW-24
- Chloride: SW-26
- Magnesium: SW-24
- Molybdenum: SW-25 and SW-26
- Strontium: SW-24 and SW-26
- Sulfate: SW-24

Trend Tests

The Sen's Slope/Mann Kendall trend test was performed at the 99% confidence level for well/constituent pairs with exceedances mentioned above to determine whether concentrations are increasing, decreasing or stabilizing over time through April 2025 for downstream well SW-23, and through September 2025 for all other downstream wells (Figure J). Trend tests for upstream well SW-22 through April 2025 were included to establish whether similar patterns may be seen upgradient of the facility. Statistically significant trends were identified for the following well/constituent pair:

Increasing

- None

Decreasing

- Boron: SW-24
- Calcium: SW-24

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for Muscatine Power & Water. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,



Easton Rayner
Groundwater Analyst



Andrew Collins
Project Manager

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Summary Tables

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Monitoring Wells - April 2025
100% Non-Detects

Analysis Run 12/15/2025 3:02 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Aluminum (mg/L)
MW-15A, MW-21, MW-24, MW-6A

Arsenic (mg/L)
MW-14A, MW-15A, MW-21, MW-24, MW-26, MW-27, MW-4B, MW-5B, MW-6A

Beryllium (mg/L)
MW-14A, MW-15A, MW-21, MW-24, MW-26, MW-27, MW-4B, MW-5B, MW-6A

Boron (mg/L)
MW-5B, MW-6A

Cobalt (mg/L)
MW-14A, MW-15A, MW-21, MW-24, MW-26, MW-5B, MW-6A

Copper (mg/L)
MW-14A, MW-15A, MW-21, MW-24, MW-27, MW-4B, MW-5B, MW-6A

Fluoride (mg/L)
MW-27

Iron (mg/L)
MW-15A, MW-21, MW-24

Lead (mg/L)
MW-14A, MW-15A, MW-24, MW-26, MW-6A

Manganese (mg/L)
MW-15A, MW-21

Molybdenum (mg/L)
MW-27, MW-6A

Nickel (mg/L)
MW-14A, MW-15A, MW-24, MW-26, MW-27, MW-5B, MW-6A

Selenium (mg/L)
MW-24, MW-26, MW-27, MW-4B, MW-5B, MW-6A

Vanadium (mg/L)
MW-14A, MW-15A, MW-21, MW-24, MW-26, MW-4B, MW-5B, MW-6A

Zinc (mg/L)
MW-15A, MW-21, MW-24, MW-26, MW-27, MW-4B, MW-5B, MW-6A

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Monitoring Wells - September 2025
100% Non-Detects

Analysis Run 12/15/2025 3:17 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Aluminum (mg/L)
MW-15A, MW-21, MW-24, MW-6A

Arsenic (mg/L)
MW-14A, MW-15A, MW-21, MW-24, MW-26, MW-27, MW-4B, MW-5B, MW-6A

Beryllium (mg/L)
MW-14A, MW-15A, MW-21, MW-24, MW-26, MW-27, MW-4B, MW-5B, MW-6A

Boron (mg/L)
MW-5B, MW-6A

Cobalt (mg/L)
MW-14A, MW-15A, MW-21, MW-24, MW-26, MW-5B, MW-6A

Copper (mg/L)
MW-14A, MW-15A, MW-21, MW-24, MW-27, MW-4B, MW-5B, MW-6A

Iron (mg/L)
MW-15A, MW-21, MW-24

Lead (mg/L)
MW-14A, MW-15A, MW-24, MW-26, MW-6A

Manganese (mg/L)
MW-15A

Molybdenum (mg/L)
MW-27, MW-6A

Nickel (mg/L)
MW-14A, MW-15A, MW-24, MW-26, MW-27, MW-5B, MW-6A

Selenium (mg/L)
MW-24, MW-26, MW-27, MW-4B, MW-5B, MW-6A

Vanadium (mg/L)
MW-14A, MW-15A, MW-21, MW-24, MW-26, MW-4B, MW-5B, MW-6A

Zinc (mg/L)
MW-15A, MW-21, MW-24, MW-26, MW-27, MW-4B, MW-5B, MW-6A

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Surface Water Locations - April 2025
100% Non-Detects

Analysis Run 12/10/2025 2:07 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Aluminum (mg/L)
SW-24

Arsenic (mg/L)
SW-24, SW-25

Beryllium (mg/L)
SW-23, SW-24, SW-25, SW-26

Cobalt (mg/L)
SW-24

Copper (mg/L)
SW-24, SW-25

Lead (mg/L)
SW-24

Nickel (mg/L)
SW-23, SW-24, SW-25, SW-26

Selenium (mg/L)
SW-23, SW-24, SW-25

Vanadium (mg/L)
SW-23, SW-24, SW-25

Zinc (mg/L)
SW-23, SW-24, SW-25

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Surface Water Locations - September 2025
100% Non-Detects

Analysis Run 12/10/2025 3:25 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Aluminum (mg/L)
SW-24

Arsenic (mg/L)
SW-24, SW-25

Beryllium (mg/L)
SW-24, SW-25, SW-26

Cobalt (mg/L)
SW-24

Copper (mg/L)
SW-24, SW-25

Lead (mg/L)
SW-24

Nickel (mg/L)
SW-24, SW-25, SW-26

Selenium (mg/L)
SW-24, SW-25

Vanadium (mg/L)
SW-24, SW-25

Zinc (mg/L)
SW-24, SW-25

Outlier Summary - Monitoring Wells

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 4:00 PM

	MW-15A Barium (mg/L)	MW-08 Calcium (mg/L)	MW-15A Chloride (mg/L)	MW-08 Fluoride (mg/L)	MW-14A Fluoride (mg/L)	MW-15A Fluoride (mg/L)	MW-4B Lead (mg/L)	MW-22 Manganese (mg/L)
6/6/2016	2.13 (o)							
6/7/2016		152 (o)					0.00147 (o)	
4/17/2017			47.4 (o)	1.69 (o)	1.93 (o)	6.7 (o)		
8/6/2019								1.74 (o)

Outlier Summary - Surface Water Locations

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 4:01 PM

	SW-22 Copper (mg/L)
9/1/2021	0.0358 (o)

Trend Tests - Upgradient Wells - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 2:58 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Arsenic (mg/L)	**MW-22 (bg)**	**0.0006658**	**101**	**63**	**Yes**	**17**	**29.41**	**n/a**	**n/a**	**0.01**	**NP**
Barium (mg/L)	**MW-10 (bg)**	**0.006419**	**120**	**111**	**Yes**	**25**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Barium (mg/L)	**MW-22 (bg)**	**0.01142**	**106**	**63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-22 (bg)**	**-2.056**	**-102**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-23 (bg)**	**1.516**	**85**	**58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Cobalt (mg/L)	**MW-08 (bg)**	**0.0001305**	**176**	**111**	**Yes**	**25**	**36**	**n/a**	**n/a**	**0.01**	**NP**
Cobalt (mg/L)	**MW-10 (bg)**	**0.00007216**	**158**	**111**	**Yes**	**25**	**4**	**n/a**	**n/a**	**0.01**	**NP**
Iron (mg/L)	**MW-08 (bg)**	**0.1718**	**79**	**53**	**Yes**	**15**	**33.33**	**n/a**	**n/a**	**0.01**	**NP**
Strontium (mg/L)	**MW-08 (bg)**	**-0.01488**	**-69**	**-53**	**Yes**	**15**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-08 (bg)**	**-12.86**	**-221**	**-118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-22 (bg)**	**4.734**	**77**	**63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-23 (bg)**	**-0.8498**	**-65**	**-58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Trend Tests - Upgradient Wells - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 2:58 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Aluminum (mg/L)	MW-08 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Aluminum (mg/L)	MW-10 (bg)	0	-14	-53	No	15	93.33	n/a	n/a	0.01	NP
Aluminum (mg/L)	MW-22 (bg)	0	10	43	No	13	92.31	n/a	n/a	0.01	NP
Aluminum (mg/L)	MW-23 (bg)	0.002312	0	43	No	13	7.692	n/a	n/a	0.01	NP
Aluminum (mg/L)	SW-22 (bg)	-0.005289	-12	-48	No	14	21.43	n/a	n/a	0.01	NP
Arsenic (mg/L)	MW-08 (bg)	0	100	111	No	25	80	n/a	n/a	0.01	NP
Arsenic (mg/L)	MW-10 (bg)	0.0001361	45	111	No	25	16	n/a	n/a	0.01	NP
Arsenic (mg/L)	**MW-22 (bg)**	**0.0006658**	**101**	**63**	**Yes**	**17**	**29.41**	**n/a**	**n/a**	**0.01**	**NP**
Arsenic (mg/L)	MW-23 (bg)	0	0	58	No	16	100	n/a	n/a	0.01	NP
Arsenic (mg/L)	SW-22 (bg)	0	4	48	No	14	78.57	n/a	n/a	0.01	NP
Barium (mg/L)	MW-08 (bg)	0.001261	67	111	No	25	0	n/a	n/a	0.01	NP
Barium (mg/L)	**MW-10 (bg)**	**0.006419**	**120**	**111**	**Yes**	**25**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Barium (mg/L)	**MW-22 (bg)**	**0.01142**	**106**	**63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Barium (mg/L)	MW-23 (bg)	-0.003443	-50	-58	No	16	0	n/a	n/a	0.01	NP
Barium (mg/L)	SW-22 (bg)	0	0	48	No	14	0	n/a	n/a	0.01	NP
Beryllium (mg/L)	MW-08 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Beryllium (mg/L)	MW-10 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Beryllium (mg/L)	MW-22 (bg)	0	0	63	No	17	100	n/a	n/a	0.01	NP
Beryllium (mg/L)	MW-23 (bg)	0	0	58	No	16	100	n/a	n/a	0.01	NP
Beryllium (mg/L)	SW-22 (bg)	0	0	48	No	14	100	n/a	n/a	0.01	NP
Boron (mg/L)	MW-08 (bg)	0	1	118	No	26	96.15	n/a	n/a	0.01	NP
Boron (mg/L)	MW-10 (bg)	0	0	118	No	26	100	n/a	n/a	0.01	NP
Boron (mg/L)	MW-22 (bg)	0	17	63	No	17	58.82	n/a	n/a	0.01	NP
Boron (mg/L)	MW-23 (bg)	0	23	58	No	16	62.5	n/a	n/a	0.01	NP
Boron (mg/L)	SW-22 (bg)	0	-34	-53	No	15	73.33	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-08 (bg)	-2.922	-102	-111	No	25	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-10 (bg)	0.5172	40	118	No	26	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-22 (bg)	-0.4821	-22	-63	No	17	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-23 (bg)	-1.457	-52	-58	No	16	0	n/a	n/a	0.01	NP
Calcium (mg/L)	SW-22 (bg)	-1.292	-19	-53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-08 (bg)	0.3471	107	118	No	26	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-10 (bg)	0	63	118	No	26	80.77	n/a	n/a	0.01	NP
Chloride (mg/L)	**MW-22 (bg)**	**-2.056**	**-102**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-23 (bg)**	**1.516**	**85**	**58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	SW-22 (bg)	0.6288	27	53	No	15	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	**MW-08 (bg)**	**0.0001305**	**176**	**111**	**Yes**	**25**	**36**	**n/a**	**n/a**	**0.01**	**NP**
Cobalt (mg/L)	**MW-10 (bg)**	**0.00007216**	**158**	**111**	**Yes**	**25**	**4**	**n/a**	**n/a**	**0.01**	**NP**
Cobalt (mg/L)	MW-22 (bg)	0	-54	-68	No	18	77.78	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-23 (bg)	-0.000005289	-40	-58	No	16	56.25	n/a	n/a	0.01	NP
Cobalt (mg/L)	SW-22 (bg)	0	8	48	No	14	71.43	n/a	n/a	0.01	NP
Copper (mg/L)	MW-08 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Copper (mg/L)	MW-10 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Copper (mg/L)	MW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Copper (mg/L)	MW-23 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Copper (mg/L)	SW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Fluoride (mg/L)	MW-08 (bg)	0	-31	-111	No	25	76	n/a	n/a	0.01	NP
Fluoride (mg/L)	MW-10 (bg)	0	-17	-118	No	26	80.77	n/a	n/a	0.01	NP
Fluoride (mg/L)	MW-22 (bg)	0	-23	-63	No	17	82.35	n/a	n/a	0.01	NP
Fluoride (mg/L)	MW-23 (bg)	0	-27	-58	No	16	87.5	n/a	n/a	0.01	NP
Fluoride (mg/L)	SW-22 (bg)	0	-19	-53	No	15	86.67	n/a	n/a	0.01	NP
Iron (mg/L)	**MW-08 (bg)**	**0.1718**	**79**	**53**	**Yes**	**15**	**33.33**	**n/a**	**n/a**	**0.01**	**NP**
Iron (mg/L)	MW-10 (bg)	-0.09218	-15	-53	No	15	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-22 (bg)	0	31	43	No	13	76.92	n/a	n/a	0.01	NP
Iron (mg/L)	MW-23 (bg)	0.0008538	1	43	No	13	15.38	n/a	n/a	0.01	NP
Iron (mg/L)	SW-22 (bg)	-0.02684	-19	-48	No	14	7.143	n/a	n/a	0.01	NP
Lead (mg/L)	MW-08 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Lead (mg/L)	MW-10 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Lead (mg/L)	MW-22 (bg)	0	0	63	No	17	100	n/a	n/a	0.01	NP
Lead (mg/L)	MW-23 (bg)	-0.00002816	-54	-58	No	16	50	n/a	n/a	0.01	NP
Lead (mg/L)	SW-22 (bg)	0	0	48	No	14	71.43	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-08 (bg)	-0.5535	-20	-53	No	15	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-10 (bg)	1.038	53	53	No	15	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-22 (bg)	-0.04727	-4	-43	No	13	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-23 (bg)	0.09952	6	43	No	13	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	SW-22 (bg)	-0.3358	-11	-48	No	14	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-08 (bg)	0.01268	9	53	No	15	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-10 (bg)	0.01382	51	53	No	15	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-22 (bg)	-0.02329	-4	-38	No	12	0	n/a	n/a	0.01	NP

Trend Tests - Upgradient Wells - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 2:58 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Manganese (mg/L)	MW-23 (bg)	-0.004444	-22	-43	No	13	0	n/a	n/a	0.01	NP
Manganese (mg/L)	SW-22 (bg)	-0.004286	-9	-48	No	14	0	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-08 (bg)	0	14	118	No	26	84.62	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-10 (bg)	0	41	111	No	25	72	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-22 (bg)	0.00004331	7	68	No	18	5.556	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-23 (bg)	0	-29	-58	No	16	87.5	n/a	n/a	0.01	NP
Molybdenum (mg/L)	SW-22 (bg)	0	5	48	No	14	92.86	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-08 (bg)	0	-6	-53	No	15	93.33	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-10 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-23 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Nickel (mg/L)	SW-22 (bg)	0	0	48	No	14	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-08 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-10 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-22 (bg)	0	0	63	No	17	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-23 (bg)	0	0	58	No	16	100	n/a	n/a	0.01	NP
Selenium (mg/L)	SW-22 (bg)	0	0	48	No	14	100	n/a	n/a	0.01	NP
Strontium (mg/L)	**MW-08 (bg)**	**-0.01488**	**-69**	**-53**	**Yes**	**15**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Strontium (mg/L)	MW-10 (bg)	0	0	53	No	15	0	n/a	n/a	0.01	NP
Strontium (mg/L)	MW-22 (bg)	-0.002315	-22	-43	No	13	0	n/a	n/a	0.01	NP
Strontium (mg/L)	MW-23 (bg)	-0.001906	-34	-43	No	13	0	n/a	n/a	0.01	NP
Strontium (mg/L)	SW-22 (bg)	-0.003632	-25	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**MW-08 (bg)**	**-12.86**	**-221**	**-118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	MW-10 (bg)	1.617	71	118	No	26	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**MW-22 (bg)**	**4.734**	**77**	**63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-23 (bg)**	**-0.8498**	**-65**	**-58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	SW-22 (bg)	-1.657	-36	-53	No	15	0	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-08 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-10 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-23 (bg)	0	10	43	No	13	92.31	n/a	n/a	0.01	NP
Vanadium (mg/L)	SW-22 (bg)	0	0	48	No	14	78.57	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-08 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-10 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-23 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Zinc (mg/L)	SW-22 (bg)	0	5	48	No	14	92.86	n/a	n/a	0.01	NP

Interwell Prediction Limits - Monitoring Wells (April 2025) - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:16 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**MW-14A**	**0.322**	**n/a**	**4/17/2025**	**15.4**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-15A**	**0.322**	**n/a**	**4/17/2025**	**8.16**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-21**	**0.322**	**n/a**	**4/16/2025**	**2.64**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-26**	**0.322**	**n/a**	**4/16/2025**	**3.4**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Calcium (mg/L)	**MW-14A**	**132**	**n/a**	**4/17/2025**	**286**	**Yes**	**80**	**0**	**n/a**	**0.0002975**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**MW-5B**	**30**	**n/a**	**4/18/2025**	**32.1**	**Yes**	**81**	**25.93**	**n/a**	**0.0002914**	**NP Inter (normality) 1 of 2**
Magnesium (mg/L)	**MW-14A**	**45.49**	**n/a**	**4/17/2025**	**134**	**Yes**	**52**	**0**	**x^(1/3)**	**0.0002787**	**Param Inter 1 of 2**
Magnesium (mg/L)	**MW-15A**	**45.49**	**n/a**	**4/17/2025**	**53.2**	**Yes**	**52**	**0**	**x^(1/3)**	**0.0002787**	**Param Inter 1 of 2**
Molybdenum (mg/L)	**MW-15A**	**0.00822**	**n/a**	**4/17/2025**	**0.0109**	**Yes**	**81**	**65.43**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Selenium (mg/L)	**MW-21**	**0.005**	**n/a**	**4/16/2025**	**0.00832**	**Yes**	**79**	**100**	**n/a**	**0.0003062**	**NP Inter (NDs) 1 of 2**
Sulfate (mg/L)	**MW-14A**	**366**	**n/a**	**4/17/2025**	**808**	**Yes**	**81**	**0**	**n/a**	**0.0002914**	**NP Inter (normality) 1 of 2**
Vanadium (mg/L)	**MW-27**	**0.00547**	**n/a**	**4/16/2025**	**0.00613**	**Yes**	**52**	**98.08**	**n/a**	**0.0006895**	**NP Inter (NDs) 1 of 2**

Interwell Prediction Limits - Monitoring Wells (April 2025) - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:16 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Aluminum (mg/L)	MW-14A	2.76	n/a	4/17/2025	0.104	No	52	75	n/a	0.0006895	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-26	2.76	n/a	4/16/2025	0.0503	No	52	75	n/a	0.0006895	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-27	2.76	n/a	4/16/2025	2.75	No	52	75	n/a	0.0006895	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-4B	2.76	n/a	4/18/2025	0.05ND	No	52	75	n/a	0.0006895	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-5B	2.76	n/a	4/18/2025	0.0574	No	52	75	n/a	0.0006895	NP Inter (NDs) 1 of 2
Arsenic (mg/L)	n/a	0.00784	n/a	n/a	9 future	n/a	79	55.7	n/a	0.0003062	NP Inter (NDs) 1 of 2
Barium (mg/L)	MW-14A	0.271	n/a	4/17/2025	0.0294	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-15A	0.271	n/a	4/17/2025	0.03	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-21	0.271	n/a	4/16/2025	0.046	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-24	0.271	n/a	4/16/2025	0.0973	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-26	0.271	n/a	4/16/2025	0.0617	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-27	0.271	n/a	4/16/2025	0.0607	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-4B	0.271	n/a	4/18/2025	0.157	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-5B	0.271	n/a	4/18/2025	0.256	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-6A	0.271	n/a	4/18/2025	0.231	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Beryllium (mg/L)	n/a	0.001	n/a	n/a	9 future	n/a	79	100	n/a	0.0003062	NP Inter (NDs) 1 of 2
Boron (mg/L)	**MW-14A**	**0.322**	**n/a**	**4/17/2025**	**15.4**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-15A**	**0.322**	**n/a**	**4/17/2025**	**8.16**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-21**	**0.322**	**n/a**	**4/16/2025**	**2.64**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	MW-24	0.322	n/a	4/16/2025	0.1ND	No	81	85.19	n/a	0.0002914	NP Inter (NDs) 1 of 2
Boron (mg/L)	**MW-26**	**0.322**	**n/a**	**4/16/2025**	**3.4**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	MW-27	0.322	n/a	4/16/2025	0.244	No	81	85.19	n/a	0.0002914	NP Inter (NDs) 1 of 2
Boron (mg/L)	MW-4B	0.322	n/a	4/18/2025	0.169	No	81	85.19	n/a	0.0002914	NP Inter (NDs) 1 of 2
Calcium (mg/L)	**MW-14A**	**132**	**n/a**	**4/17/2025**	**286**	**Yes**	**80**	**0**	**n/a**	**0.0002975**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	MW-15A	132	n/a	4/17/2025	125	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-21	132	n/a	4/16/2025	87.4	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-24	132	n/a	4/16/2025	71.6	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-26	132	n/a	4/16/2025	114	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-27	132	n/a	4/16/2025	26.4	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-4B	132	n/a	4/18/2025	86.8	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-5B	132	n/a	4/18/2025	106	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-6A	132	n/a	4/18/2025	85.2	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-14A	30	n/a	4/17/2025	18	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-15A	30	n/a	4/17/2025	7.79	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-21	30	n/a	4/16/2025	10.9	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-24	30	n/a	4/16/2025	23.6	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-26	30	n/a	4/16/2025	17.2	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-27	30	n/a	4/16/2025	23	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-4B	30	n/a	4/18/2025	18.9	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	**MW-5B**	**30**	**n/a**	**4/18/2025**	**32.1**	**Yes**	**81**	**25.93**	**n/a**	**0.0002914**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	MW-6A	30	n/a	4/18/2025	15.8	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Cobalt (mg/L)	MW-27	0.00558	n/a	4/16/2025	0.000855	No	80	38.75	n/a	0.0002975	NP Inter (normality) 1 of 2
Cobalt (mg/L)	MW-4B	0.00558	n/a	4/18/2025	0.00119	No	80	38.75	n/a	0.0002975	NP Inter (normality) 1 of 2
Copper (mg/L)	MW-26	0.005	n/a	4/16/2025	0.005ND	No	52	100	n/a	0.0006895	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-14A	1	n/a	4/17/2025	0.262	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-15A	1	n/a	4/17/2025	0.257	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-21	1	n/a	4/16/2025	0.154	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-24	1	n/a	4/16/2025	0.22	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-26	1	n/a	4/16/2025	0.181	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-4B	1	n/a	4/18/2025	0.268	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-5B	1	n/a	4/18/2025	0.193	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-6A	1	n/a	4/18/2025	0.303	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Iron (mg/L)	MW-14A	4.38	n/a	4/17/2025	0.163	No	52	32.69	n/a	0.0006895	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-26	4.38	n/a	4/16/2025	0.1ND	No	52	32.69	n/a	0.0006895	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-27	4.38	n/a	4/16/2025	2.37	No	52	32.69	n/a	0.0006895	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-4B	4.38	n/a	4/18/2025	0.31	No	52	32.69	n/a	0.0006895	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-5B	4.38	n/a	4/18/2025	2.25	No	52	32.69	n/a	0.0006895	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-6A	4.38	n/a	4/18/2025	3.2	No	52	32.69	n/a	0.0006895	NP Inter (normality) 1 of 2
Lead (mg/L)	MW-21	0.00204	n/a	4/16/2025	0.0005ND	No	79	89.87	n/a	0.0003062	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-27	0.00204	n/a	4/16/2025	0.00108	No	79	89.87	n/a	0.0003062	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-4B	0.00204	n/a	4/18/2025	0.0005ND	No	79	89.87	n/a	0.0003062	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-5B	0.00204	n/a	4/18/2025	0.0005ND	No	79	89.87	n/a	0.0003062	NP Inter (NDs) 1 of 2
Magnesium (mg/L)	**MW-14A**	**45.49**	**n/a**	**4/17/2025**	**134**	**Yes**	**52**	**0**	**x^(1/3)**	**0.0002787**	**Param Inter 1 of 2**
Magnesium (mg/L)	**MW-15A**	**45.49**	**n/a**	**4/17/2025**	**53.2**	**Yes**	**52**	**0**	**x^(1/3)**	**0.0002787**	**Param Inter 1 of 2**
Magnesium (mg/L)	MW-21	45.49	n/a	4/16/2025	40.5	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-24	45.49	n/a	4/16/2025	32.7	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-26	45.49	n/a	4/16/2025	43.3	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-27	45.49	n/a	4/16/2025	13	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2

Interwell Prediction Limits - Monitoring Wells (April 2025) - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:16 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Magnesium (mg/L)	MW-4B	45.49	n/a	4/18/2025	32.3	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-5B	45.49	n/a	4/18/2025	36.3	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-6A	45.49	n/a	4/18/2025	28.8	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-14A	1.163	n/a	4/17/2025	0.005ND	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-24	1.163	n/a	4/16/2025	0.0166	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-26	1.163	n/a	4/16/2025	0.0423	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-27	1.163	n/a	4/16/2025	0.094	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-4B	1.163	n/a	4/18/2025	0.241	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-5B	1.163	n/a	4/18/2025	0.478	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-6A	1.163	n/a	4/18/2025	0.111	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Molybdenum (mg/L)	MW-14A	0.00822	n/a	4/17/2025	0.00322	No	81	65.43	n/a	0.0002914	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	**MW-15A**	**0.00822**	**n/a**	**4/17/2025**	**0.0109**	**Yes**	**81**	**65.43**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Molybdenum (mg/L)	MW-21	0.00822	n/a	4/16/2025	0.002ND	No	81	65.43	n/a	0.0002914	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-24	0.00822	n/a	4/16/2025	0.002ND	No	81	65.43	n/a	0.0002914	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-26	0.00822	n/a	4/16/2025	0.002ND	No	81	65.43	n/a	0.0002914	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-4B	0.00822	n/a	4/18/2025	0.002ND	No	81	65.43	n/a	0.0002914	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-5B	0.00822	n/a	4/18/2025	0.002ND	No	81	65.43	n/a	0.0002914	NP Inter (NDs) 1 of 2
Nickel (mg/L)	MW-21	0.00628	n/a	4/16/2025	0.005ND	No	52	98.08	n/a	0.0006895	NP Inter (NDs) 1 of 2
Nickel (mg/L)	MW-4B	0.00628	n/a	4/18/2025	0.005ND	No	52	98.08	n/a	0.0006895	NP Inter (NDs) 1 of 2
Selenium (mg/L)	MW-14A	0.005	n/a	4/17/2025	0.005ND	No	79	100	n/a	0.0003062	NP Inter (NDs) 1 of 2
Selenium (mg/L)	MW-15A	0.005	n/a	4/17/2025	0.005ND	No	79	100	n/a	0.0003062	NP Inter (NDs) 1 of 2
Selenium (mg/L)	**MW-21**	**0.005**	**n/a**	**4/16/2025**	**0.00832**	**Yes**	**79**	**100**	**n/a**	**0.0003062**	**NP Inter (NDs) 1 of 2**
Strontium (mg/L)	MW-14A	0.3222	n/a	4/17/2025	0.229	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-15A	0.3222	n/a	4/17/2025	0.107	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-21	0.3222	n/a	4/16/2025	0.173	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-24	0.3222	n/a	4/16/2025	0.0806	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-26	0.3222	n/a	4/16/2025	0.119	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-27	0.3222	n/a	4/16/2025	0.067	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-4B	0.3222	n/a	4/18/2025	0.0917	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-5B	0.3222	n/a	4/18/2025	0.159	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-6A	0.3222	n/a	4/18/2025	0.175	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Sulfate (mg/L)	**MW-14A**	**366**	**n/a**	**4/17/2025**	**808**	**Yes**	**81**	**0**	**n/a**	**0.0002914**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	MW-15A	366	n/a	4/17/2025	309	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-21	366	n/a	4/16/2025	230	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-24	366	n/a	4/16/2025	40.5	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-26	366	n/a	4/16/2025	269	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-27	366	n/a	4/16/2025	11.4	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-4B	366	n/a	4/18/2025	50.8	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-5B	366	n/a	4/18/2025	35.7	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-6A	366	n/a	4/18/2025	18.5	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Vanadium (mg/L)	**MW-27**	**0.00547**	**n/a**	**4/16/2025**	**0.00613**	**Yes**	**52**	**98.08**	**n/a**	**0.0006895**	**NP Inter (NDs) 1 of 2**
Zinc (mg/L)	MW-14A	0.02	n/a	4/17/2025	0.02ND	No	52	100	n/a	0.0006895	NP Inter (NDs) 1 of 2

Interwell Prediction Limits - Monitoring Wells (September 2025) - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:19 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**MW-14A**	**0.322**	**n/a**	**9/9/2025**	**16.1**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-15A**	**0.322**	**n/a**	**9/10/2025**	**5.51**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-21**	**0.322**	**n/a**	**9/9/2025**	**1.65**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-26**	**0.322**	**n/a**	**9/9/2025**	**4.81**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-27**	**0.322**	**n/a**	**9/9/2025**	**2.46**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Calcium (mg/L)	**MW-14A**	**132**	**n/a**	**9/9/2025**	**277**	**Yes**	**84**	**0**	**n/a**	**0.0002731**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**MW-5B**	**30**	**n/a**	**9/10/2025**	**42**	**Yes**	**85**	**24.71**	**n/a**	**0.000267**	**NP Inter (normality) 1 of 2**
Magnesium (mg/L)	**MW-14A**	**45.4**	**n/a**	**9/9/2025**	**124**	**Yes**	**56**	**0**	**x^(1/3)**	**0.0002787**	**Param Inter 1 of 2**
Nickel (mg/L)	**MW-21**	**0.00628**	**n/a**	**9/9/2025**	**0.0206**	**Yes**	**56**	**98.21**	**n/a**	**0.0006037**	**NP Inter (NDs) 1 of 2**
Sulfate (mg/L)	**MW-14A**	**366**	**n/a**	**9/9/2025**	**953**	**Yes**	**85**	**0**	**n/a**	**0.000267**	**NP Inter (normality) 1 of 2**

Interwell Prediction Limits - Monitoring Wells (September 2025) - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:19 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Aluminum (mg/L)	MW-14A	2.76	n/a	9/9/2025	0.05ND	No	56	75	n/a	0.0006037	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-26	2.76	n/a	9/9/2025	0.05ND	No	56	75	n/a	0.0006037	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-27	2.76	n/a	9/9/2025	0.0623	No	56	75	n/a	0.0006037	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-4B	2.76	n/a	9/10/2025	0.05ND	No	56	75	n/a	0.0006037	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-5B	2.76	n/a	9/10/2025	0.05ND	No	56	75	n/a	0.0006037	NP Inter (NDs) 1 of 2
Arsenic (mg/L)	n/a	0.00784	n/a	n/a	9 future	n/a	83	54.22	n/a	0.0002792	NP Inter (NDs) 1 of 2
Barium (mg/L)	MW-14A	0.271	n/a	9/9/2025	0.0331	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-15A	0.271	n/a	9/10/2025	0.0302	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-21	0.271	n/a	9/9/2025	0.0412	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-24	0.271	n/a	9/9/2025	0.101	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-26	0.271	n/a	9/9/2025	0.0589	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-27	0.271	n/a	9/9/2025	0.0804	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-4B	0.271	n/a	9/10/2025	0.175	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-5B	0.271	n/a	9/10/2025	0.252	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-6A	0.271	n/a	9/10/2025	0.213	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Beryllium (mg/L)	n/a	0.001	n/a	n/a	9 future	n/a	83	100	n/a	0.0002792	NP Inter (NDs) 1 of 2
Boron (mg/L)	**MW-14A**	**0.322**	**n/a**	**9/9/2025**	**16.1**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-15A**	**0.322**	**n/a**	**9/10/2025**	**5.51**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-21**	**0.322**	**n/a**	**9/9/2025**	**1.65**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	MW-24	0.322	n/a	9/9/2025	0.126	No	85	83.53	n/a	0.000267	NP Inter (NDs) 1 of 2
Boron (mg/L)	**MW-26**	**0.322**	**n/a**	**9/9/2025**	**4.81**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-27**	**0.322**	**n/a**	**9/9/2025**	**2.46**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	MW-4B	0.322	n/a	9/10/2025	0.1ND	No	85	83.53	n/a	0.000267	NP Inter (NDs) 1 of 2
Calcium (mg/L)	**MW-14A**	**132**	**n/a**	**9/9/2025**	**277**	**Yes**	**84**	**0**	**n/a**	**0.0002731**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	MW-15A	132	n/a	9/10/2025	77.2	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-21	132	n/a	9/9/2025	52.8	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-24	132	n/a	9/9/2025	72.9	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-26	132	n/a	9/9/2025	114	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-27	132	n/a	9/9/2025	55.5	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-4B	132	n/a	9/10/2025	94.9	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-5B	132	n/a	9/10/2025	114	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-6A	132	n/a	9/10/2025	79	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-14A	30	n/a	9/9/2025	15.4	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-15A	30	n/a	9/10/2025	4.5	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-21	30	n/a	9/9/2025	5.1	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-24	30	n/a	9/9/2025	26.5	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-26	30	n/a	9/9/2025	17.1	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-27	30	n/a	9/9/2025	24.4	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-4B	30	n/a	9/10/2025	18.9	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	**MW-5B**	**30**	**n/a**	**9/10/2025**	**42**	**Yes**	**85**	**24.71**	**n/a**	**0.000267**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	MW-6A	30	n/a	9/10/2025	16.8	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Cobalt (mg/L)	MW-27	0.00558	n/a	9/9/2025	0.0005ND	No	84	39.29	n/a	0.0002731	NP Inter (normality) 1 of 2
Cobalt (mg/L)	MW-4B	0.00558	n/a	9/10/2025	0.00247	No	84	39.29	n/a	0.0002731	NP Inter (normality) 1 of 2
Copper (mg/L)	MW-26	0.005	n/a	9/9/2025	0.005ND	No	56	100	n/a	0.0006037	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-14A	1	n/a	9/9/2025	0.261	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-15A	1	n/a	9/10/2025	0.293	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-21	1	n/a	9/9/2025	0.174	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-24	1	n/a	9/9/2025	0.222	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-26	1	n/a	9/9/2025	0.187	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-27	1	n/a	9/9/2025	0.173	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-4B	1	n/a	9/10/2025	0.274	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-5B	1	n/a	9/10/2025	0.173	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-6A	1	n/a	9/10/2025	0.273	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Iron (mg/L)	MW-14A	4.38	n/a	9/9/2025	0.1ND	No	56	30.36	n/a	0.0006037	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-26	4.38	n/a	9/9/2025	0.1ND	No	56	30.36	n/a	0.0006037	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-27	4.38	n/a	9/9/2025	0.1ND	No	56	30.36	n/a	0.0006037	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-4B	4.38	n/a	9/10/2025	0.931	No	56	30.36	n/a	0.0006037	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-5B	4.38	n/a	9/10/2025	2.07	No	56	30.36	n/a	0.0006037	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-6A	4.38	n/a	9/10/2025	3.11	No	56	30.36	n/a	0.0006037	NP Inter (normality) 1 of 2
Lead (mg/L)	MW-21	0.00204	n/a	9/9/2025	0.0005ND	No	83	90.36	n/a	0.0002792	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-27	0.00204	n/a	9/9/2025	0.0005ND	No	83	90.36	n/a	0.0002792	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-4B	0.00204	n/a	9/10/2025	0.0005ND	No	83	90.36	n/a	0.0002792	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-5B	0.00204	n/a	9/10/2025	0.0005ND	No	83	90.36	n/a	0.0002792	NP Inter (NDs) 1 of 2
Magnesium (mg/L)	**MW-14A**	**45.4**	**n/a**	**9/9/2025**	**124**	**Yes**	**56**	**0**	**x^(1/3)**	**0.0002787**	**Param Inter 1 of 2**
Magnesium (mg/L)	MW-15A	45.4	n/a	9/10/2025	34.2	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-21	45.4	n/a	9/9/2025	23.7	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-24	45.4	n/a	9/9/2025	34.6	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-26	45.4	n/a	9/9/2025	44.8	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2

Interwell Prediction Limits - Monitoring Wells (September 2025) - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:19 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Magnesium (mg/L)	MW-27	45.4	n/a	9/9/2025	24.2	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-4B	45.4	n/a	9/10/2025	35.7	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-5B	45.4	n/a	9/10/2025	38.3	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-6A	45.4	n/a	9/10/2025	27.5	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-14A	1.137	n/a	9/9/2025	0.005ND	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-21	1.137	n/a	9/9/2025	0.32	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-24	1.137	n/a	9/9/2025	0.0326	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-26	1.137	n/a	9/9/2025	0.146	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-27	1.137	n/a	9/9/2025	0.0138	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-4B	1.137	n/a	9/10/2025	0.386	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-5B	1.137	n/a	9/10/2025	0.53	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-6A	1.137	n/a	9/10/2025	0.0942	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Molybdenum (mg/L)	MW-14A	0.00822	n/a	9/9/2025	0.002ND	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-15A	0.00822	n/a	9/10/2025	0.002ND	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-21	0.00822	n/a	9/9/2025	0.002ND	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-24	0.00822	n/a	9/9/2025	0.0025	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-26	0.00822	n/a	9/9/2025	0.002ND	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-4B	0.00822	n/a	9/10/2025	0.002ND	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-5B	0.00822	n/a	9/10/2025	0.002ND	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Nickel (mg/L)	**MW-21**	**0.00628**	**n/a**	**9/9/2025**	**0.0206**	**Yes**	**56**	**98.21**	**n/a**	**0.0006037**	**NP Inter (NDs) 1 of 2**
Nickel (mg/L)	MW-4B	0.00628	n/a	9/10/2025	0.005ND	No	56	98.21	n/a	0.0006037	NP Inter (NDs) 1 of 2
Selenium (mg/L)	MW-14A	0.005	n/a	9/9/2025	0.005ND	No	83	100	n/a	0.0002792	NP Inter (NDs) 1 of 2
Selenium (mg/L)	MW-15A	0.005	n/a	9/10/2025	0.005ND	No	83	100	n/a	0.0002792	NP Inter (NDs) 1 of 2
Selenium (mg/L)	MW-21	0.005	n/a	9/9/2025	0.005ND	No	83	100	n/a	0.0002792	NP Inter (NDs) 1 of 2
Strontium (mg/L)	MW-14A	0.3166	n/a	9/9/2025	0.243	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-15A	0.3166	n/a	9/10/2025	0.0826	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-21	0.3166	n/a	9/9/2025	0.166	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-24	0.3166	n/a	9/9/2025	0.079	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-26	0.3166	n/a	9/9/2025	0.12	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-27	0.3166	n/a	9/9/2025	0.122	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-4B	0.3166	n/a	9/10/2025	0.101	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-5B	0.3166	n/a	9/10/2025	0.161	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-6A	0.3166	n/a	9/10/2025	0.162	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Sulfate (mg/L)	**MW-14A**	**366**	**n/a**	**9/9/2025**	**953**	**Yes**	**85**	**0**	**n/a**	**0.000267**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	MW-15A	366	n/a	9/10/2025	162	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-21	366	n/a	9/9/2025	135	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-24	366	n/a	9/9/2025	38.2	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-26	366	n/a	9/9/2025	264	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-27	366	n/a	9/9/2025	55.2	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-4B	366	n/a	9/10/2025	55.8	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-5B	366	n/a	9/10/2025	47.6	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-6A	366	n/a	9/10/2025	20.7	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Vanadium (mg/L)	MW-27	0.00547	n/a	9/9/2025	0.005ND	No	56	98.21	n/a	0.0006037	NP Inter (NDs) 1 of 2
Zinc (mg/L)	MW-14A	0.02	n/a	9/9/2025	0.02ND	No	56	100	n/a	0.0006037	NP Inter (NDs) 1 of 2

Trend Tests - Monitoring Wells Prediction Limit Exceedances - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:28 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**MW-15A**	**-1.271**	**-241**	**-124**	**Yes**	**27**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-22 (bg)**	**-2.056**	**-102**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-23 (bg)**	**1.516**	**85**	**58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-5B**	**-3.931**	**-190**	**-124**	**Yes**	**27**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Magnesium (mg/L)	**MW-14A**	**3.445**	**55**	**53**	**Yes**	**15**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Magnesium (mg/L)	**MW-15A**	**-3.296**	**-58**	**-53**	**Yes**	**15**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Selenium (mg/L)	**MW-21**	**-0.0006943**	**-141**	**-111**	**Yes**	**25**	**28**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-08 (bg)**	**-12.86**	**-221**	**-118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-22 (bg)**	**4.734**	**77**	**63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-23 (bg)**	**-0.8498**	**-65**	**-58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Trend Tests - Monitoring Wells Prediction Limit Exceedances - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:28 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	MW-08 (bg)	0	1	118	No	26	96.15	n/a	n/a	0.01	NP
Boron (mg/L)	MW-10 (bg)	0	0	118	No	26	100	n/a	n/a	0.01	NP
Boron (mg/L)	MW-14A	0.1732	50	124	No	27	0	n/a	n/a	0.01	NP
Boron (mg/L)	**MW-15A**	**-1.271**	**-241**	**-124**	**Yes**	**27**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	MW-21	-0.4056	-107	-124	No	27	3.704	n/a	n/a	0.01	NP
Boron (mg/L)	MW-22 (bg)	0	17	63	No	17	58.82	n/a	n/a	0.01	NP
Boron (mg/L)	MW-23 (bg)	0	23	58	No	16	62.5	n/a	n/a	0.01	NP
Boron (mg/L)	MW-26	0.4242	27	34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	MW-27	0.0178	1	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-08 (bg)	-2.922	-102	-111	No	25	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-10 (bg)	0.5172	40	118	No	26	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-14A	-1.662	-43	-124	No	27	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-22 (bg)	-0.4821	-22	-63	No	17	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-23 (bg)	-1.457	-52	-58	No	16	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-08 (bg)	0.3471	107	118	No	26	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-10 (bg)	0	63	118	No	26	80.77	n/a	n/a	0.01	NP
Chloride (mg/L)	**MW-22 (bg)**	**-2.056**	**-102**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-23 (bg)**	**1.516**	**85**	**58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-5B**	**-3.931**	**-190**	**-124**	**Yes**	**27**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Magnesium (mg/L)	MW-08 (bg)	-0.5535	-20	-53	No	15	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-10 (bg)	1.038	53	53	No	15	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	**MW-14A**	**3.445**	**55**	**53**	**Yes**	**15**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Magnesium (mg/L)	**MW-15A**	**-3.296**	**-58**	**-53**	**Yes**	**15**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Magnesium (mg/L)	MW-22 (bg)	-0.04727	-4	-43	No	13	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-23 (bg)	0.09952	6	43	No	13	0	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-08 (bg)	0	14	118	No	26	84.62	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-10 (bg)	0	41	111	No	25	72	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-15A	0	22	111	No	25	96	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-22 (bg)	0.00004331	7	68	No	18	5.556	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-23 (bg)	0	-29	-58	No	16	87.5	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-08 (bg)	0	-6	-53	No	15	93.33	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-10 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-21	-0.0001716	-43	-53	No	15	53.33	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-23 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-08 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-10 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Selenium (mg/L)	**MW-21**	**-0.0006943**	**-141**	**-111**	**Yes**	**25**	**28**	**n/a**	**n/a**	**0.01**	**NP**
Selenium (mg/L)	MW-22 (bg)	0	0	63	No	17	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-23 (bg)	0	0	58	No	16	100	n/a	n/a	0.01	NP
Sulfate (mg/L)	**MW-08 (bg)**	**-12.86**	**-221**	**-118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	MW-10 (bg)	1.617	71	118	No	26	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-14A	-11.48	-57	-124	No	27	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**MW-22 (bg)**	**4.734**	**77**	**63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-23 (bg)**	**-0.8498**	**-65**	**-58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Vanadium (mg/L)	MW-08 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-10 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-23 (bg)	0	10	43	No	13	92.31	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-27	0	8	34	No	11	90.91	n/a	n/a	0.01	NP

Interwell Prediction Limits - Surface Water Locations (April 2025) - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/10/2025, 3:13 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**SW-24**	**6.67**	**n/a**	**4/14/2025**	**7.82**	**Yes**	**15**	**73.33**	**n/a**	**0.006934**	**NP Inter (NDs) 1 of 2**
Cobalt (mg/L)	**SW-26**	**0.00116**	**n/a**	**4/14/2025**	**0.14**	**Yes**	**14**	**71.43**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Copper (mg/L)	**SW-26**	**0.005**	**n/a**	**4/14/2025**	**0.00773**	**Yes**	**13**	**100**	**n/a**	**0.008777**	**NP Inter (NDs) 1 of 2**
Lead (mg/L)	**SW-26**	**0.00258**	**n/a**	**4/14/2025**	**0.00299**	**Yes**	**14**	**71.43**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Magnesium (mg/L)	**SW-24**	**73.3**	**n/a**	**4/14/2025**	**78.7**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Molybdenum (mg/L)	**SW-26**	**0.00637**	**n/a**	**4/14/2025**	**0.00699**	**Yes**	**14**	**92.86**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Selenium (mg/L)	**SW-26**	**0.005**	**n/a**	**4/14/2025**	**0.0375**	**Yes**	**14**	**100**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Strontium (mg/L)	**SW-26**	**0.285**	**n/a**	**4/14/2025**	**0.402**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**

Interwell Prediction Limits - Surface Water Locations (April 2025) - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/10/2025, 3:13 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Aluminum (mg/L)	SW-23	1.28	n/a	4/14/2025	0.05ND	No	14	21.43	n/a	0.007852	NP Inter (normality) 1 of 2
Aluminum (mg/L)	SW-25	1.28	n/a	4/14/2025	0.05ND	No	14	21.43	n/a	0.007852	NP Inter (normality) 1 of 2
Aluminum (mg/L)	SW-26	1.28	n/a	4/14/2025	1.28	No	14	21.43	n/a	0.007852	NP Inter (normality) 1 of 2
Arsenic (mg/L)	SW-23	0.00367	n/a	4/14/2025	0.002ND	No	14	78.57	n/a	0.007852	NP Inter (NDs) 1 of 2
Arsenic (mg/L)	SW-26	0.00367	n/a	4/14/2025	0.002ND	No	14	78.57	n/a	0.007852	NP Inter (NDs) 1 of 2
Barium (mg/L)	SW-23	0.216	n/a	4/14/2025	0.0586	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Barium (mg/L)	SW-24	0.216	n/a	4/14/2025	0.0213	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Barium (mg/L)	SW-25	0.216	n/a	4/14/2025	0.0503	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Barium (mg/L)	SW-26	0.216	n/a	4/14/2025	0.0737	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Beryllium (mg/L)	n/a	0.001	n/a	n/a	4 future	n/a	14	100	n/a	0.007852	NP Inter (NDs) 1 of 2
Boron (mg/L)	SW-23	6.67	n/a	4/14/2025	0.755	No	15	73.33	n/a	0.006934	NP Inter (NDs) 1 of 2
Boron (mg/L)	**SW-24**	**6.67**	**n/a**	**4/14/2025**	**7.82**	**Yes**	**15**	**73.33**	**n/a**	**0.006934**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	SW-25	6.67	n/a	4/14/2025	3.57	No	15	73.33	n/a	0.006934	NP Inter (NDs) 1 of 2
Boron (mg/L)	SW-26	6.67	n/a	4/14/2025	0.14	No	15	73.33	n/a	0.006934	NP Inter (NDs) 1 of 2
Calcium (mg/L)	SW-23	221	n/a	4/14/2025	63.1	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Calcium (mg/L)	SW-24	221	n/a	4/14/2025	183	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Calcium (mg/L)	SW-25	221	n/a	4/14/2025	143	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Calcium (mg/L)	SW-26	221	n/a	4/14/2025	66.2	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Chloride (mg/L)	SW-23	23.24	n/a	4/14/2025	20.4	No	15	0	No	0.0006269	Param Inter 1 of 2
Chloride (mg/L)	SW-24	23.24	n/a	4/14/2025	14.7	No	15	0	No	0.0006269	Param Inter 1 of 2
Chloride (mg/L)	SW-25	23.24	n/a	4/14/2025	17	No	15	0	No	0.0006269	Param Inter 1 of 2
Chloride (mg/L)	SW-26	23.24	n/a	4/14/2025	22.7	No	15	0	No	0.0006269	Param Inter 1 of 2
Cobalt (mg/L)	SW-23	0.00116	n/a	4/14/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Cobalt (mg/L)	SW-25	0.00116	n/a	4/14/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Cobalt (mg/L)	**SW-26**	**0.00116**	**n/a**	**4/14/2025**	**0.14**	**Yes**	**14**	**71.43**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Copper (mg/L)	SW-23	0.005	n/a	4/14/2025	0.005ND	No	13	100	n/a	0.008777	NP Inter (NDs) 1 of 2
Copper (mg/L)	**SW-26**	**0.005**	**n/a**	**4/14/2025**	**0.00773**	**Yes**	**13**	**100**	**n/a**	**0.008777**	**NP Inter (NDs) 1 of 2**
Fluoride (mg/L)	SW-23	1	n/a	4/14/2025	0.272	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	SW-24	1	n/a	4/14/2025	0.2	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	SW-25	1	n/a	4/14/2025	0.244	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	SW-26	1	n/a	4/14/2025	0.256	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Iron (mg/L)	SW-23	1.888	n/a	4/14/2025	0.183	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Iron (mg/L)	SW-24	1.888	n/a	4/14/2025	0.05ND	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Iron (mg/L)	SW-25	1.888	n/a	4/14/2025	0.05ND	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Iron (mg/L)	SW-26	1.888	n/a	4/14/2025	1.61	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Lead (mg/L)	SW-23	0.00258	n/a	4/14/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Lead (mg/L)	SW-25	0.00258	n/a	4/14/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Lead (mg/L)	**SW-26**	**0.00258**	**n/a**	**4/14/2025**	**0.00299**	**Yes**	**14**	**71.43**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Magnesium (mg/L)	SW-23	73.3	n/a	4/14/2025	28	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Magnesium (mg/L)	**SW-24**	**73.3**	**n/a**	**4/14/2025**	**78.7**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Magnesium (mg/L)	SW-25	73.3	n/a	4/14/2025	49.6	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Magnesium (mg/L)	SW-26	73.3	n/a	4/14/2025	23.1	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Manganese (mg/L)	SW-23	0.912	n/a	4/14/2025	0.0584	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Manganese (mg/L)	SW-24	0.912	n/a	4/14/2025	0.005ND	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Manganese (mg/L)	SW-25	0.912	n/a	4/14/2025	0.0159	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Manganese (mg/L)	SW-26	0.912	n/a	4/14/2025	0.0545	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Molybdenum (mg/L)	SW-23	0.00637	n/a	4/14/2025	0.002ND	No	14	92.86	n/a	0.007852	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	SW-24	0.00637	n/a	4/14/2025	0.00216	No	14	92.86	n/a	0.007852	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	SW-25	0.00637	n/a	4/14/2025	0.002ND	No	14	92.86	n/a	0.007852	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	**SW-26**	**0.00637**	**n/a**	**4/14/2025**	**0.00699**	**Yes**	**14**	**92.86**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Nickel (mg/L)	n/a	0.005	n/a	n/a	4 future	n/a	14	100	n/a	0.007852	NP Inter (NDs) 1 of 2
Selenium (mg/L)	**SW-26**	**0.005**	**n/a**	**4/14/2025**	**0.0375**	**Yes**	**14**	**100**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Strontium (mg/L)	SW-23	0.285	n/a	4/14/2025	0.128	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Strontium (mg/L)	SW-24	0.285	n/a	4/14/2025	0.271	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Strontium (mg/L)	SW-25	0.285	n/a	4/14/2025	0.206	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Strontium (mg/L)	**SW-26**	**0.285**	**n/a**	**4/14/2025**	**0.402**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	SW-23	554	n/a	4/14/2025	34.9	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Sulfate (mg/L)	SW-24	554	n/a	4/14/2025	129	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Sulfate (mg/L)	SW-25	554	n/a	4/14/2025	69.3	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Sulfate (mg/L)	SW-26	554	n/a	4/14/2025	45.5	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Vanadium (mg/L)	SW-26	0.00682	n/a	4/14/2025	0.00637	No	14	78.57	n/a	0.007852	NP Inter (NDs) 1 of 2
Zinc (mg/L)	SW-26	0.0312	n/a	4/14/2025	0.0207	No	14	92.86	n/a	0.007852	NP Inter (NDs) 1 of 2

Interwell Prediction Limits - Surface Water Locations (September 2025) - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/10/2025, 3:28 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	**SW-26**	**0.00367**	**n/a**	**9/10/2025**	**0.0489**	**Yes**	**14**	**78.57**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**SW-24**	**6.67**	**n/a**	**9/10/2025**	**8.09**	**Yes**	**15**	**73.33**	**n/a**	**0.006934**	**NP Inter (NDs) 1 of 2**
Calcium (mg/L)	**SW-24**	**221**	**n/a**	**9/10/2025**	**227**	**Yes**	**15**	**0**	**n/a**	**0.006934**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**SW-26**	**23.24**	**n/a**	**9/10/2025**	**24.8**	**Yes**	**15**	**0**	**No**	**0.0006269**	**Param Inter 1 of 2**
Magnesium (mg/L)	**SW-24**	**73.3**	**n/a**	**9/10/2025**	**95.8**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Molybdenum (mg/L)	**SW-25**	**0.00637**	**n/a**	**9/10/2025**	**0.00772**	**Yes**	**14**	**92.86**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Molybdenum (mg/L)	**SW-26**	**0.00637**	**n/a**	**9/10/2025**	**0.0427**	**Yes**	**14**	**92.86**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Strontium (mg/L)	**SW-24**	**0.285**	**n/a**	**9/10/2025**	**0.368**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Strontium (mg/L)	**SW-26**	**0.285**	**n/a**	**9/10/2025**	**0.387**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**SW-24**	**554**	**n/a**	**9/10/2025**	**594**	**Yes**	**15**	**0**	**n/a**	**0.006934**	**NP Inter (normality) 1 of 2**

Interwell Prediction Limits - Surface Water Locations (September 2025) - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/10/2025, 3:28 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Aluminum (mg/L)	SW-25	1.28	n/a	9/10/2025	0.05ND	No	14	21.43	n/a	0.007852	NP Inter (normality) 1 of 2
Aluminum (mg/L)	SW-26	1.28	n/a	9/10/2025	0.05ND	No	14	21.43	n/a	0.007852	NP Inter (normality) 1 of 2
Arsenic (mg/L)	**SW-26**	**0.00367**	**n/a**	**9/10/2025**	**0.0489**	**Yes**	**14**	**78.57**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Barium (mg/L)	SW-24	0.216	n/a	9/10/2025	0.0244	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Barium (mg/L)	SW-25	0.216	n/a	9/10/2025	0.0579	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Barium (mg/L)	SW-26	0.216	n/a	9/10/2025	0.0865	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Beryllium (mg/L)	n/a	0.001	n/a	n/a	4 future	n/a	14	100	n/a	0.007852	NP Inter (NDs) 1 of 2
Boron (mg/L)	**SW-24**	**6.67**	**n/a**	**9/10/2025**	**8.09**	**Yes**	**15**	**73.33**	**n/a**	**0.006934**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	SW-25	6.67	n/a	9/10/2025	5.25	No	15	73.33	n/a	0.006934	NP Inter (NDs) 1 of 2
Boron (mg/L)	SW-26	6.67	n/a	9/10/2025	5.19	No	15	73.33	n/a	0.006934	NP Inter (NDs) 1 of 2
Calcium (mg/L)	**SW-24**	**221**	**n/a**	**9/10/2025**	**227**	**Yes**	**15**	**0**	**n/a**	**0.006934**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	SW-25	221	n/a	9/10/2025	159	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Calcium (mg/L)	SW-26	221	n/a	9/10/2025	69.3	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Chloride (mg/L)	SW-24	23.24	n/a	9/10/2025	16.3	No	15	0	No	0.0006269	Param Inter 1 of 2
Chloride (mg/L)	SW-25	23.24	n/a	9/10/2025	21	No	15	0	No	0.0006269	Param Inter 1 of 2
Chloride (mg/L)	**SW-26**	**23.24**	**n/a**	**9/10/2025**	**24.8**	**Yes**	**15**	**0**	**No**	**0.0006269**	**Param Inter 1 of 2**
Cobalt (mg/L)	SW-25	0.00116	n/a	9/10/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Cobalt (mg/L)	SW-26	0.00116	n/a	9/10/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Copper (mg/L)	SW-26	0.005	n/a	9/10/2025	0.005ND	No	13	100	n/a	0.008777	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	SW-24	1	n/a	9/10/2025	0.187	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	SW-25	1	n/a	9/10/2025	0.231	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	SW-26	1	n/a	9/10/2025	0.357	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Iron (mg/L)	SW-24	1.888	n/a	9/10/2025	0.05ND	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Iron (mg/L)	SW-25	1.888	n/a	9/10/2025	0.05ND	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Iron (mg/L)	SW-26	1.888	n/a	9/10/2025	0.191	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Lead (mg/L)	SW-25	0.00258	n/a	9/10/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Lead (mg/L)	SW-26	0.00258	n/a	9/10/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Magnesium (mg/L)	**SW-24**	**73.3**	**n/a**	**9/10/2025**	**95.8**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Magnesium (mg/L)	SW-25	73.3	n/a	9/10/2025	53.3	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Magnesium (mg/L)	SW-26	73.3	n/a	9/10/2025	29.1	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Manganese (mg/L)	SW-24	0.912	n/a	9/10/2025	0.005ND	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Manganese (mg/L)	SW-25	0.912	n/a	9/10/2025	0.0219	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Manganese (mg/L)	SW-26	0.912	n/a	9/10/2025	0.225	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Molybdenum (mg/L)	SW-24	0.00637	n/a	9/10/2025	0.002ND	No	14	92.86	n/a	0.007852	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	**SW-25**	**0.00637**	**n/a**	**9/10/2025**	**0.00772**	**Yes**	**14**	**92.86**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Molybdenum (mg/L)	**SW-26**	**0.00637**	**n/a**	**9/10/2025**	**0.0427**	**Yes**	**14**	**92.86**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Nickel (mg/L)	n/a	0.005	n/a	n/a	4 future	n/a	14	100	n/a	0.007852	NP Inter (NDs) 1 of 2
Selenium (mg/L)	SW-26	0.005	n/a	9/10/2025	0.005ND	No	14	100	n/a	0.007852	NP Inter (NDs) 1 of 2
Strontium (mg/L)	**SW-24**	**0.285**	**n/a**	**9/10/2025**	**0.368**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Strontium (mg/L)	SW-25	0.285	n/a	9/10/2025	0.223	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Strontium (mg/L)	**SW-26**	**0.285**	**n/a**	**9/10/2025**	**0.387**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**SW-24**	**554**	**n/a**	**9/10/2025**	**594**	**Yes**	**15**	**0**	**n/a**	**0.006934**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	SW-25	554	n/a	9/10/2025	344	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Sulfate (mg/L)	SW-26	554	n/a	9/10/2025	452	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Vanadium (mg/L)	SW-26	0.00682	n/a	9/10/2025	0.005ND	No	14	78.57	n/a	0.007852	NP Inter (NDs) 1 of 2
Zinc (mg/L)	SW-26	0.0312	n/a	9/10/2025	0.02ND	No	14	92.86	n/a	0.007852	NP Inter (NDs) 1 of 2

Trend Tests - Surface Water Prediction Limit Exceedances - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/10/2025, 3:41 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**SW-24**	**-0.3444**	**-85**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	**SW-24**	**-4.324**	**-64**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Trend Tests - Surface Water Prediction Limit Exceedances - All Results

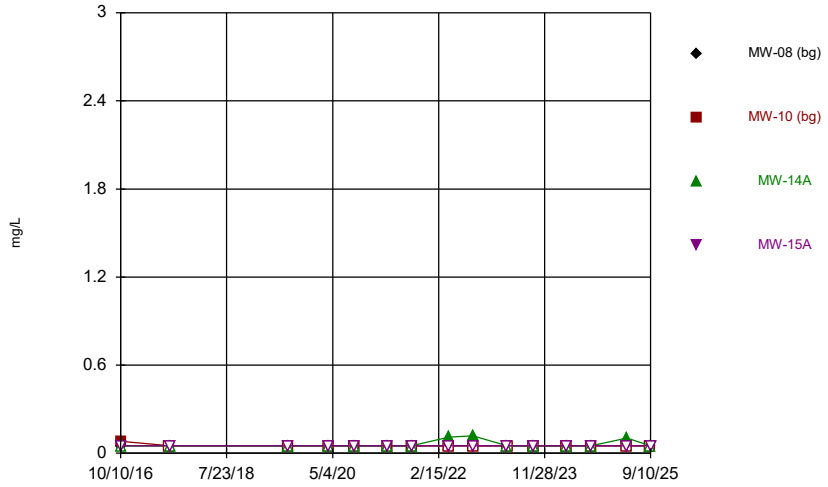
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/10/2025, 3:41 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Arsenic (mg/L)	SW-22 (bg)	0	4	48	No	14	78.57	n/a	n/a	0.01	NP
Arsenic (mg/L)	SW-26	-0.000433	-9	-63	No	17	17.65	n/a	n/a	0.01	NP
Boron (mg/L)	SW-22 (bg)	0	-34	-53	No	15	73.33	n/a	n/a	0.01	NP
Boron (mg/L)	**SW-24**	**-0.3444**	**-85**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	SW-22 (bg)	-1.292	-19	-53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	**SW-24**	**-4.324**	**-64**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	SW-22 (bg)	0.6288	27	53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	SW-26	0.8579	56	68	No	18	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	SW-22 (bg)	0	8	48	No	14	71.43	n/a	n/a	0.01	NP
Cobalt (mg/L)	SW-26	0	11	63	No	17	82.35	n/a	n/a	0.01	NP
Copper (mg/L)	SW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Copper (mg/L)	SW-26	0	14	63	No	17	94.12	n/a	n/a	0.01	NP
Lead (mg/L)	SW-22 (bg)	0	0	48	No	14	71.43	n/a	n/a	0.01	NP
Lead (mg/L)	SW-26	0	15	63	No	17	88.24	n/a	n/a	0.01	NP
Magnesium (mg/L)	SW-22 (bg)	-0.3358	-11	-48	No	14	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	SW-24	-1.055	-34	-58	No	16	0	n/a	n/a	0.01	NP
Molybdenum (mg/L)	SW-22 (bg)	0	5	48	No	14	92.86	n/a	n/a	0.01	NP
Molybdenum (mg/L)	SW-25	0	15	58	No	16	87.5	n/a	n/a	0.01	NP
Molybdenum (mg/L)	SW-26	-0.00001275	-1	-63	No	17	11.76	n/a	n/a	0.01	NP
Selenium (mg/L)	SW-22 (bg)	0	0	48	No	14	100	n/a	n/a	0.01	NP
Selenium (mg/L)	SW-26	0	14	63	No	17	94.12	n/a	n/a	0.01	NP
Strontium (mg/L)	SW-22 (bg)	-0.003632	-25	-48	No	14	0	n/a	n/a	0.01	NP
Strontium (mg/L)	SW-24	-0.01011	-42	-58	No	16	0	n/a	n/a	0.01	NP
Strontium (mg/L)	SW-26	0.005575	22	63	No	17	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	SW-22 (bg)	-1.657	-36	-53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	SW-24	-18.11	-51	-63	No	17	0	n/a	n/a	0.01	NP

FIGURE A.

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Hollow symbols indicate censored values.

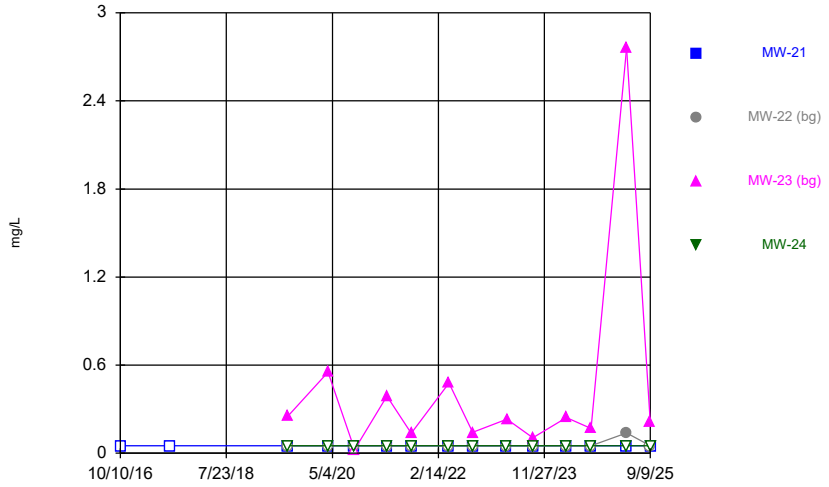
Time Series



Constituent: Aluminum Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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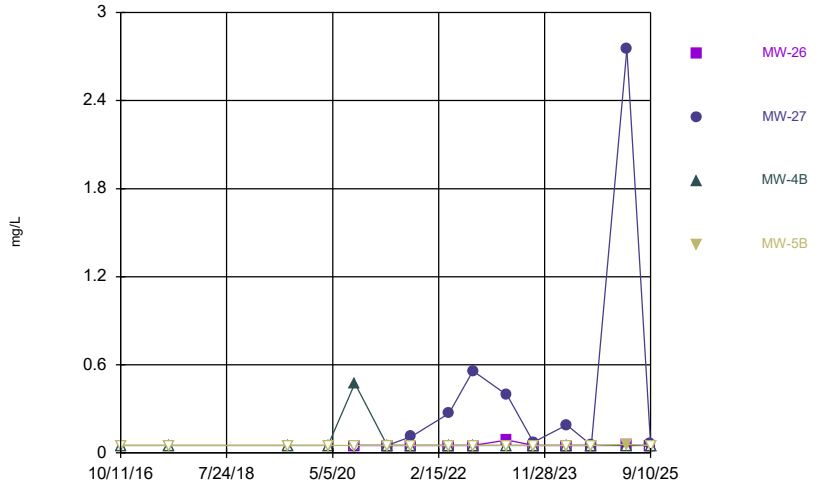
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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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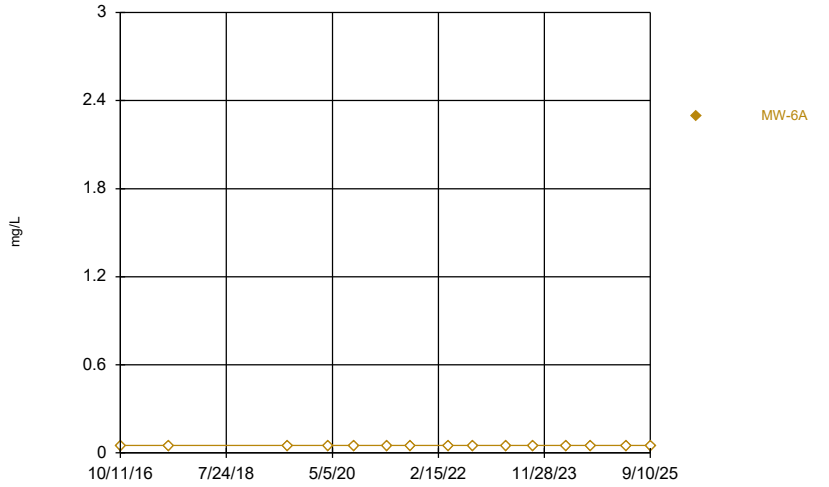
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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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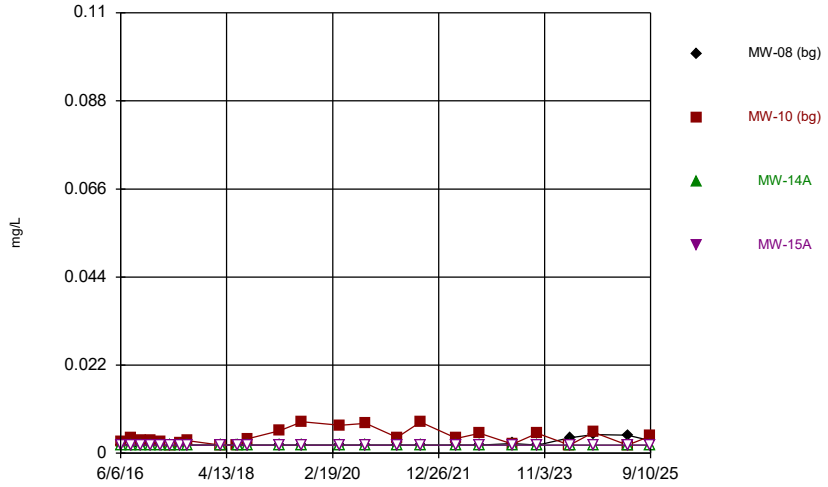
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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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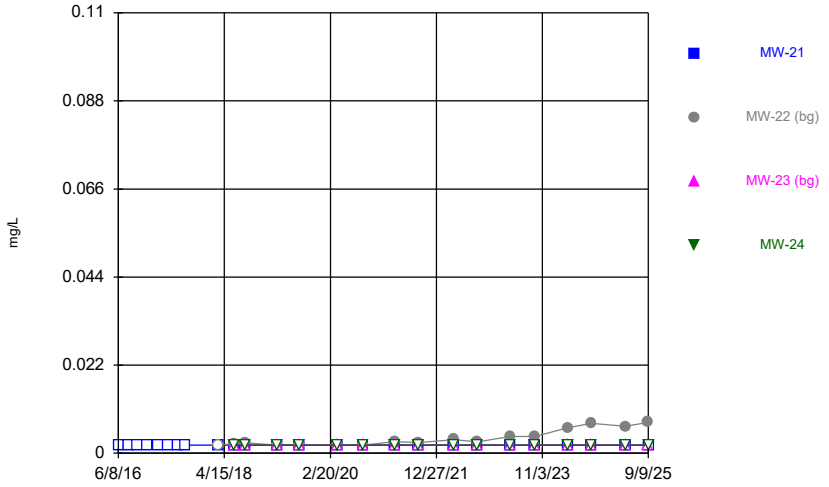
Time Series



Constituent: Arsenic Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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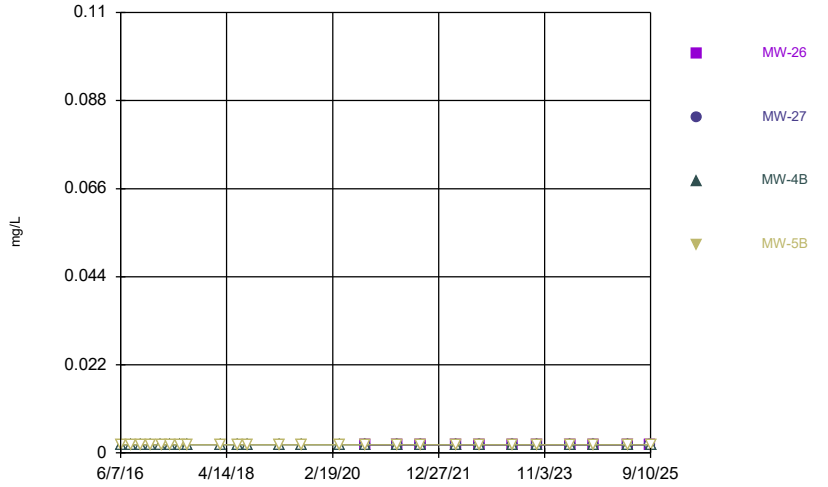
Time Series



Constituent: Arsenic Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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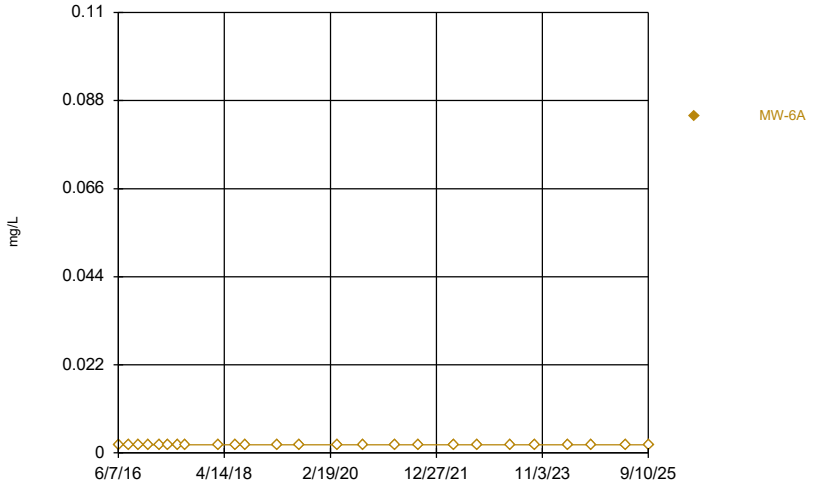
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Constituent: Arsenic Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

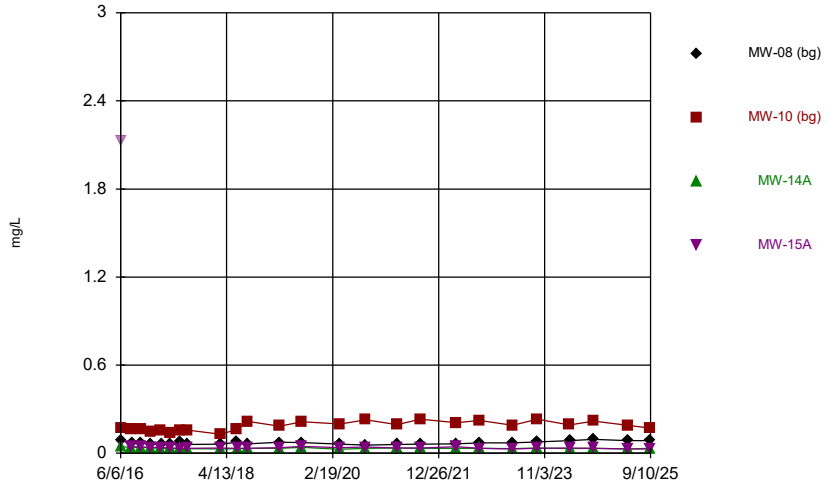
Time Series



Constituent: Arsenic Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

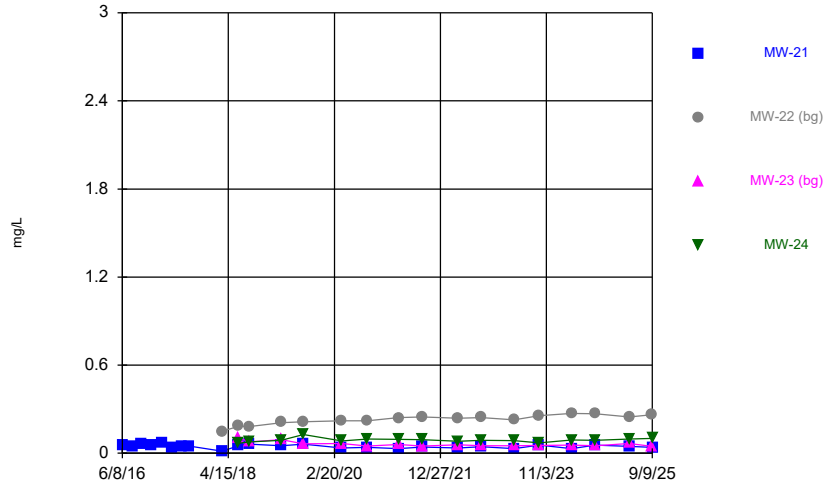
Time Series



Constituent: Barium Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

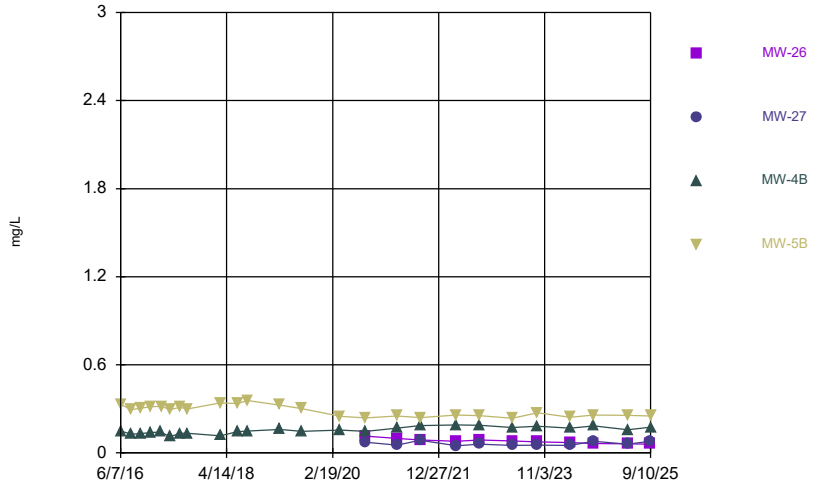
Time Series



Constituent: Barium Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

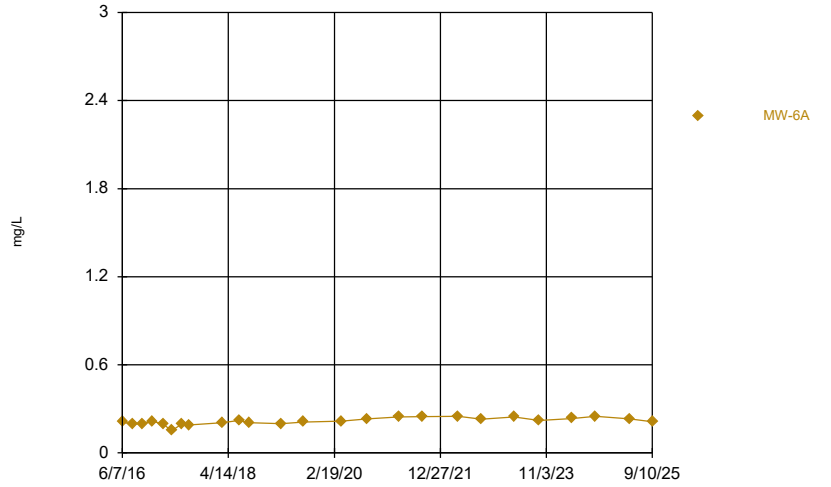
Time Series



Constituent: Barium Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

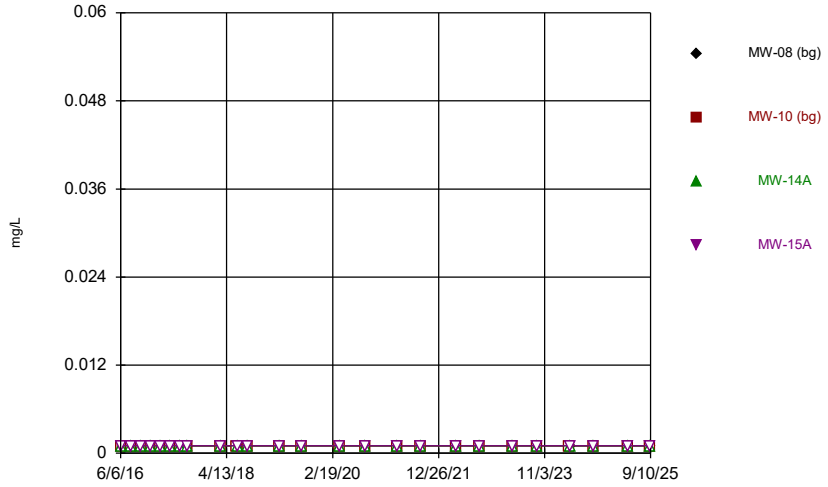
Time Series



Constituent: Barium Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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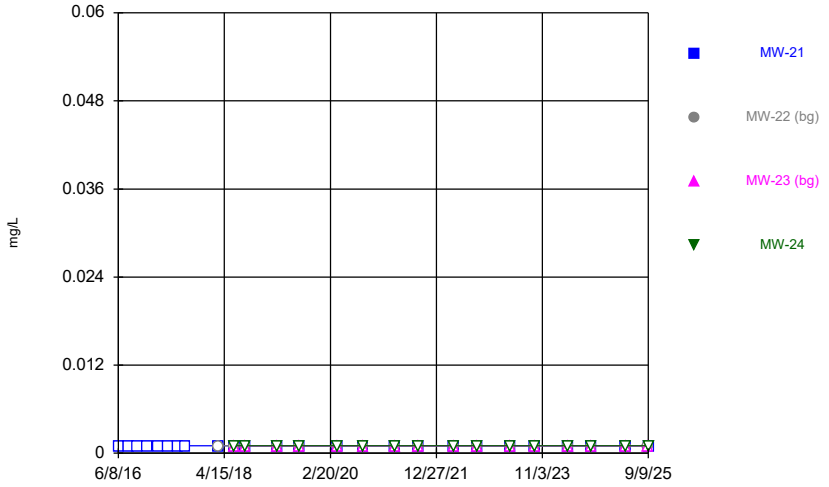
Time Series



Constituent: Beryllium Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

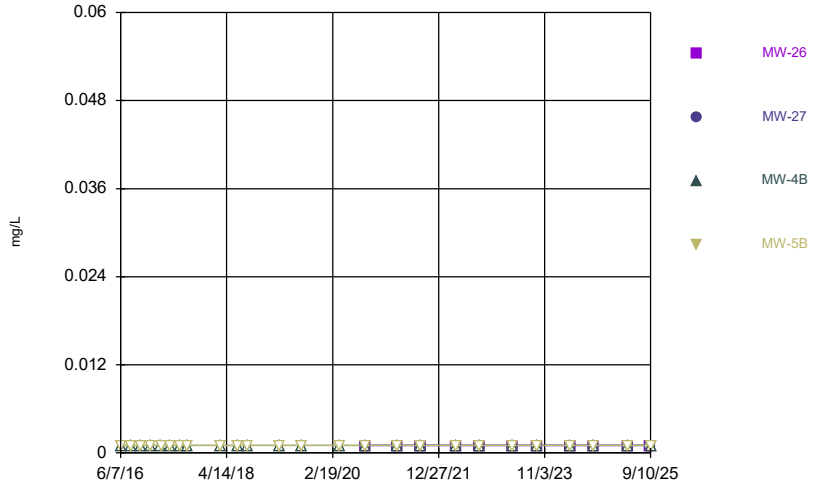
Time Series



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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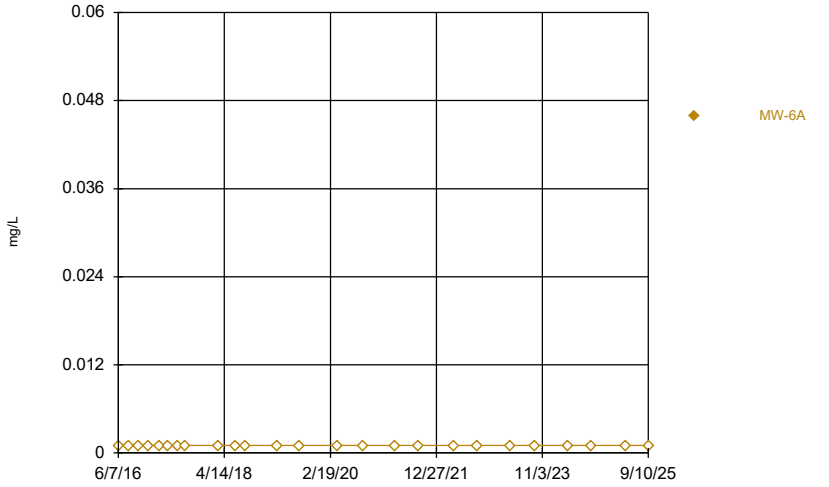
Time Series



Constituent: Beryllium Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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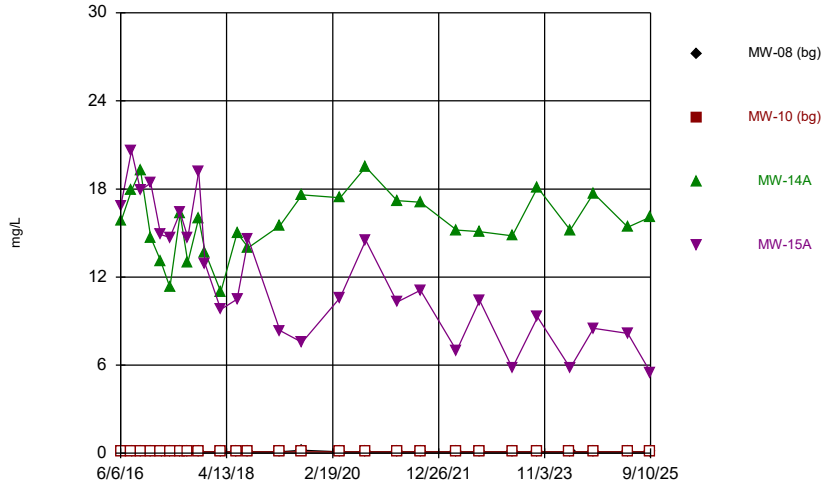
Time Series



Constituent: Beryllium Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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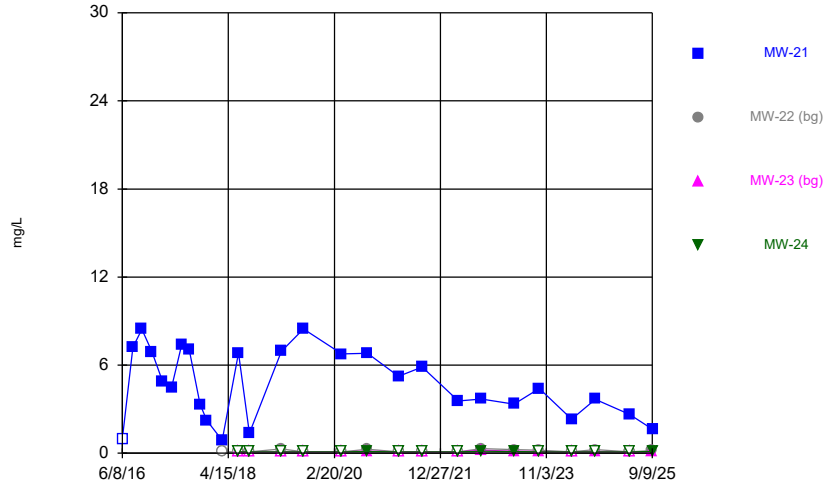
Time Series



Constituent: Boron Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

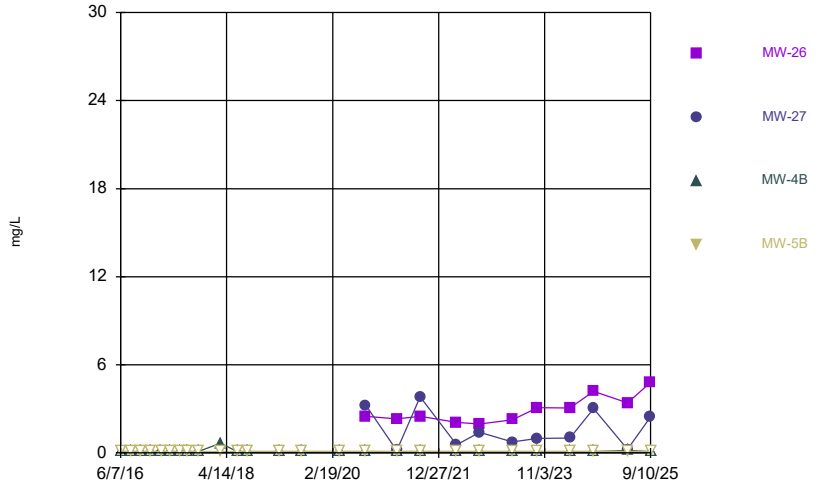
Time Series



Constituent: Boron Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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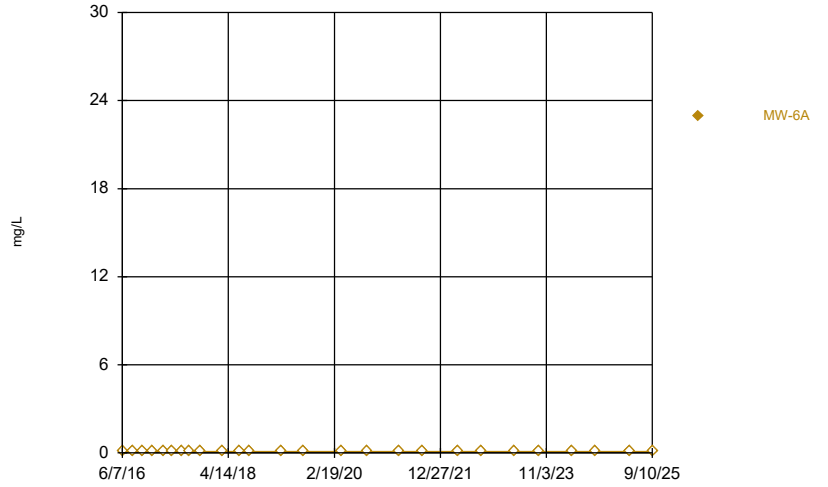
Time Series



Constituent: Boron Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
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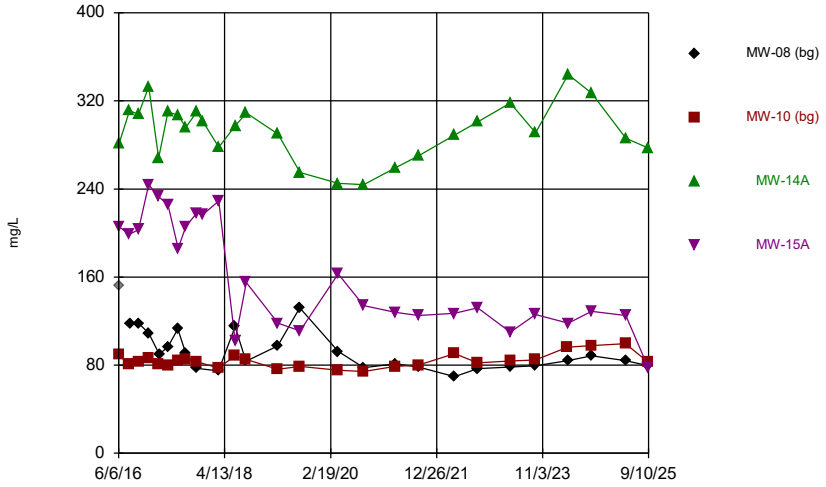
Time Series



Constituent: Boron Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

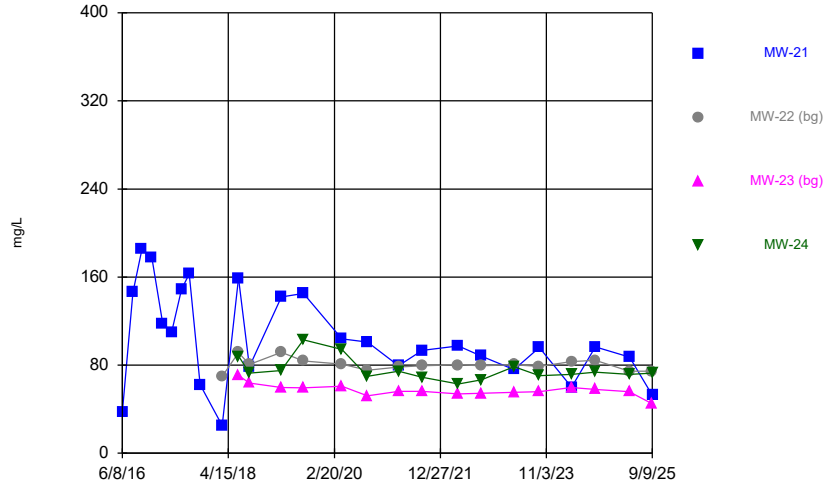
Time Series



Constituent: Calcium Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

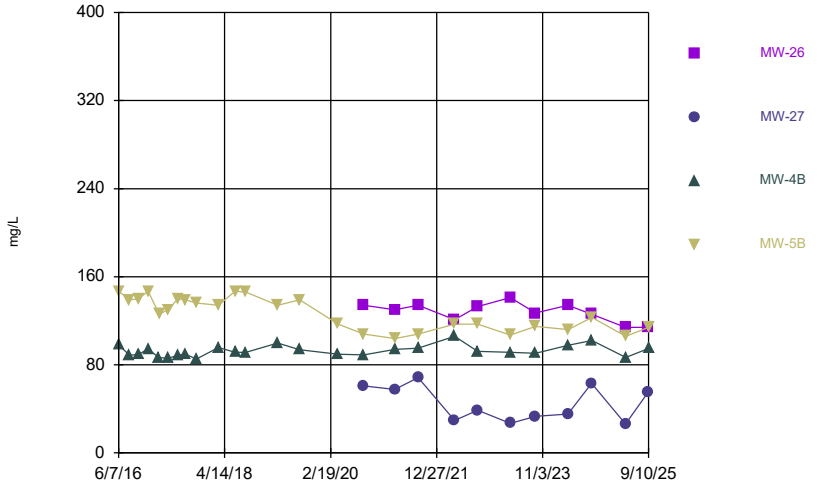
Time Series



Constituent: Calcium Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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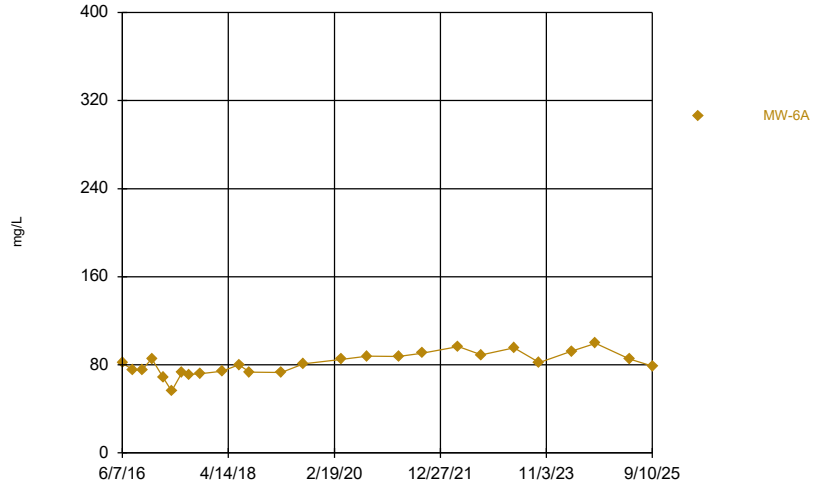
Time Series



Constituent: Calcium Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

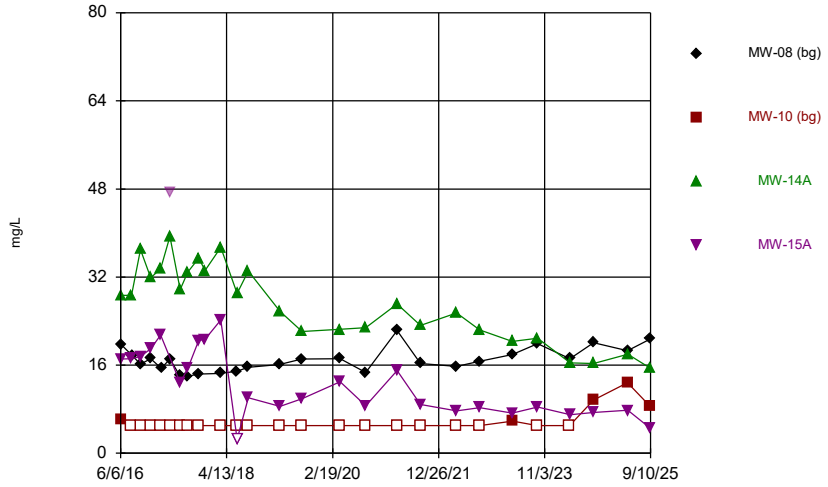
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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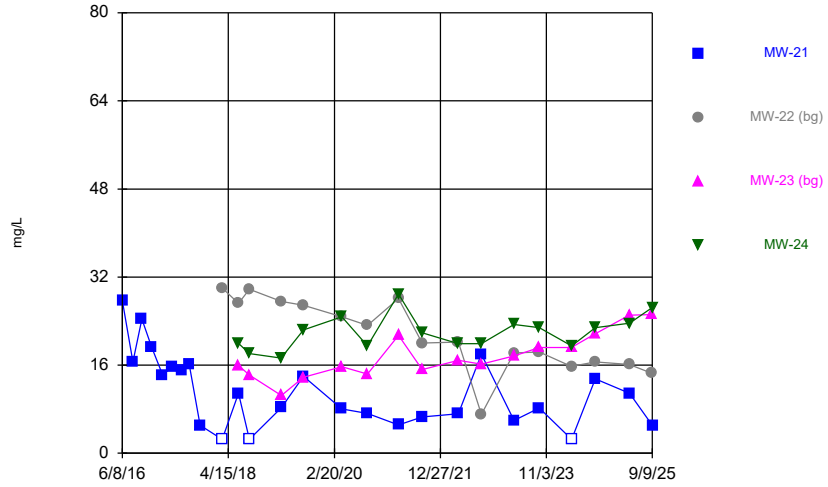
Time Series



Constituent: Chloride Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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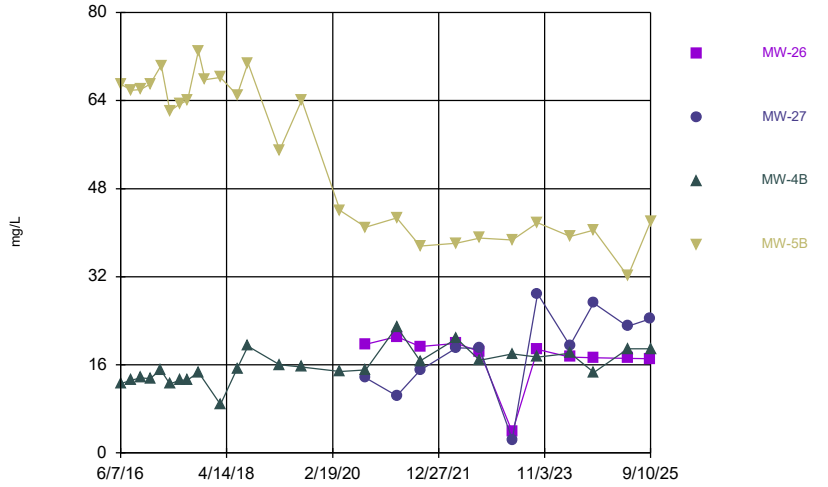
Time Series



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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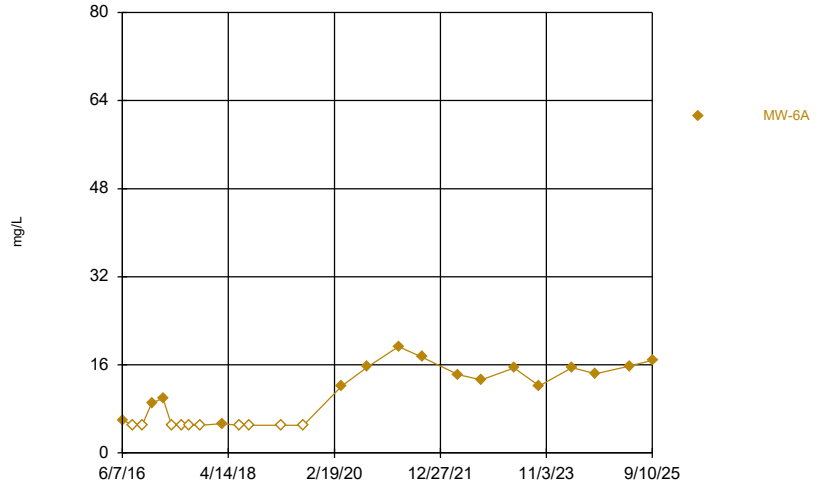
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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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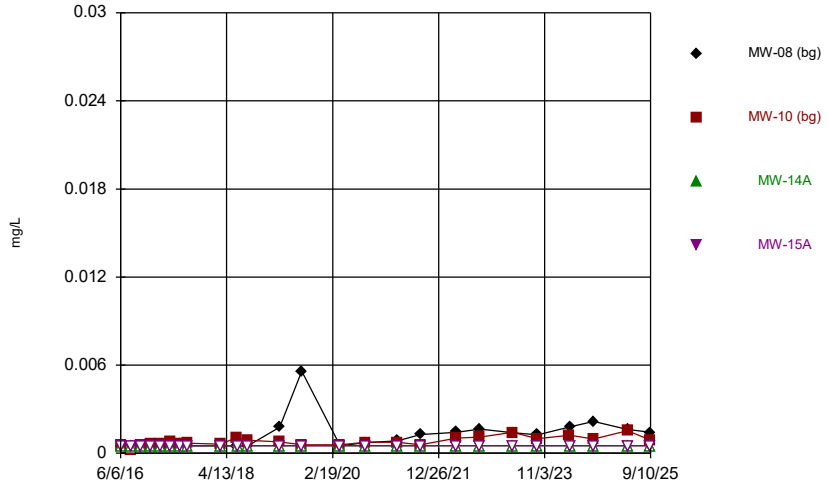
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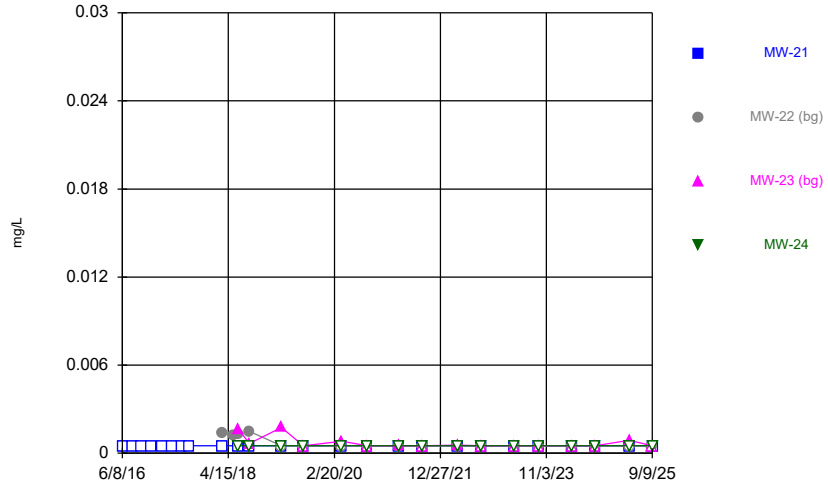
Time Series



Constituent: Cobalt Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
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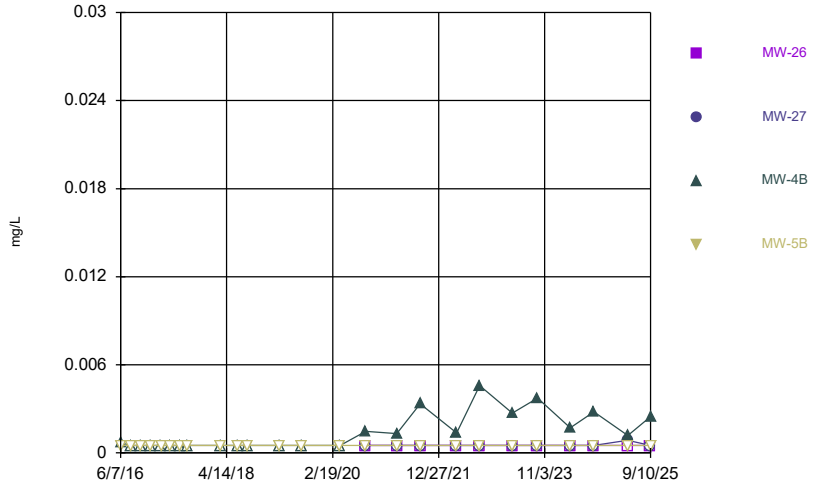
Time Series



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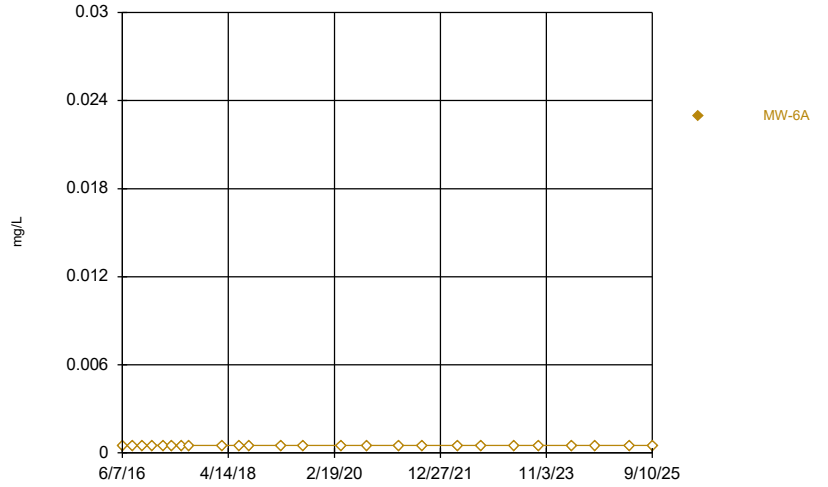
Time Series



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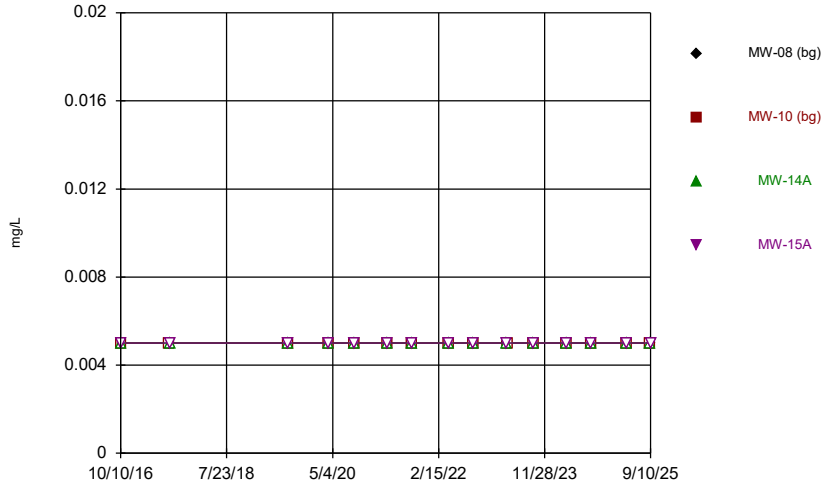
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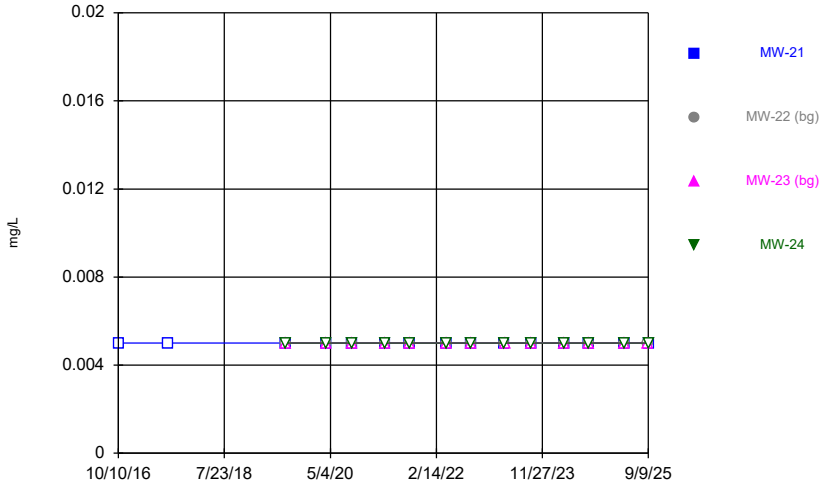
Time Series



Constituent: Copper Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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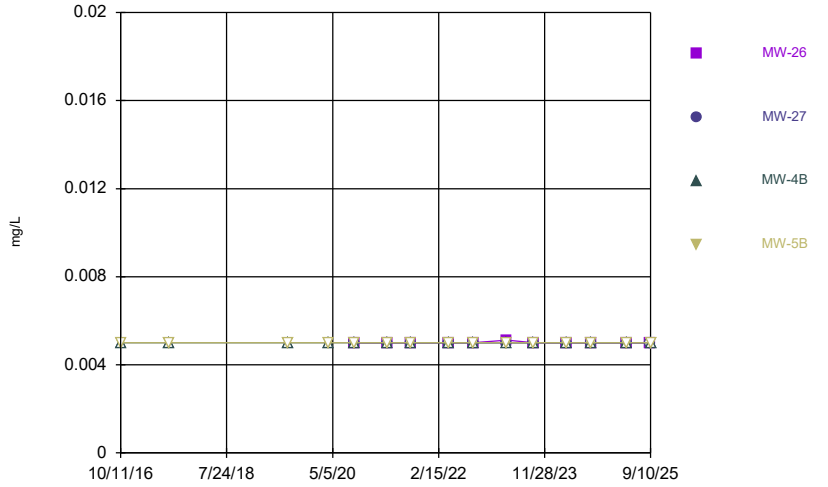
Time Series



Constituent: Copper Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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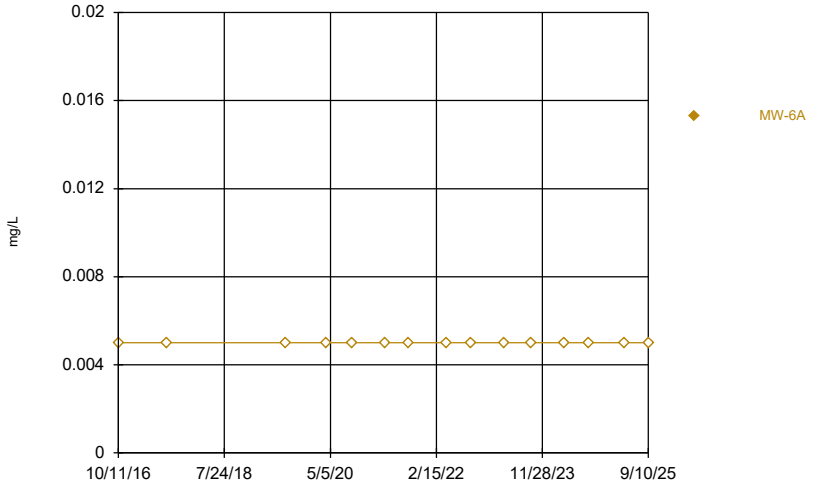
Time Series



Constituent: Copper Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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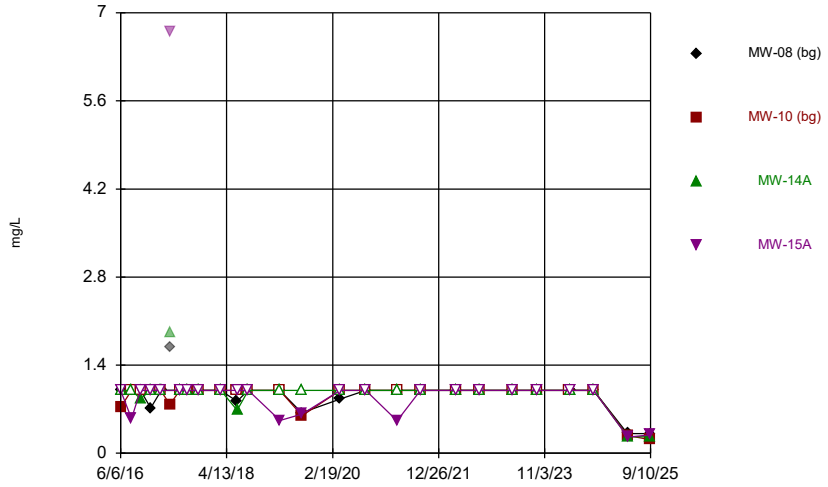
Time Series



Constituent: Copper Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
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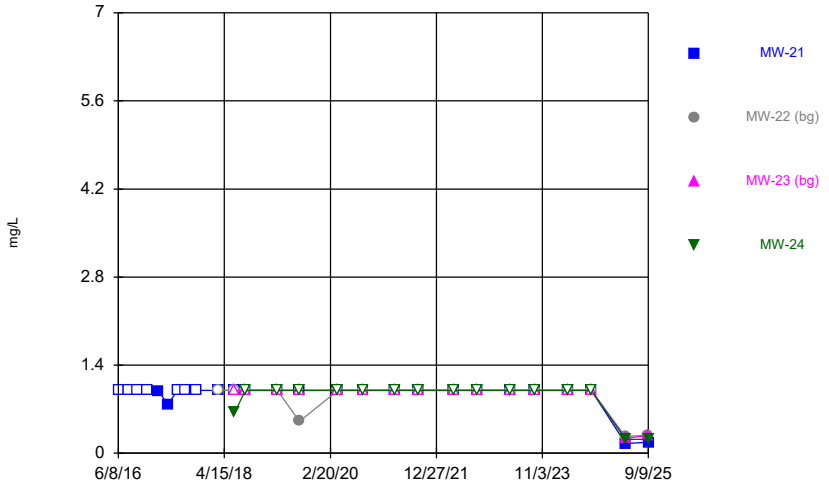
Time Series



Constituent: Fluoride Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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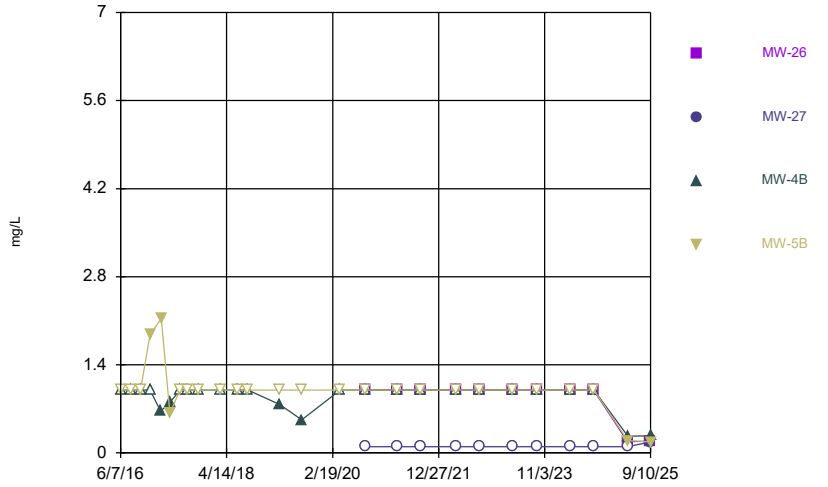
Time Series



Constituent: Fluoride Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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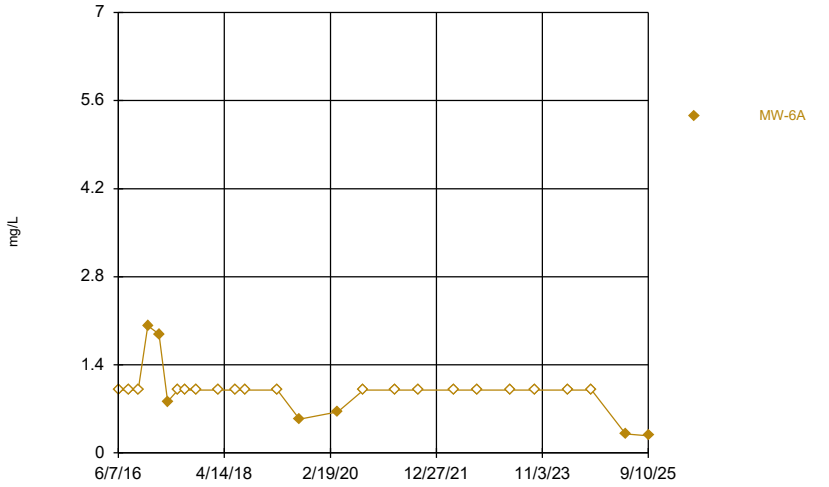
Time Series



Constituent: Fluoride Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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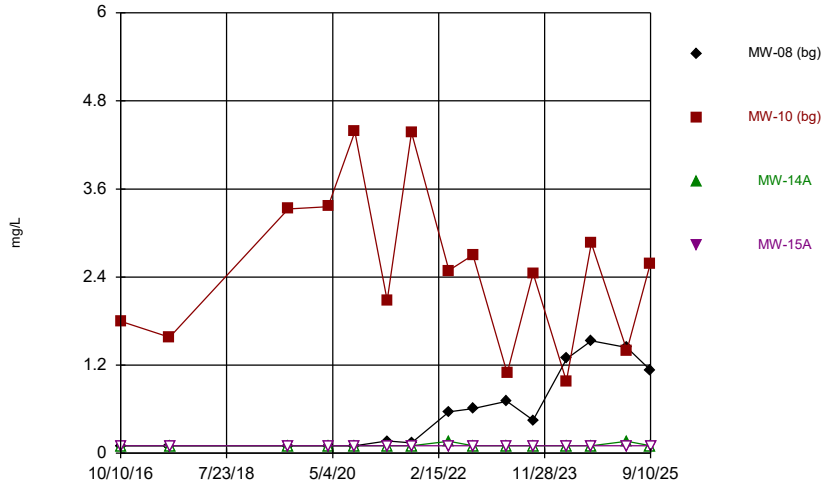
Time Series



Constituent: Fluoride Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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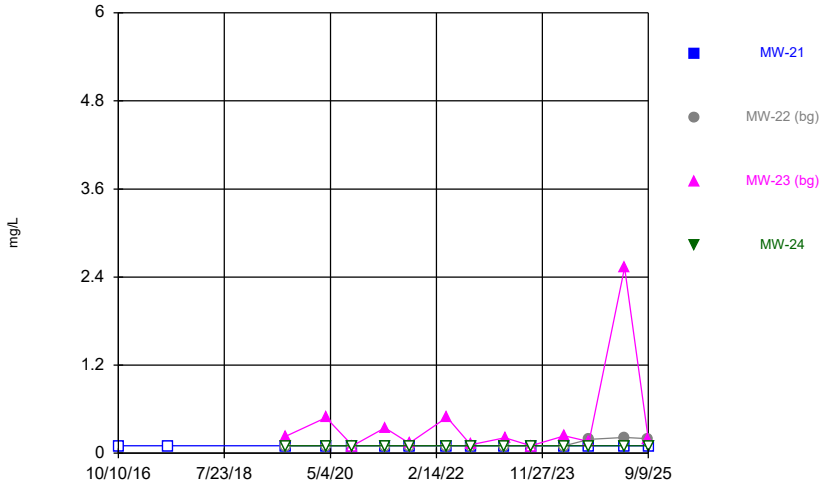
Time Series



Constituent: Iron Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

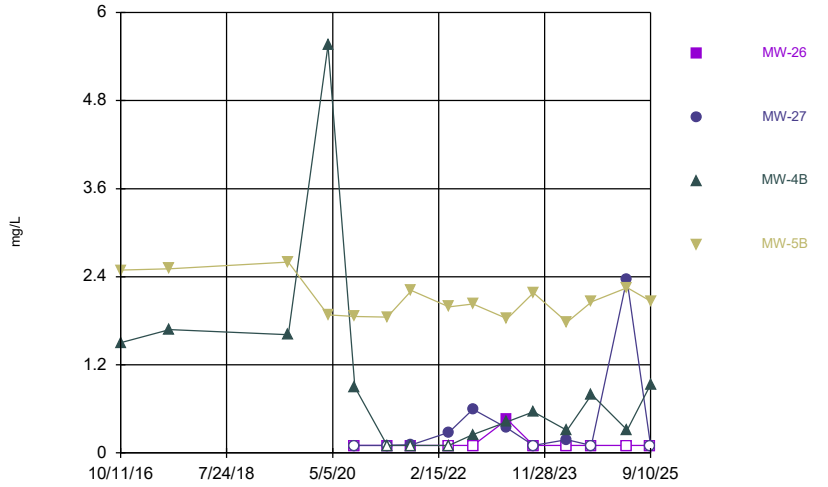
Time Series



Constituent: Iron Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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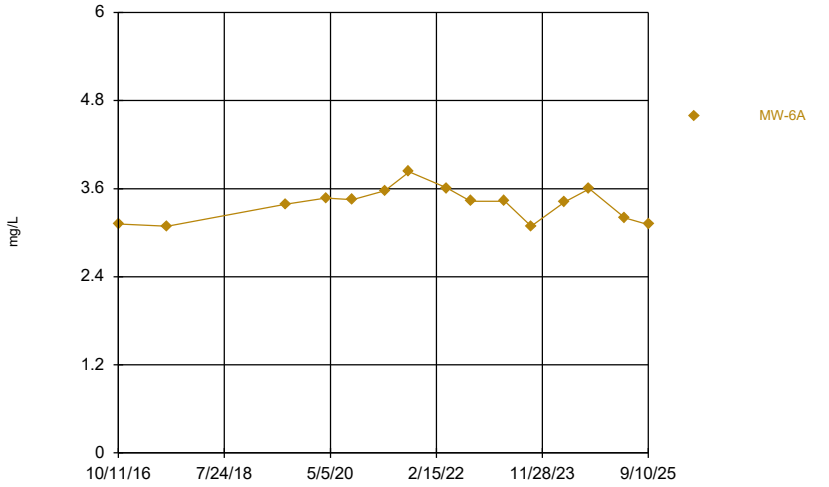
Time Series



Constituent: Iron Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

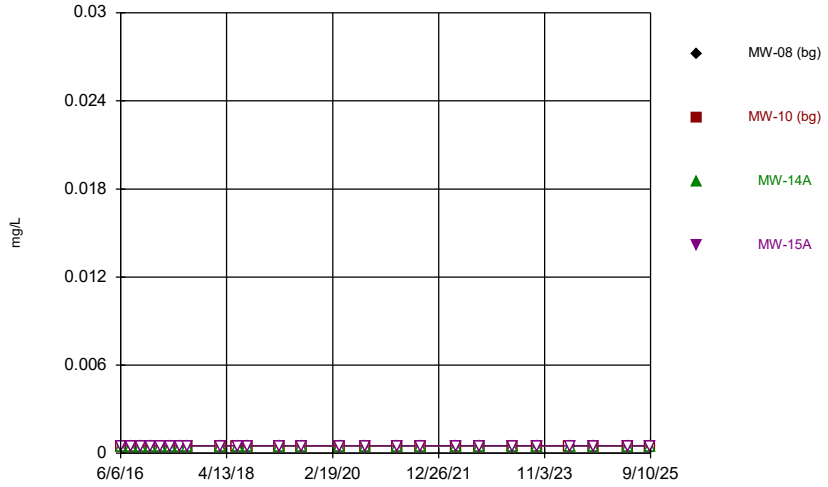
Time Series



Constituent: Iron Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

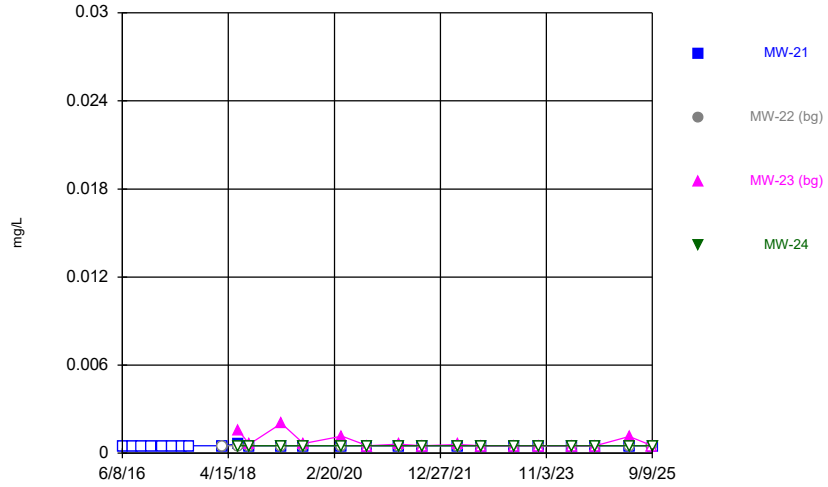
Time Series



Constituent: Lead Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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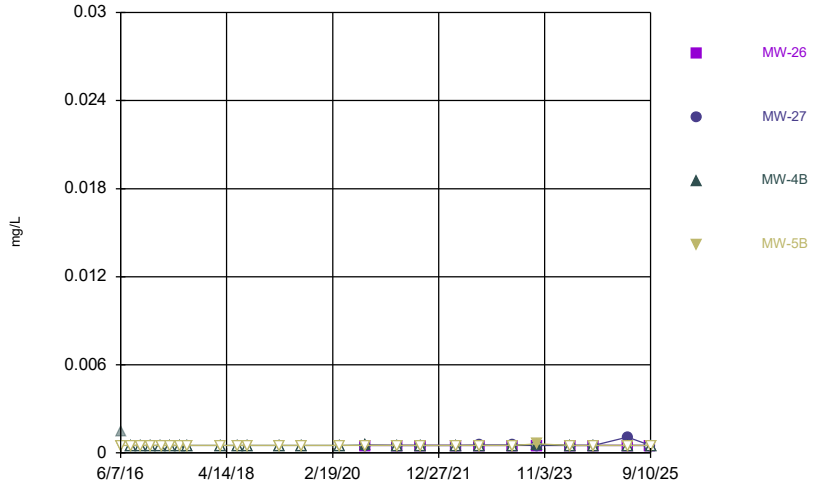
Time Series



Constituent: Lead Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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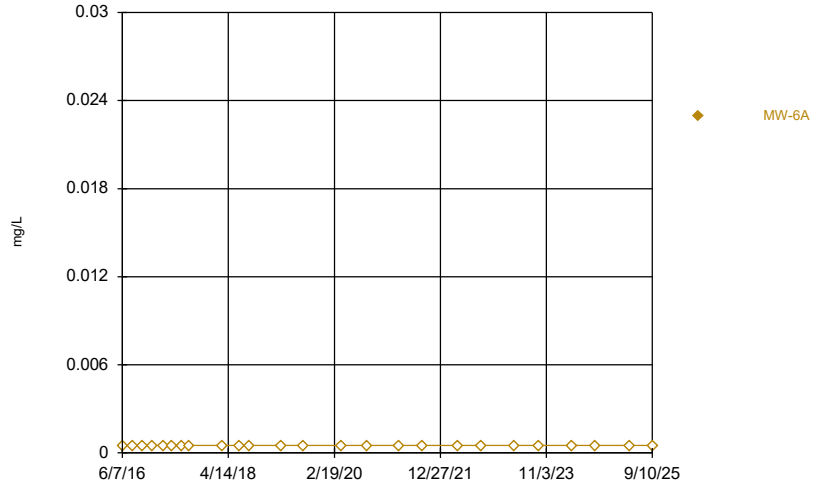
Time Series



Constituent: Lead Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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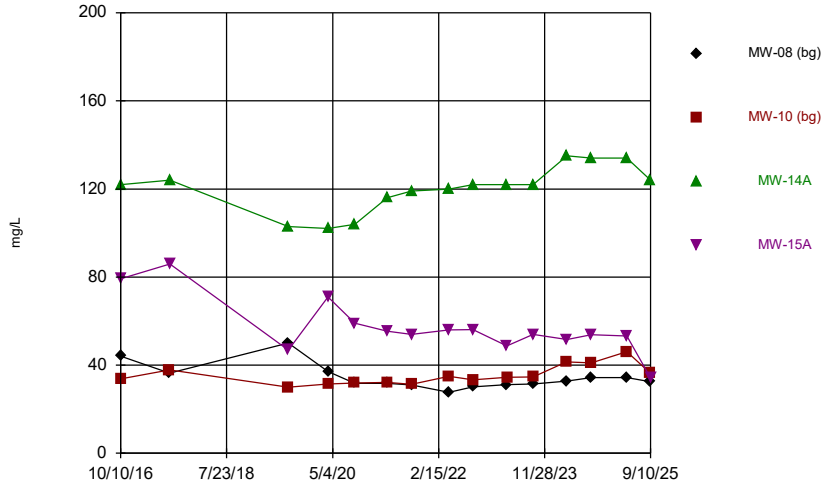
Time Series



Constituent: Lead Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

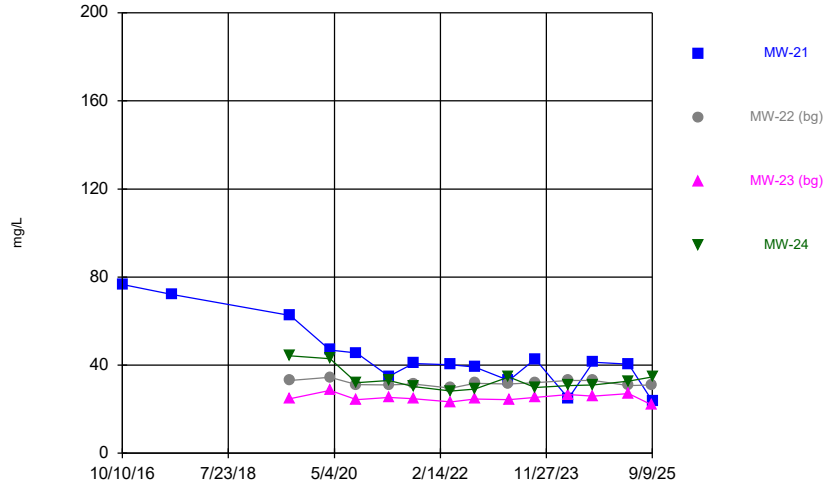
Time Series



Constituent: Magnesium Analysis Run 12/15/2025 3:52 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

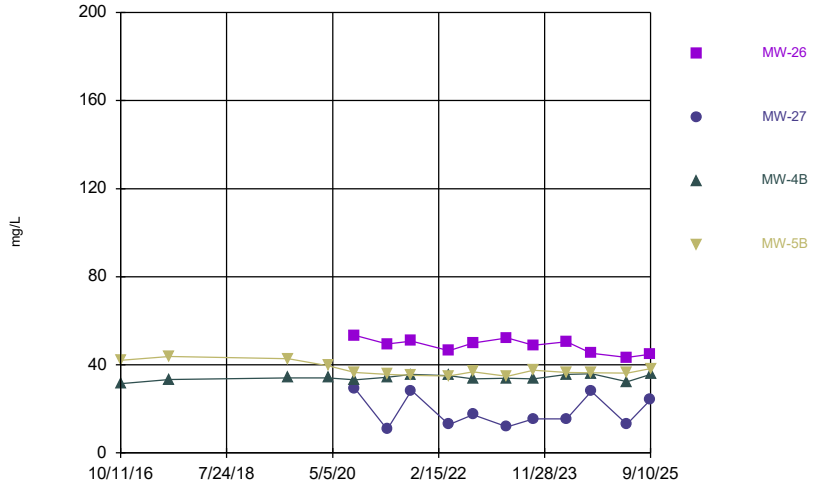
Time Series



Constituent: Magnesium Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

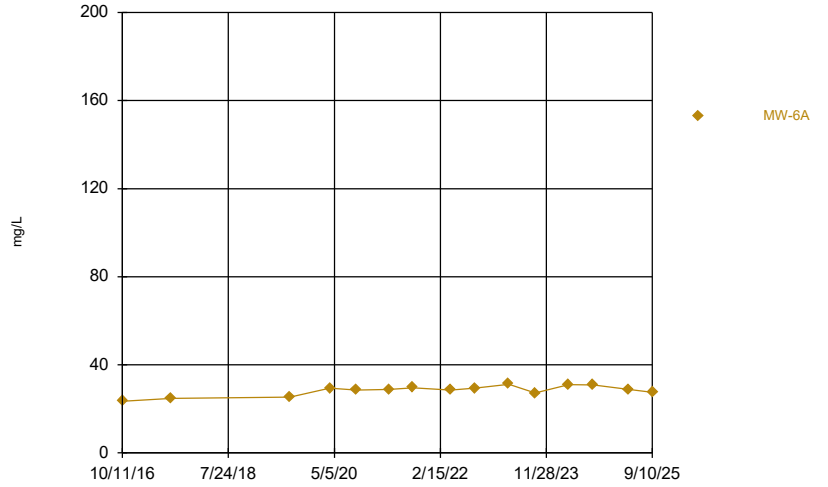
Time Series



Constituent: Magnesium Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

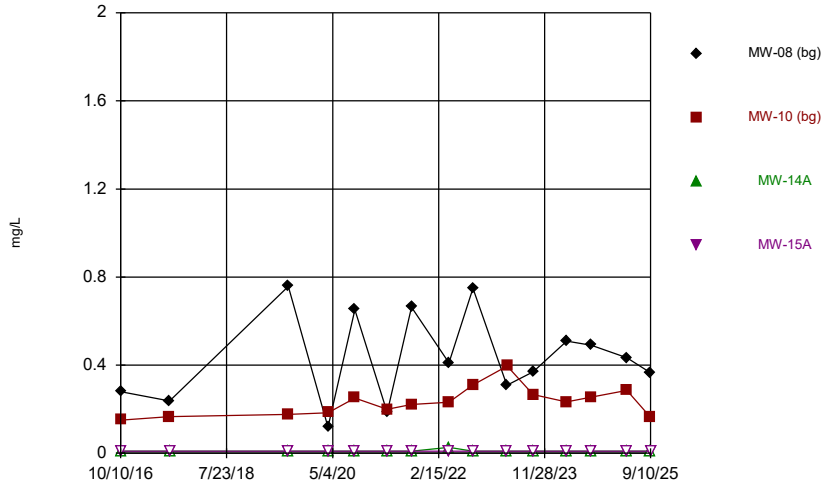
Time Series



Constituent: Magnesium Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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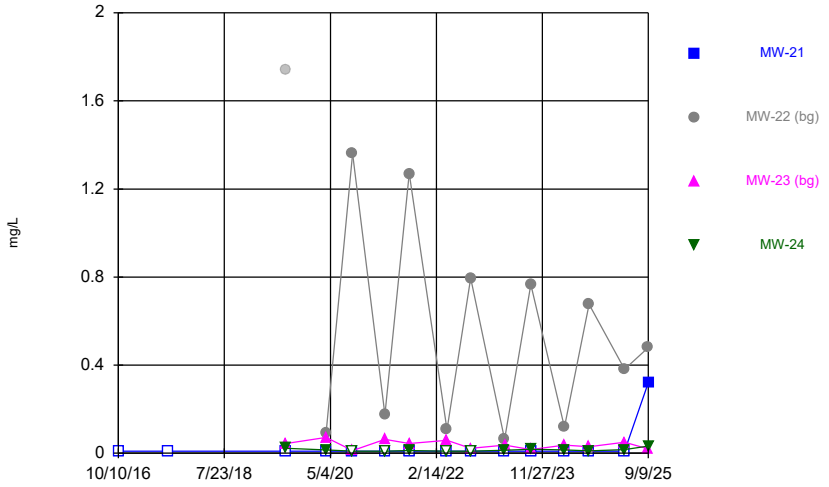
Time Series



Constituent: Manganese Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

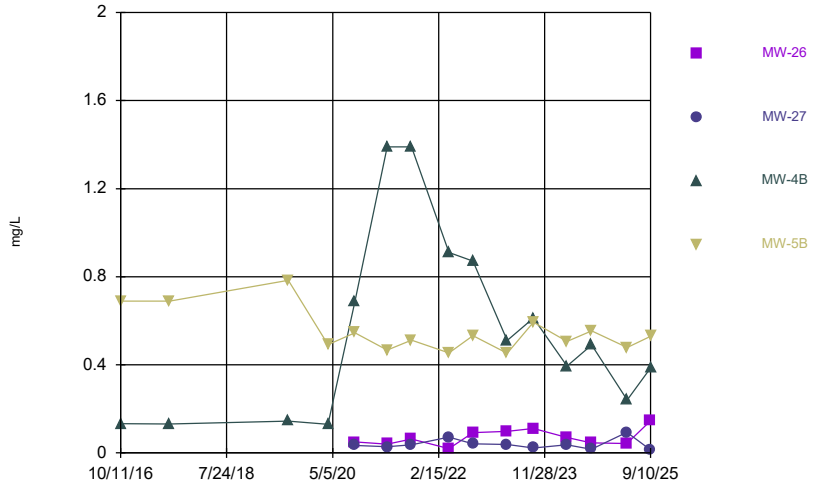
Time Series



Constituent: Manganese Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

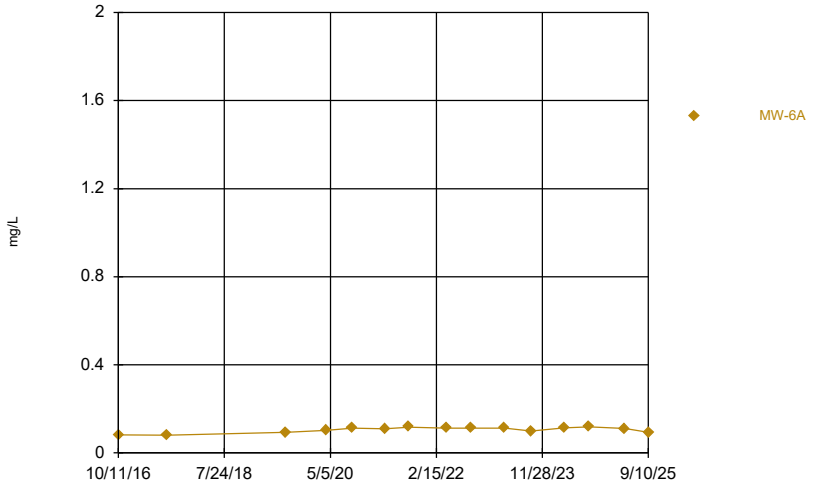
Time Series



Constituent: Manganese Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

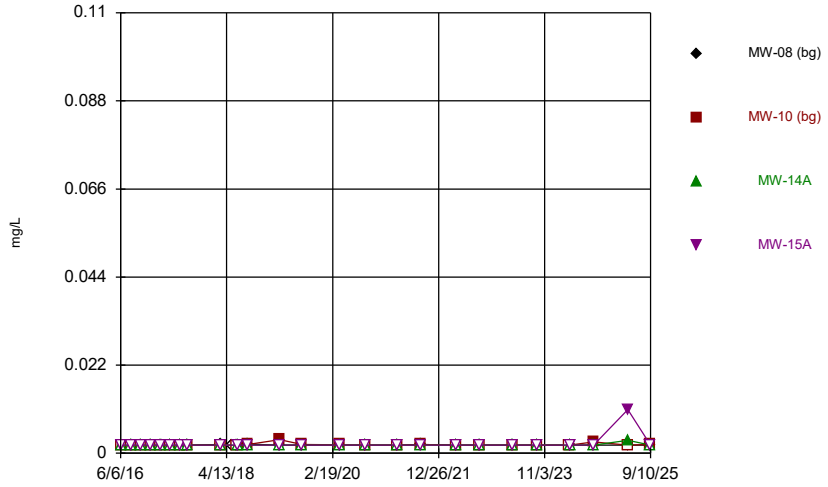
Time Series



Constituent: Manganese Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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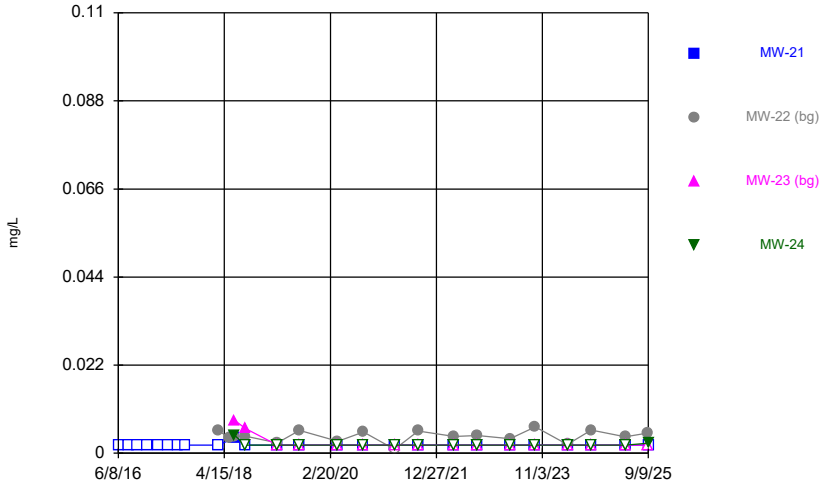
Time Series



Constituent: Molybdenum Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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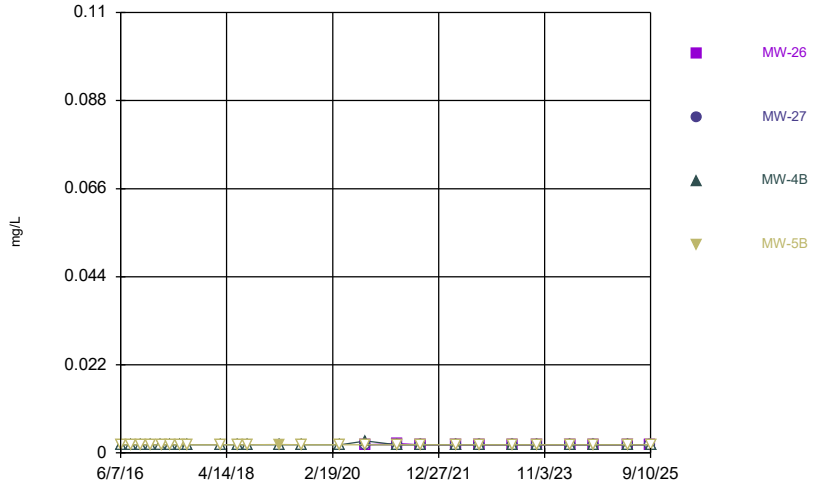
Time Series



Constituent: Molybdenum Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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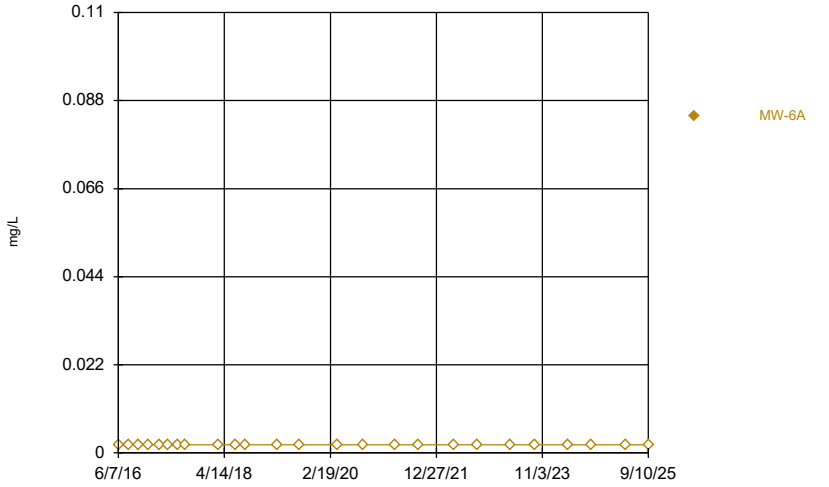
Time Series



Constituent: Molybdenum Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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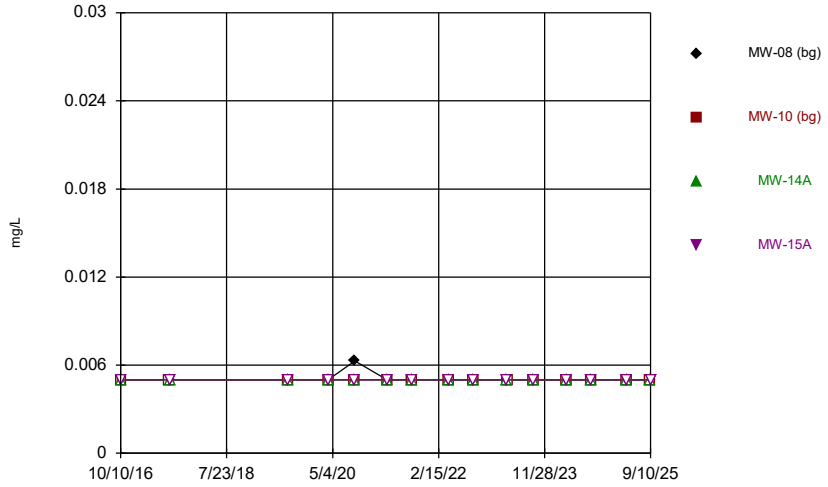
Time Series



Constituent: Molybdenum Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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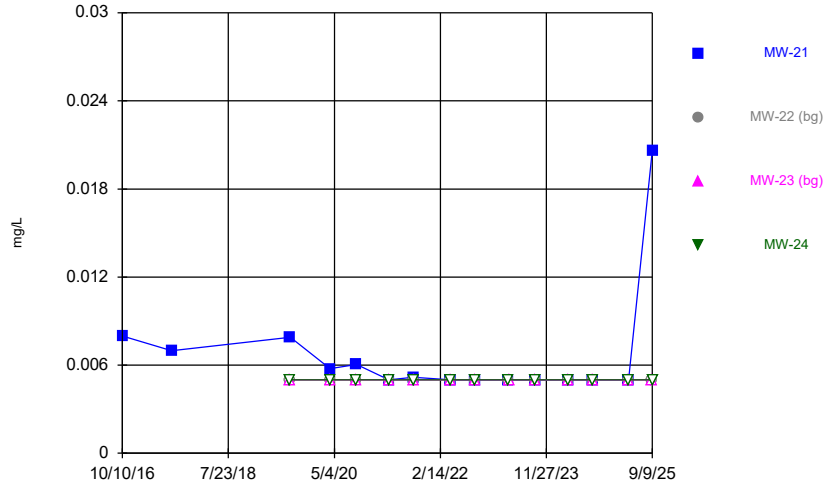
Time Series



Constituent: Nickel Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

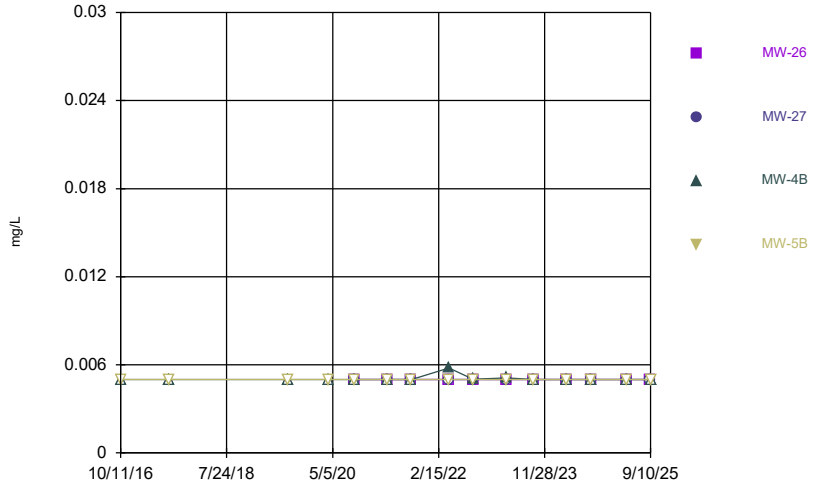
Time Series



Constituent: Nickel Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

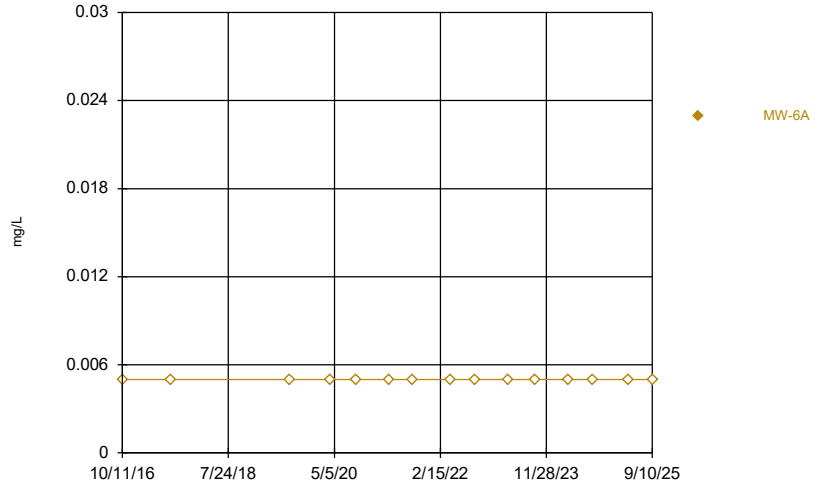
Time Series



Constituent: Nickel Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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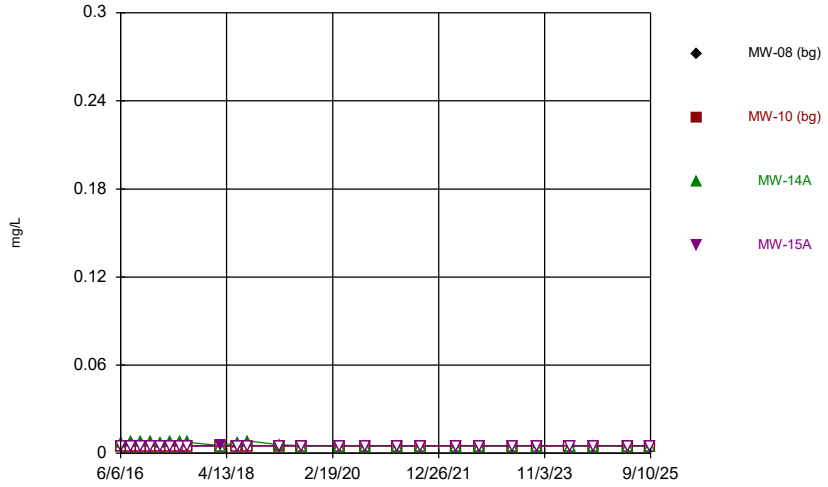
Time Series



Constituent: Nickel Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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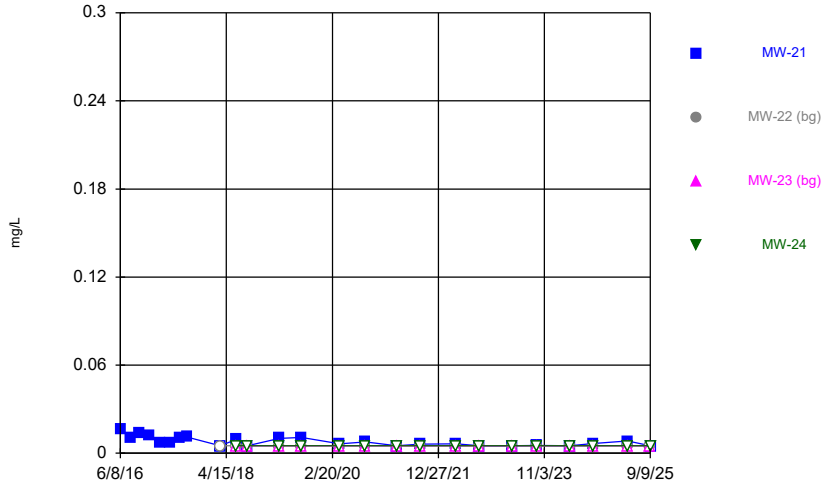
Time Series



Constituent: Selenium Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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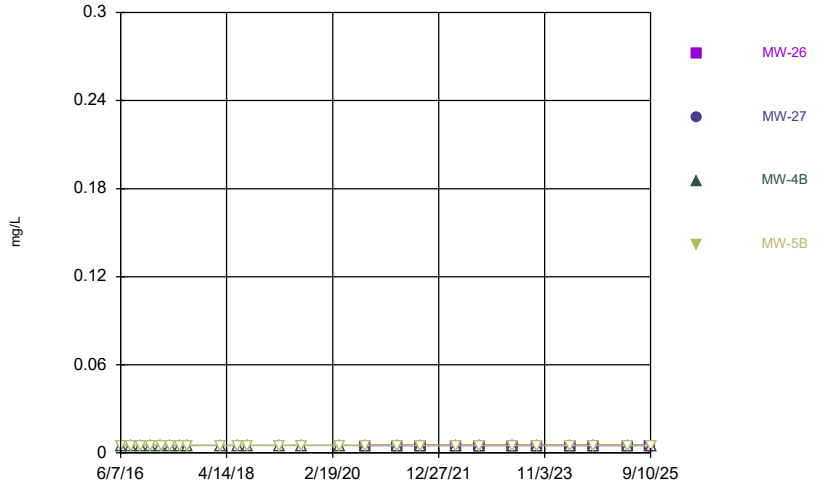
Time Series



Constituent: Selenium Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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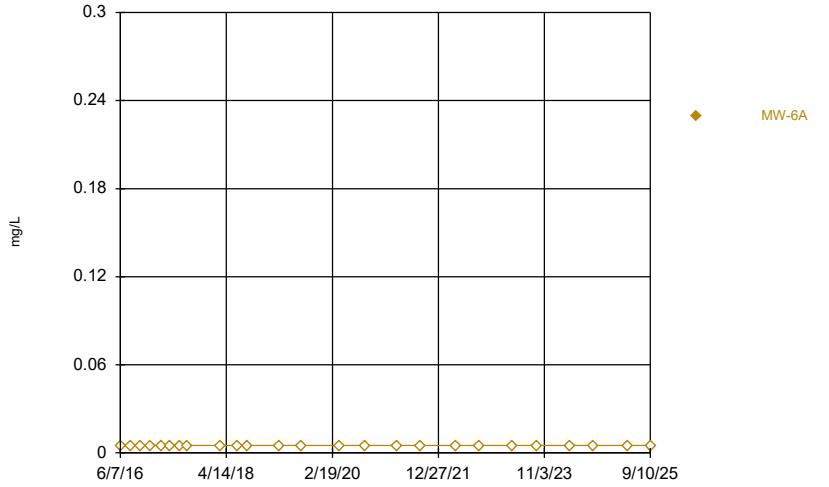
Time Series



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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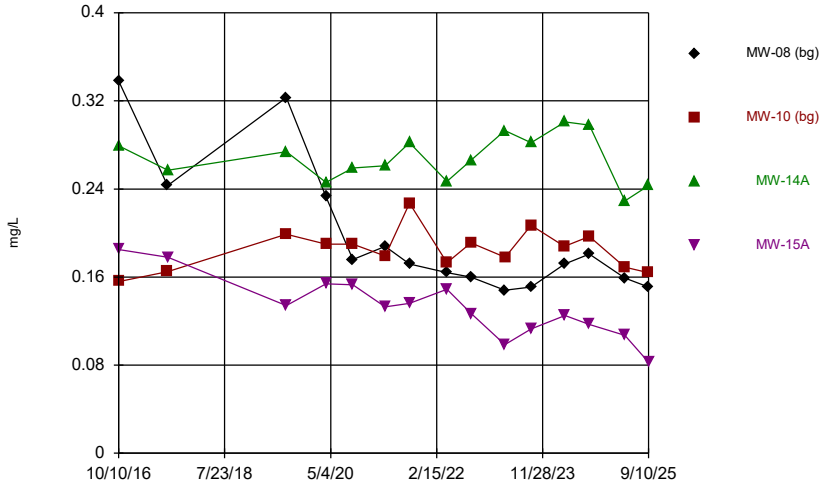
Time Series



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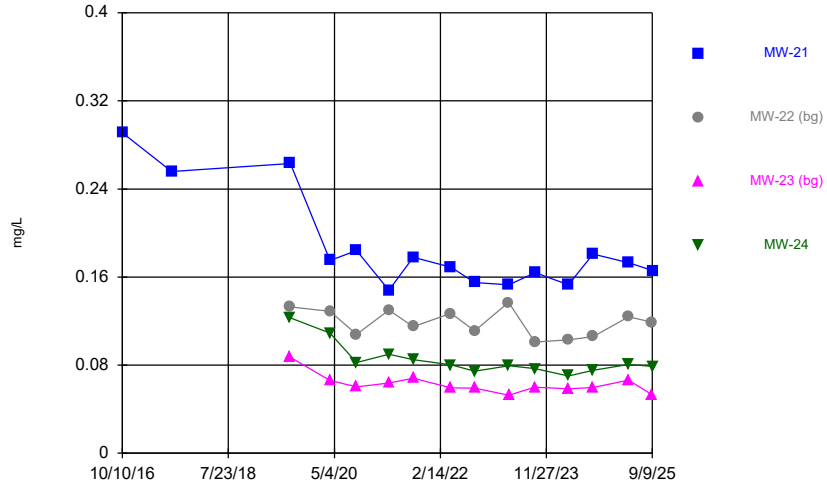
Time Series



Constituent: Strontium Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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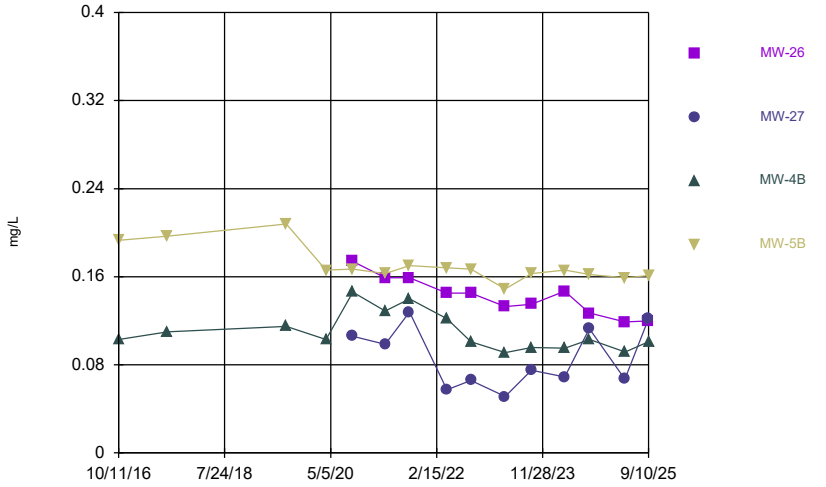
Time Series



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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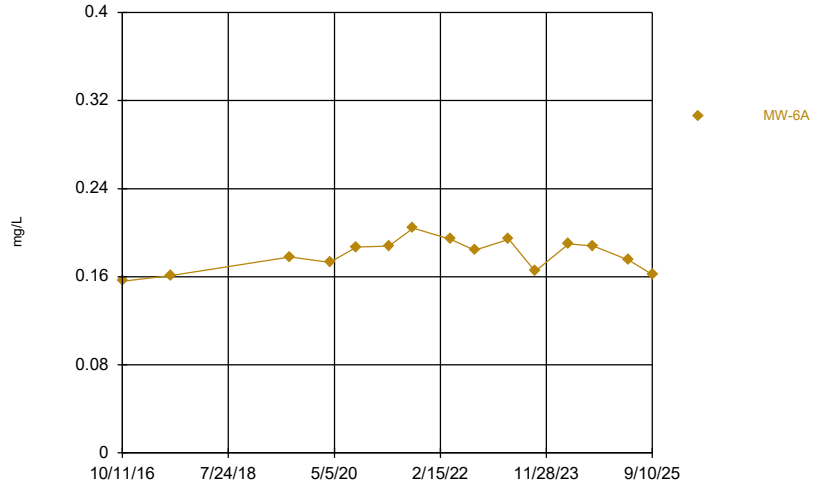
Time Series



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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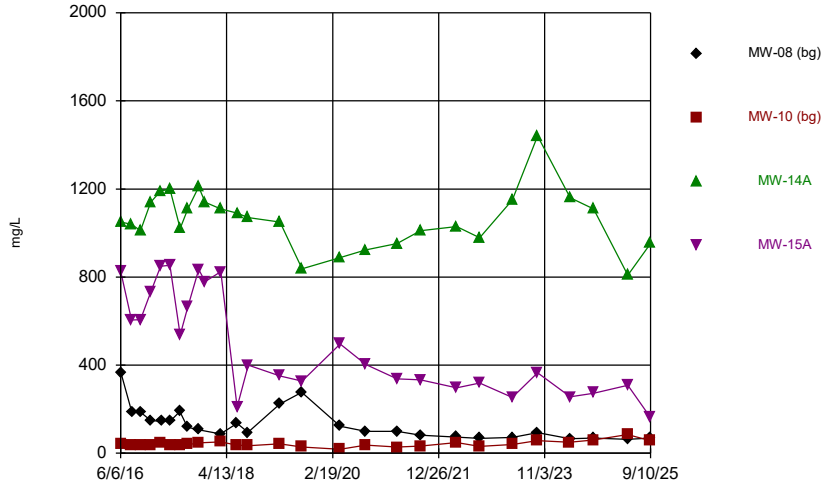
Time Series



Constituent: Strontium Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

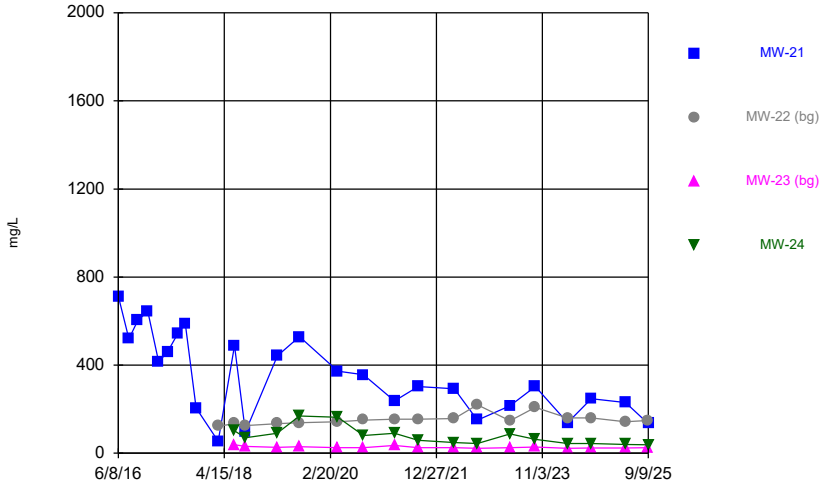
Time Series



Constituent: Sulfate Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

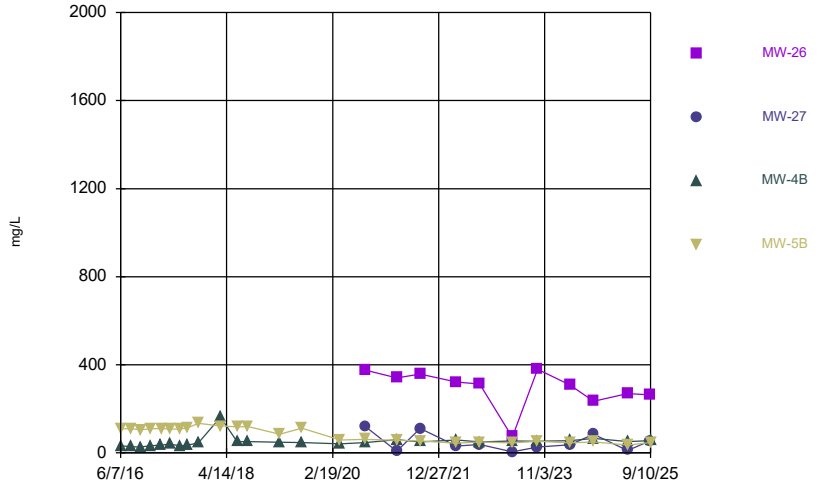
Time Series



Constituent: Sulfate Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

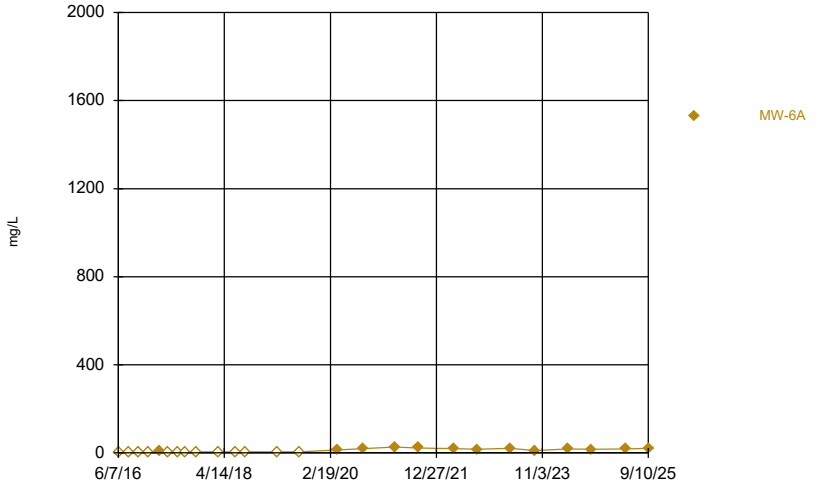
Time Series



Constituent: Sulfate Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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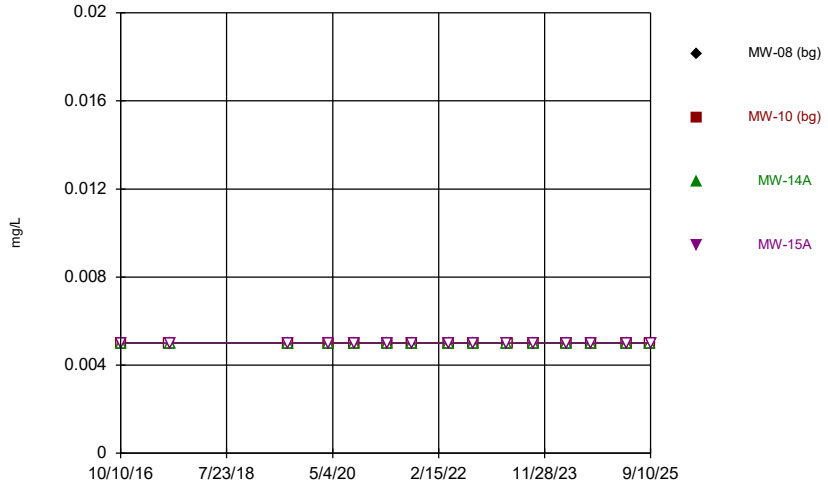
Time Series



Constituent: Sulfate Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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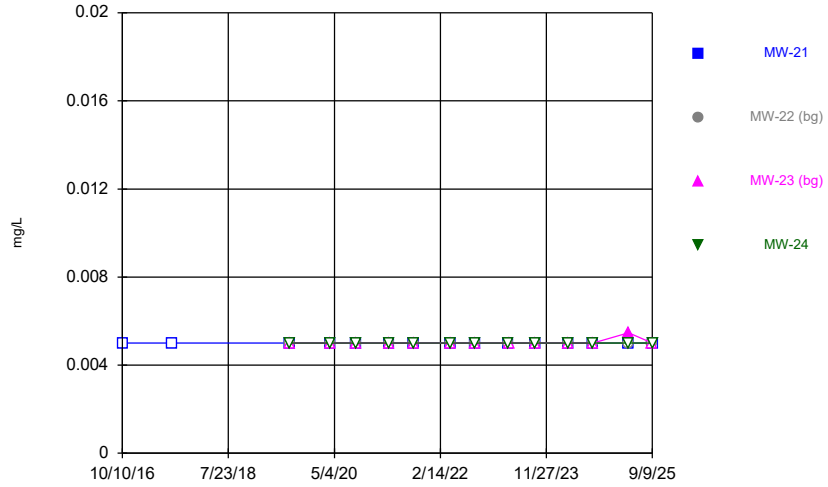
Time Series



Constituent: Vanadium Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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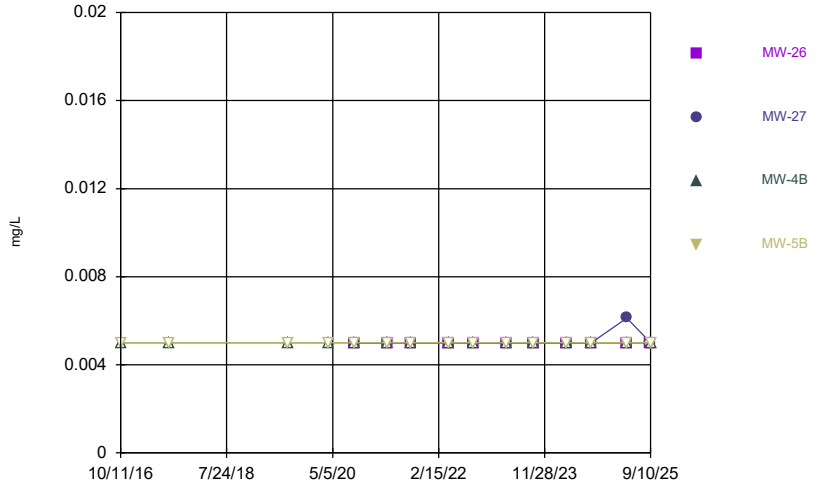
Time Series



Constituent: Vanadium Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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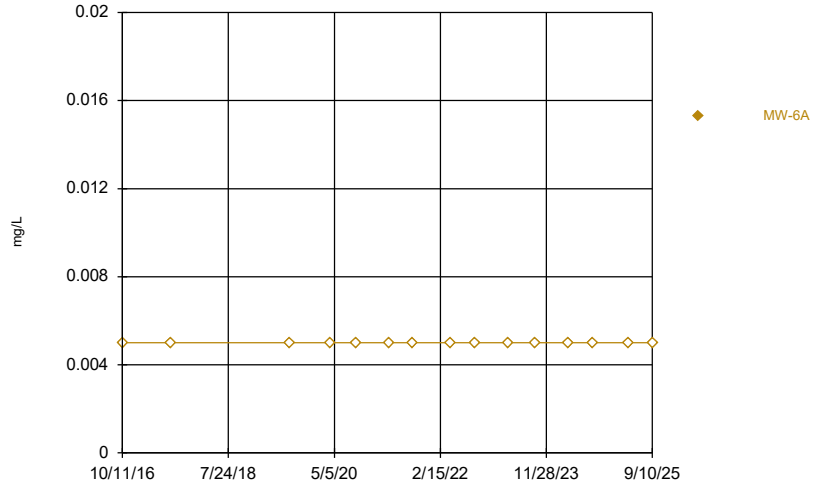
Time Series



Constituent: Vanadium Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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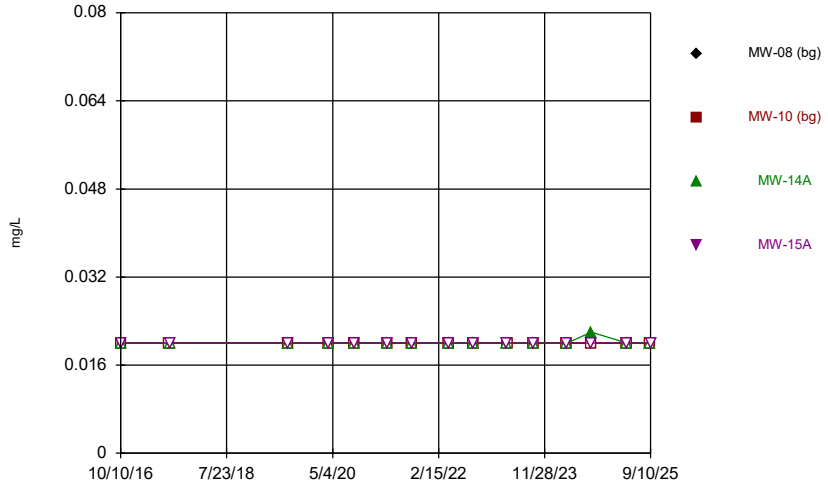
Time Series



Constituent: Vanadium Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
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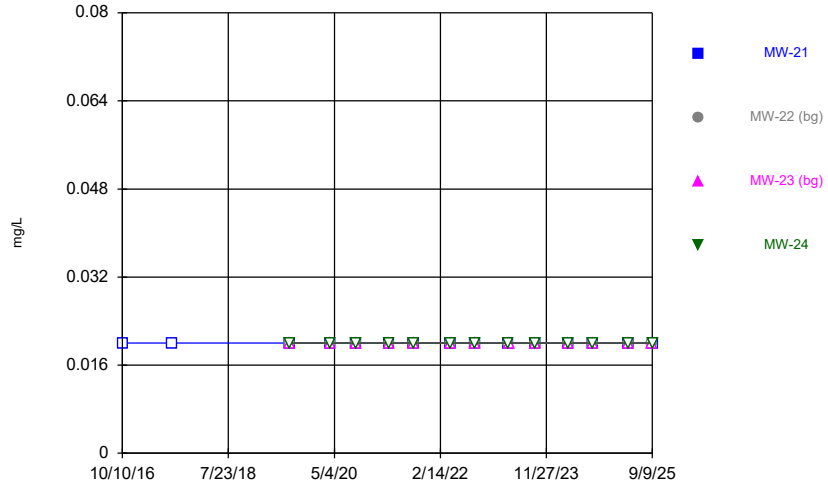
Time Series



Constituent: Zinc Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

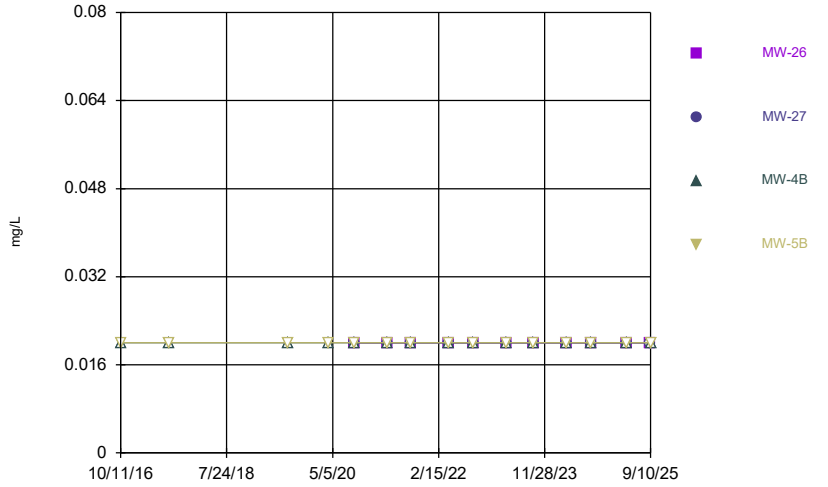
Time Series



Constituent: Zinc Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

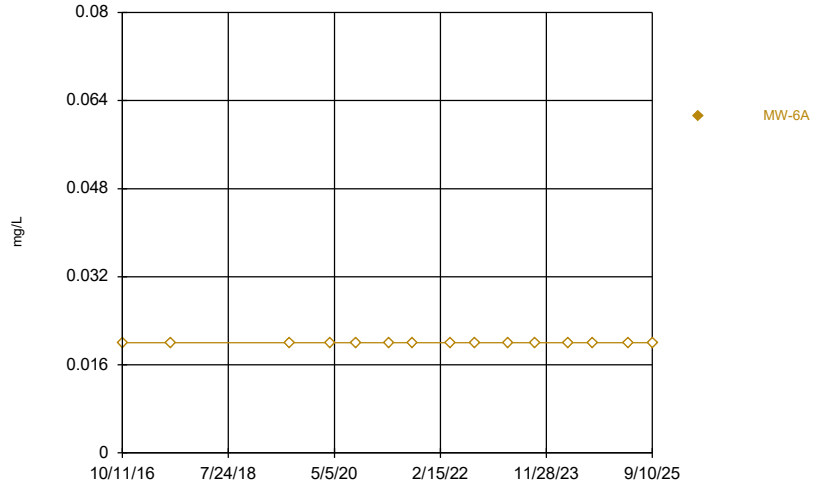
Time Series



Constituent: Zinc Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Zinc Analysis Run 12/15/2025 3:53 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Time Series

Constituent: Aluminum (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
10/10/2016	<0.05	0.0826		
10/11/2016			<0.05	<0.05
8/7/2017	<0.05	<0.05		
8/8/2017			<0.05	<0.05
8/6/2019	<0.05			
8/7/2019		<0.05	<0.05	<0.05
4/7/2020	<0.05	<0.05	<0.05	<0.05
9/18/2020	<0.05	<0.05	<0.05	<0.05
4/5/2021	<0.05	<0.05	<0.05	<0.05
9/1/2021	<0.05	<0.05	<0.05	<0.05
4/20/2022	<0.05	<0.05	0.111	<0.05
9/14/2022	<0.05	<0.05	0.119	<0.05
4/11/2023	<0.05		<0.05	<0.05
4/12/2023		<0.05		
9/18/2023		<0.05		
9/19/2023	<0.05		<0.05	<0.05
4/11/2024		<0.05		
4/12/2024	<0.05			
4/15/2024			<0.05	<0.05
9/10/2024		<0.05		
9/11/2024	<0.05		<0.05	<0.05
4/16/2025	<0.05	<0.05		
4/17/2025			0.104	<0.05
9/8/2025		<0.05		
9/9/2025	<0.05		<0.05	
9/10/2025				<0.05

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Aluminum (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
10/10/2016	<0.05			
8/8/2017	<0.05			
8/6/2019		<0.05	0.253	<0.05
8/7/2019	<0.05			
4/7/2020	<0.05	<0.05	0.552	<0.05
9/18/2020	<0.05	<0.05	<0.05	<0.05
4/5/2021	<0.05	<0.05	0.39	<0.05
9/1/2021	<0.05	<0.05	0.135	<0.05
4/20/2022	<0.05	<0.05	0.478	<0.05
9/14/2022	<0.05	<0.05	0.142	<0.05
4/10/2023		<0.05		
4/11/2023	<0.05			<0.05
4/12/2023			0.233	
9/18/2023		<0.05	0.105	
9/19/2023	<0.05			<0.05
4/11/2024		<0.05	0.243	
4/12/2024	<0.05			<0.05
9/10/2024	<0.05	<0.05	0.168	
9/11/2024				<0.05
4/15/2025		0.139	2.76	
4/16/2025	<0.05			<0.05
9/8/2025		<0.05	0.209	
9/9/2025	<0.05			<0.05

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Aluminum (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
10/11/2016			<0.05	<0.05
8/7/2017			<0.05	
8/8/2017				<0.05
8/7/2019			<0.05	<0.05
4/7/2020			<0.05	<0.05
9/18/2020	<0.05	<0.05	0.475	<0.05
4/5/2021	<0.05	<0.05	<0.05	<0.05
9/1/2021	<0.05	0.112	<0.05	<0.05
4/20/2022	<0.05	0.27	<0.05	<0.05
9/14/2022	<0.05	0.558	<0.05	<0.05
4/12/2023	0.0884	0.394	<0.05	<0.05
9/20/2023	<0.05	0.0737	<0.05	<0.05
4/12/2024	<0.05	0.191		
4/15/2024			<0.05	<0.05
9/11/2024	<0.05	0.0529		
9/12/2024			<0.05	<0.05
4/16/2025	0.0503	2.75		
4/18/2025			<0.05	0.0574
9/9/2025	<0.05	0.0623		
9/10/2025			<0.05	<0.05

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Aluminum (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
10/11/2016	<0.05
8/8/2017	<0.05
8/7/2019	<0.05
4/7/2020	<0.05
9/18/2020	<0.05
4/5/2021	<0.05
9/1/2021	<0.05
4/20/2022	<0.05
9/14/2022	<0.05
4/12/2023	<0.05
9/20/2023	<0.05
4/15/2024	<0.05
9/12/2024	<0.05
4/18/2025	<0.05
9/10/2025	<0.05

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Arsenic (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
6/6/2016		0.00298		<0.002
6/7/2016	<0.002			
6/8/2016			<0.002	
8/15/2016		0.00369	<0.002	<0.002
8/16/2016	<0.002			
10/10/2016	<0.002	0.00328		
10/11/2016			<0.002	<0.002
12/14/2016	<0.002	0.00312	<0.002	<0.002
2/17/2017		0.00298	<0.002	<0.002
2/21/2017	<0.002			
4/17/2017	<0.002	<0.002	<0.002	<0.002
6/19/2017	<0.002	0.00262		
6/21/2017			<0.002	<0.002
8/7/2017	<0.002	0.00317		
8/8/2017			<0.002	<0.002
3/5/2018		<0.002		
3/6/2018	<0.002			
3/7/2018			<0.002	<0.002
6/19/2018	<0.002	0.00211		
6/20/2018			<0.002	<0.002
8/27/2018	<0.002	0.0036		
8/29/2018			<0.002	<0.002
3/18/2019	<0.002			
3/19/2019		0.0056		
3/20/2019			<0.002	<0.002
8/6/2019	<0.002			
8/7/2019		0.00784	<0.002	<0.002
4/7/2020	<0.002	0.00697	<0.002	<0.002
9/18/2020	<0.002	0.00748	<0.002	<0.002
4/5/2021	<0.002	0.00393	<0.002	<0.002
9/1/2021	<0.002	0.00781	<0.002	<0.002
4/20/2022	<0.002	0.00371	<0.002	<0.002
9/14/2022	<0.002	0.00497	<0.002	<0.002
4/11/2023	0.00247		<0.002	<0.002
4/12/2023		0.00224		
9/18/2023		0.00501		
9/19/2023	<0.002		<0.002	<0.002
4/11/2024		<0.002		
4/12/2024	0.0039			
4/15/2024			<0.002	<0.002
9/10/2024		0.00525		
9/11/2024	0.00466		<0.002	<0.002
4/16/2025	0.0045	<0.002		
4/17/2025			<0.002	<0.002
9/8/2025		0.00429		
9/9/2025	0.00317		<0.002	
9/10/2025				<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Arsenic (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
6/8/2016	<0.002			
8/15/2016	<0.002			
10/10/2016	<0.002			
12/12/2016	<0.002			
2/21/2017	<0.002			
4/18/2017	<0.002			
6/20/2017	<0.002			
8/8/2017	<0.002			
3/6/2018	<0.002	<0.002		
6/19/2018	<0.002	0.00245		
6/20/2018			<0.002	<0.002
8/27/2018		0.00261	<0.002	<0.002
8/28/2018	<0.002			
3/18/2019				<0.002
3/19/2019		<0.002	<0.002	
3/20/2019	<0.002			
8/6/2019		<0.002	<0.002	<0.002
8/7/2019	<0.002			
4/7/2020	<0.002	<0.002	<0.002	<0.002
9/18/2020	<0.002	<0.002	<0.002	<0.002
4/5/2021	<0.002	0.00289	<0.002	<0.002
9/1/2021	<0.002	0.00267	<0.002	<0.002
4/20/2022	<0.002	0.0034	<0.002	<0.002
9/14/2022	<0.002	0.00285	<0.002	<0.002
4/10/2023		0.00421		
4/11/2023	<0.002			<0.002
4/12/2023			<0.002	
9/18/2023		0.00421	<0.002	
9/19/2023	<0.002			<0.002
4/11/2024		0.00634	<0.002	
4/12/2024	<0.002			<0.002
9/10/2024	<0.002	0.00749	<0.002	
9/11/2024				<0.002
4/15/2025		0.00671	<0.002	
4/16/2025	<0.002			<0.002
9/8/2025		0.00768	<0.002	
9/9/2025	<0.002			<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Arsenic (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
6/7/2016			<0.002	<0.002
8/16/2016			<0.002	<0.002
10/11/2016			<0.002	<0.002
12/12/2016			<0.002	<0.002
2/17/2017			<0.002	
2/21/2017				<0.002
4/17/2017			<0.002	<0.002
6/20/2017			<0.002	<0.002
8/7/2017			<0.002	
8/8/2017				<0.002
3/6/2018			<0.002	<0.002
6/21/2018			<0.002	<0.002
8/28/2018			<0.002	
8/29/2018				<0.002
3/19/2019			<0.002	<0.002
8/7/2019			<0.002	<0.002
4/7/2020			<0.002	<0.002
9/18/2020	<0.002	<0.002	<0.002	<0.002
4/5/2021	<0.002	<0.002	<0.002	<0.002
9/1/2021	<0.002	<0.002	<0.002	<0.002
4/20/2022	<0.002	<0.002	<0.002	<0.002
9/14/2022	<0.002	<0.002	<0.002	<0.002
4/12/2023	<0.002	<0.002	<0.002	<0.002
9/20/2023	<0.002	<0.002	<0.002	<0.002
4/12/2024	<0.002	<0.002		
4/15/2024			<0.002	<0.002
9/11/2024	<0.002	<0.002		
9/12/2024			<0.002	<0.002
4/16/2025	<0.002	<0.002		
4/18/2025			<0.002	<0.002
9/9/2025	<0.002	<0.002		
9/10/2025			<0.002	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Arsenic (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
6/7/2016	<0.002
8/16/2016	<0.002
10/11/2016	<0.002
12/12/2016	<0.002
2/21/2017	<0.002
4/17/2017	<0.002
6/21/2017	<0.002
8/8/2017	<0.002
3/6/2018	<0.002
6/21/2018	<0.002
8/29/2018	<0.002
3/19/2019	<0.002
8/7/2019	<0.002
4/7/2020	<0.002
9/18/2020	<0.002
4/5/2021	<0.002
9/1/2021	<0.002
4/20/2022	<0.002
9/14/2022	<0.002
4/12/2023	<0.002
9/20/2023	<0.002
4/15/2024	<0.002
9/12/2024	<0.002
4/18/2025	<0.002
9/10/2025	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
6/6/2016		0.168		2.13 (o)
6/7/2016	0.0861			
6/8/2016			0.0443	
8/15/2016		0.161	0.0402	0.044
8/16/2016	0.0671			
10/10/2016	0.0706	0.163		
10/11/2016			0.0391	0.0426
12/14/2016	0.0645	0.15	0.0383	0.0406
2/17/2017		0.151	0.0306	0.0402
2/21/2017	0.0594 (F1)			
4/17/2017	0.0636	0.138	0.0341	0.0364
6/19/2017	0.076	0.154		
6/21/2017			0.0338	0.0327
8/7/2017	0.0596	0.157		
8/8/2017			0.031	0.0338
3/5/2018		0.129		
3/6/2018	0.0617			
3/7/2018			0.0285	0.0352
6/19/2018	0.0761	0.162		
6/20/2018			0.0314	0.0338
8/27/2018	0.0649	0.216		
8/29/2018			0.0344	0.0335
3/18/2019	0.0751			
3/19/2019		0.185		
3/20/2019			0.0328	0.037
8/6/2019	0.0733			
8/7/2019		0.215	0.0398	0.047
4/7/2020	0.0613	0.199	0.0266	0.0389
9/18/2020	0.0549	0.227	0.0328	0.0416
4/5/2021	0.0596	0.196	0.0355	0.0365
9/1/2021	0.0623	0.233	0.0345	0.0355
4/20/2022	0.0631	0.208	0.0327	0.0443
9/14/2022	0.0703	0.223	0.034	0.0327
4/11/2023	0.07		0.032	0.0299
4/12/2023		0.19		
9/18/2023		0.233		
9/19/2023	0.0782		0.0348	0.0338
4/11/2024		0.193		
4/12/2024	0.0857			
4/15/2024			0.0323	0.0353
9/10/2024		0.219		
9/11/2024	0.0944		0.0338	0.0335
4/16/2025	0.0867	0.19		
4/17/2025			0.0294	0.03
9/8/2025		0.172		
9/9/2025	0.0852		0.0331	
9/10/2025				0.0302

Time Series

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
6/8/2016	0.0573			
8/15/2016	0.0482			
10/10/2016	0.0606			
12/12/2016	0.056			
2/21/2017	0.0735			
4/18/2017	0.0356			
6/20/2017	0.0461			
8/8/2017	0.0499			
3/6/2018	0.0148	0.15		
6/19/2018	0.0515	0.184		
6/20/2018			0.106	0.0695
8/27/2018		0.181	0.0779	0.0776
8/28/2018	0.0622			
3/18/2019				0.0889
3/19/2019		0.209	0.0922	
3/20/2019	0.0511			
8/6/2019		0.215	0.0635	0.128
8/7/2019	0.0624			
4/7/2020	0.0352	0.222	0.0654	0.084
9/18/2020	0.0407	0.222	0.0491	0.0969
4/5/2021	0.0309	0.242	0.0608	0.0936
9/1/2021	0.0434	0.247	0.0497	0.0922
4/20/2022	0.036	0.239	0.0572	0.0826
9/14/2022	0.0447	0.243	0.0507	0.0887
4/10/2023		0.227		
4/11/2023	0.031			0.0863
4/12/2023			0.0518	
9/18/2023		0.256	0.0533	
9/19/2023	0.0559			0.0698
4/11/2024		0.271	0.0547	
4/12/2024	0.031			0.0899
9/10/2024	0.0555	0.268	0.0521	
9/11/2024				0.0885
4/15/2025		0.247	0.067	
4/16/2025	0.046			0.0973
9/8/2025		0.262	0.0468	
9/9/2025	0.0412			0.101

Time Series

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
6/7/2016			0.15	0.331
8/16/2016			0.128	0.295
10/11/2016			0.131	0.304
12/12/2016			0.139	0.315
2/17/2017			0.143	
2/21/2017				0.316
4/17/2017			0.111	0.296
6/20/2017			0.133	0.31
8/7/2017			0.133	
8/8/2017				0.3
3/6/2018			0.117	0.341
6/21/2018			0.144	0.336
8/28/2018			0.149	
8/29/2018				0.357
3/19/2019			0.161	0.326
8/7/2019			0.147	0.301
4/7/2020			0.156	0.25
9/18/2020	0.114	0.0738	0.147	0.239
4/5/2021	0.0989	0.0534	0.169	0.252
9/1/2021	0.0889	0.0862	0.186	0.241
4/20/2022	0.0802	0.0498	0.191	0.258
9/14/2022	0.0876	0.0594	0.188	0.253
4/12/2023	0.0815	0.0508	0.173	0.237
9/20/2023	0.0755	0.053	0.181	0.274
4/12/2024	0.0716	0.0511		
4/15/2024			0.168	0.243
9/11/2024	0.0643	0.0795		
9/12/2024			0.184	0.258
4/16/2025	0.0617	0.0607		
4/18/2025			0.157	0.256
9/9/2025	0.0589	0.0804		
9/10/2025			0.175	0.252

Time Series

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
6/7/2016	0.209
8/16/2016	0.199
10/11/2016	0.196
12/12/2016	0.216
2/21/2017	0.197
4/17/2017	0.152
6/21/2017	0.197
8/8/2017	0.19
3/6/2018	0.206
6/21/2018	0.222
8/29/2018	0.206
3/19/2019	0.2
8/7/2019	0.211
4/7/2020	0.216
9/18/2020	0.231
4/5/2021	0.245
9/1/2021	0.248
4/20/2022	0.249
9/14/2022	0.229
4/12/2023	0.246
9/20/2023	0.222
4/15/2024	0.235
9/12/2024	0.249
4/18/2025	0.231
9/10/2025	0.213

Time Series

Constituent: Beryllium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
6/6/2016		<0.001		<0.001
6/7/2016	<0.001			
6/8/2016			<0.001	
8/15/2016		<0.001	<0.001	<0.001
8/16/2016	<0.001			
10/10/2016	<0.001	<0.001		
10/11/2016			<0.001	<0.001
12/14/2016	<0.001	<0.001	<0.001	<0.001
2/17/2017		<0.001	<0.001	<0.001
2/21/2017	<0.001			
4/17/2017	<0.001	<0.001	<0.001	<0.001
6/19/2017	<0.001	<0.001		
6/21/2017			<0.001	<0.001
8/7/2017	<0.001	<0.001		
8/8/2017			<0.001	<0.001
3/5/2018		<0.001		
3/6/2018	<0.001			
3/7/2018			<0.001	<0.001
6/19/2018	<0.001	<0.001		
6/20/2018			<0.001	<0.001
8/27/2018	<0.001	<0.001		
8/29/2018			<0.001	<0.001
3/18/2019	<0.001			
3/19/2019		<0.001		
3/20/2019			<0.001	<0.001
8/6/2019	<0.001			
8/7/2019		<0.001	<0.001	<0.001
4/7/2020	<0.001	<0.001	<0.001	<0.001
9/18/2020	<0.001	<0.001	<0.001	<0.001
4/5/2021	<0.001	<0.001	<0.001	<0.001
9/1/2021	<0.001	<0.001	<0.001	<0.001
4/20/2022	<0.001	<0.001	<0.001	<0.001
9/14/2022	<0.001	<0.001	<0.001	<0.001
4/11/2023	<0.001		<0.001	<0.001
4/12/2023		<0.001		
9/18/2023		<0.001		
9/19/2023	<0.001		<0.001	<0.001
4/11/2024		<0.001		
4/12/2024	<0.001			
4/15/2024			<0.001	<0.001
9/10/2024		<0.001		
9/11/2024	<0.001		<0.001	<0.001
4/16/2025	<0.001	<0.001		
4/17/2025			<0.001	<0.001
9/8/2025		<0.001		
9/9/2025	<0.001		<0.001	
9/10/2025				<0.001

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Beryllium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
6/8/2016	<0.001			
8/15/2016	<0.001			
10/10/2016	<0.001			
12/12/2016	<0.001			
2/21/2017	<0.001			
4/18/2017	<0.001			
6/20/2017	<0.001			
8/8/2017	<0.001			
3/6/2018	<0.001	<0.001		
6/19/2018	<0.001	<0.001		
6/20/2018			<0.001	<0.001
8/27/2018		<0.001	<0.001	<0.001
8/28/2018	<0.001			
3/18/2019				<0.001
3/19/2019		<0.001	<0.001	
3/20/2019	<0.001			
8/6/2019		<0.001	<0.001	<0.001
8/7/2019	<0.001			
4/7/2020	<0.001	<0.001	<0.001	<0.001
9/18/2020	<0.001	<0.001	<0.001	<0.001
4/5/2021	<0.001	<0.001	<0.001	<0.001
9/1/2021	<0.001	<0.001	<0.001	<0.001
4/20/2022	<0.001	<0.001	<0.001	<0.001
9/14/2022	<0.001	<0.001	<0.001	<0.001
4/10/2023		<0.001		
4/11/2023	<0.001			<0.001
4/12/2023			<0.001	
9/18/2023		<0.001	<0.001	
9/19/2023	<0.001			<0.001
4/11/2024		<0.001	<0.001	
4/12/2024	<0.001			<0.001
9/10/2024	<0.001	<0.001	<0.001	
9/11/2024				<0.001
4/15/2025		<0.001	<0.001	
4/16/2025	<0.001			<0.001
9/8/2025		<0.001	<0.001	
9/9/2025	<0.001			<0.001

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Beryllium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
6/7/2016			<0.001	<0.001
8/16/2016			<0.001	<0.001
10/11/2016			<0.001	<0.001
12/12/2016			<0.001	<0.001
2/17/2017			<0.001	
2/21/2017				<0.001
4/17/2017			<0.001	<0.001
6/20/2017			<0.001	<0.001
8/7/2017			<0.001	
8/8/2017				<0.001
3/6/2018			<0.001	<0.001
6/21/2018			<0.001	<0.001
8/28/2018			<0.001	
8/29/2018				<0.001
3/19/2019			<0.001	<0.001
8/7/2019			<0.001	<0.001
4/7/2020			<0.001	<0.001
9/18/2020	<0.001	<0.001	<0.001	<0.001
4/5/2021	<0.001	<0.001	<0.001	<0.001
9/1/2021	<0.001	<0.001	<0.001	<0.001
4/20/2022	<0.001	<0.001	<0.001	<0.001
9/14/2022	<0.001	<0.001	<0.001	<0.001
4/12/2023	<0.001	<0.001	<0.001	<0.001
9/20/2023	<0.001	<0.001	<0.001	<0.001
4/12/2024	<0.001	<0.001		
4/15/2024			<0.001	<0.001
9/11/2024	<0.001	<0.001		
9/12/2024			<0.001	<0.001
4/16/2025	<0.001	<0.001		
4/18/2025			<0.001	<0.001
9/9/2025	<0.001	<0.001		
9/10/2025			<0.001	<0.001

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Beryllium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
6/7/2016	<0.001
8/16/2016	<0.001
10/11/2016	<0.001
12/12/2016	<0.001
2/21/2017	<0.001
4/17/2017	<0.001
6/21/2017	<0.001
8/8/2017	<0.001
3/6/2018	<0.001
6/21/2018	<0.001
8/29/2018	<0.001
3/19/2019	<0.001
8/7/2019	<0.001
4/7/2020	<0.001
9/18/2020	<0.001
4/5/2021	<0.001
9/1/2021	<0.001
4/20/2022	<0.001
9/14/2022	<0.001
4/12/2023	<0.001
9/20/2023	<0.001
4/15/2024	<0.001
9/12/2024	<0.001
4/18/2025	<0.001
9/10/2025	<0.001

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
6/6/2016		<0.1		16.8
6/7/2016	<0.1			
6/8/2016			15.8	
8/15/2016		<0.1	17.9	20.6
8/16/2016	<0.1			
10/10/2016	<0.1	<0.1		
10/11/2016			19.3	17.9
12/14/2016	<0.1	<0.1	14.7	18.4
2/17/2017		<0.1	13.1	14.9
2/21/2017	<0.1			
4/17/2017	<0.1	<0.1	11.3	14.7
6/19/2017	<0.1	<0.1		
6/21/2017			16.3	16.4
8/7/2017	<0.1	<0.1		
8/8/2017			13	14.7
10/16/2017	<0.1	<0.1		
10/17/2017			16	19.2
11/28/2017			13.7 (R)	12.9 (R)
3/5/2018		<0.1		
3/6/2018	<0.1			
3/7/2018			11	9.8
6/19/2018	<0.1	<0.1		
6/20/2018			15	10.5
8/27/2018	<0.1	<0.1		
8/29/2018			14	14.6
3/18/2019	<0.1			
3/19/2019		<0.1		
3/20/2019			15.5	8.35
8/6/2019	0.205			
8/7/2019		<0.1	17.6	7.56
4/7/2020	<0.1	<0.1	17.4	10.6
9/18/2020	<0.1	<0.1	19.5	14.5
4/5/2021	<0.1	<0.1	17.2	10.3
9/1/2021	<0.1	<0.1	17.1	11.1
4/20/2022	<0.1	<0.1	15.2	6.98
9/14/2022	<0.1	<0.1	15.1	10.4
4/11/2023	<0.1		14.8	5.8
4/12/2023		<0.1		
9/18/2023		<0.1		
9/19/2023	<0.1		18.1	9.28
4/11/2024		<0.1		
4/12/2024	<0.1			
4/15/2024			15.2	5.8
9/10/2024		<0.1		
9/11/2024	<0.1		17.7	8.5
4/16/2025	<0.1	<0.1		
4/17/2025			15.4	8.16
9/8/2025		<0.1		
9/9/2025	<0.1		16.1	
9/10/2025				5.51

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
6/8/2016	<2			
8/15/2016	7.23			
10/10/2016	8.45			
12/12/2016	6.93			
2/21/2017	4.87			
4/18/2017	4.49			
6/20/2017	7.36			
8/8/2017	7.05			
10/16/2017	3.33			
11/28/2017	2.24 (R)			
3/6/2018	0.885	<0.1		
6/19/2018	6.84	<0.1		
6/20/2018			<0.1	<0.1
8/27/2018		<0.1	<0.1	<0.1
8/28/2018	1.36			
3/18/2019				<0.1
3/19/2019		0.299	<0.1	
3/20/2019	6.95			
8/6/2019		<0.1	<0.1	<0.1
8/7/2019	8.46			
4/7/2020	6.76	<0.1	<0.1	<0.1
9/18/2020	6.82	0.263	0.15	0.109
4/5/2021	5.24	<0.1	<0.1	<0.1
9/1/2021	5.88	<0.1	<0.1	<0.1
4/20/2022	3.57	<0.1	<0.1	<0.1
9/14/2022	3.69	0.322	0.204	0.134
4/10/2023		0.247		
4/11/2023	3.35			0.114
4/12/2023			0.145	
9/18/2023		0.207	0.128	
9/19/2023	4.42			<0.1
4/11/2024		<0.1	<0.1	
4/12/2024	2.31			<0.1
9/10/2024	3.68	0.243	0.126	
9/11/2024				<0.1
4/15/2025		<0.1	<0.1	
4/16/2025	2.64			<0.1
9/8/2025		0.187	0.123	
9/9/2025	1.65			0.126

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
6/7/2016			<0.1	<0.1
8/16/2016			<0.1	<0.1
10/11/2016			<0.1	<0.1
12/12/2016			<0.1	<0.1
2/17/2017			<0.1	
2/21/2017				<0.1
4/17/2017			<0.1	<0.1
6/20/2017			<0.1	<0.1
8/7/2017			<0.1	
8/8/2017				<0.1
10/16/2017			<0.1	
10/17/2017				<0.1
3/6/2018			0.66	<0.1
6/21/2018			<0.1	<0.1
8/28/2018			<0.1	
8/29/2018				<0.1
3/19/2019			<0.1	<0.1
8/7/2019			<0.1	<0.1
4/7/2020			<0.1	<0.1
9/18/2020	2.5	3.25	<0.1	<0.1
4/5/2021	2.33	0.17	<0.1	<0.1
9/1/2021	2.49	3.82	<0.1	<0.1
4/20/2022	2.07	0.549	<0.1	<0.1
9/14/2022	1.97	1.41	<0.1	<0.1
4/12/2023	2.26	0.741	<0.1	<0.1
9/20/2023	3.08	1	<0.1	<0.1
4/12/2024	3.07	1.01		
4/15/2024			<0.1	<0.1
9/11/2024	4.19	3.02		
9/12/2024			<0.1	<0.1
4/16/2025	3.4	0.244		
4/18/2025			0.169	<0.1
9/9/2025	4.81	2.46		
9/10/2025			<0.1	<0.1

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
6/7/2016	<0.1
8/16/2016	<0.1
10/11/2016	<0.1
12/12/2016	<0.1
2/21/2017	<0.1
4/17/2017	<0.1
6/21/2017	<0.1
8/8/2017	<0.1
10/17/2017	<0.1
3/6/2018	<0.1
6/21/2018	<0.1
8/29/2018	<0.1
3/19/2019	<0.1
8/7/2019	<0.1
4/7/2020	<0.1
9/18/2020	<0.1
4/5/2021	<0.1
9/1/2021	<0.1
4/20/2022	<0.1
9/14/2022	<0.1
4/12/2023	<0.1
9/20/2023	<0.1
4/15/2024	<0.1
9/12/2024	<0.1
4/18/2025	<0.1
9/10/2025	<0.1

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
6/6/2016		89.3		206
6/7/2016	152 (o)			
6/8/2016			281	
8/15/2016		80.7	311	199
8/16/2016	117			
10/10/2016	118	83.3		
10/11/2016			308	203
12/14/2016	109	86.5	333	244
2/17/2017		81.2	268	233
2/21/2017	89.9			
4/17/2017	96.5	79.2	310	226
6/19/2017	113	83.6		
6/21/2017			307	186
8/7/2017	91.3	85.5		
8/8/2017			296	206
10/16/2017	77	83.3		
10/17/2017			310	218
11/28/2017			301 (R)	217 (R)
3/5/2018		77.3		
3/6/2018	74.7			
3/7/2018			278	229
6/19/2018	115	88.5		
6/20/2018			297	102
8/27/2018	83.6	85.4		
8/29/2018			309	155
3/18/2019	97.6			
3/19/2019		76.3		
3/20/2019			290	118
8/6/2019	132			
8/7/2019		78.9	255	111
4/7/2020	92.4	75.4	245	163
9/18/2020	77.7	74.2	244	134
4/5/2021	81.2	78.8	259	128
9/1/2021	78.3	80	270	125
4/20/2022	69.6	90.4	289	127
9/14/2022	76.8	82	301	132
4/11/2023	78.2		318	110
4/12/2023		83.7		
9/18/2023		84.7		
9/19/2023	79.4		291	126
4/11/2024		96.2		
4/12/2024	84.2			
4/15/2024			344	118
9/10/2024		97.8		
9/11/2024	88.6		327	129
4/16/2025	84.1	99.6		
4/17/2025			286	125
9/8/2025		82.6		
9/9/2025	79.6		277	
9/10/2025				77.2

Time Series

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
6/8/2016	37.2			
8/15/2016	146			
10/10/2016	185			
12/12/2016	178			
2/21/2017	118			
4/18/2017	110			
6/20/2017	149			
8/8/2017	163			
10/16/2017	62.3			
3/6/2018	25.1	69.8		
6/19/2018	159	91.5		
6/20/2018			70.5	88
8/27/2018		80.7	63.9	72.8
8/28/2018	78.7			
3/18/2019				75
3/19/2019		91.6	59.7	
3/20/2019	142			
8/6/2019		83.8	59.5	103
8/7/2019	145			
4/7/2020	104	80.9	61	94.3
9/18/2020	101	75.5	52.1	69.9
4/5/2021	79.5	78.4	56.3	74.6
9/1/2021	93.5	79.4	56.1	69
4/20/2022	97.5	80.2	54	62.8
9/14/2022	88.2	79.6	54.5	66.8
4/10/2023		80.4		
4/11/2023	76			78.6
4/12/2023			55.3	
9/18/2023		79	56	
9/19/2023	96			70.5
4/11/2024		83.1	59.7	
4/12/2024	59.9			71.6
9/10/2024	96.6	84.3	58	
9/11/2024				73.6
4/15/2025		74.5	56	
4/16/2025	87.4			71.6
9/8/2025		74.6	44.9	
9/9/2025	52.8			72.9

Time Series

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
6/7/2016			98.2	147
8/16/2016			88.8	139
10/11/2016			89.3	140
12/12/2016			94.5	147
2/17/2017			86.8	
2/21/2017				126
4/17/2017			85.9	130
6/20/2017			88.7	140
8/7/2017			89.7	
8/8/2017				139
10/16/2017			85.3	
10/17/2017				136
3/6/2018			95.8	134
6/21/2018			91.4	147
8/28/2018			91.3	
8/29/2018				146
3/19/2019			99.7	134
8/7/2019			93.8	139
4/7/2020			89.6	117
9/18/2020	134	61	89	108
4/5/2021	130	57.6	94.1	104
9/1/2021	134	68.4	95.1	108
4/20/2022	121	29.6	106	117
9/14/2022	133	38.7	92.3	117
4/12/2023	141	26.8	91.3	107
9/20/2023	127	33.4	90.4	115
4/12/2024	134	35.4		
4/15/2024			97.7	112
9/11/2024	126	63.1		
9/12/2024			102	123
4/16/2025	114	26.4		
4/18/2025			86.8	106
9/9/2025	114	55.5		
9/10/2025			94.9	114

Time Series

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
6/7/2016	81.4
8/16/2016	75.4
10/11/2016	75.7
12/12/2016	85.6
2/21/2017	68.8
4/17/2017	56.3
6/21/2017	72.9
8/8/2017	71.2
10/17/2017	71.9
3/6/2018	74.1
6/21/2018	80.1
8/29/2018	73.3
3/19/2019	73.2
8/7/2019	80.9
4/7/2020	85.1
9/18/2020	87.9
4/5/2021	87.6
9/1/2021	90.6
4/20/2022	96.5
9/14/2022	89
4/12/2023	95.4
9/20/2023	82.1
4/15/2024	92.4
9/12/2024	99.4
4/18/2025	85.2
9/10/2025	79

Time Series

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
6/6/2016		6.22		17.1
6/7/2016	19.8			
6/8/2016			28.7	
8/15/2016		<5	28.7	17.2
8/16/2016	17.8			
10/10/2016	16.2	<5		
10/11/2016			37	17.6
12/14/2016	17.2	<5	31.9	19
2/17/2017		<5	33.5	21.5
2/21/2017	15.4			
4/17/2017	17.1	<5	39.4	47.4 (o)
6/19/2017	14.1	<5		
6/21/2017			29.7	12.8
8/7/2017	14	<5		
8/8/2017			32.9	15.4
10/16/2017	14.4	<5		
10/17/2017			35.4	20.5
11/28/2017			33.2 (R)	20.7 (R)
3/5/2018		<5		
3/6/2018	14.5			
3/7/2018			37.4	24.2
6/19/2018	14.9	<5		
6/20/2018			29	<5
8/27/2018	15.6	<5		
8/29/2018			33.1	10.1
3/18/2019	16.1			
3/19/2019		<5		
3/20/2019			25.8	8.54
8/6/2019	17.1			
8/7/2019		<5	22.1	9.91
4/7/2020	17.2	<5	22.5	13
9/18/2020	14.7	<5	22.8	8.63
4/5/2021	22.3	<5	27.1	15
9/1/2021	16.3	<5	23.2	8.86
4/20/2022	15.8	<5	25.5	7.71
9/14/2022	16.7	<5	22.4	8.29
4/11/2023	17.9		20.3	7.3
4/12/2023		5.86		
9/18/2023		<5		
9/19/2023	19.9		20.9	8.41
4/11/2024		<5		
4/12/2024	17.2			
4/15/2024			16.4	7.01
9/10/2024		9.65		
9/11/2024	20.1		16.3	7.41
4/16/2025	18.6	12.8		
4/17/2025			18	7.79
9/8/2025		8.5		
9/9/2025	20.8		15.4	
9/10/2025				4.5

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
6/8/2016	27.7			
8/15/2016	16.6			
10/10/2016	24.4			
12/12/2016	19.2			
2/21/2017	14.2			
4/18/2017	15.6			
6/20/2017	15.1			
8/8/2017	16.1			
10/16/2017	5.09			
3/6/2018	<5	30		
6/19/2018	10.9	27.2		
6/20/2018			15.9	19.9
8/27/2018		29.8	14.2	18.1
8/28/2018	<5			
3/18/2019				17.3
3/19/2019		27.6	10.5	
3/20/2019	8.3			
8/6/2019		26.9	13.8	22.4
8/7/2019	14			
4/7/2020	8.05	24.8	15.7	24.8
9/18/2020	7.21	23.2	14.4	19.5
4/5/2021	5.14	28.1	21.4	28.9
9/1/2021	6.58	20	15.2	21.9
4/20/2022	7.19	20.2	16.9	19.9
9/14/2022	18	7.04	16.2	19.9
4/10/2023		18.2		
4/11/2023	5.93			23.4
4/12/2023			17.7	
9/18/2023		18.4	19.2	
9/19/2023	8.23			22.8
4/11/2024		15.8	19.2	
4/12/2024	<5			19.5
9/10/2024	13.5	16.6	21.7	
9/11/2024				22.8
4/15/2025		16.1	25.1	
4/16/2025	10.9			23.6
9/8/2025		14.5	25.2	
9/9/2025	5.1			26.5

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
6/7/2016			12.6	67
8/16/2016			13.2	65.9
10/11/2016			13.6	66
12/12/2016			13.5	67
2/17/2017			15.1	
2/21/2017				70.4
4/17/2017			12.5	62.1
6/20/2017			13.2	63.4
8/7/2017			13.2	
8/8/2017				64
10/16/2017			14.7	
10/17/2017				73
11/28/2017				67.8 (R)
3/6/2018			8.81	68.2
6/21/2018			15.3	65
8/28/2018			19.4	
8/29/2018				70.8
3/19/2019			16	55
8/7/2019			15.6	64.1
4/7/2020			14.8	44
9/18/2020	19.7	13.6	15.1	41
4/5/2021	21.1	10.4	22.9	42.7
9/1/2021	19.3	15	16.7	37.6
4/20/2022	19.9	19.1	20.8	38.1
9/14/2022	18.4	19	16.8	39
4/12/2023	3.83	2.45	18	38.7
9/20/2023	18.8	28.9	17.4	41.8
4/12/2024	17.4	19.5		
4/15/2024			18.1	39.3
9/11/2024	17.3	27.2		
9/12/2024			14.6	40.5
4/16/2025	17.2	23		
4/18/2025			18.9	32.1
9/9/2025	17.1	24.4		
9/10/2025			18.9	42

Time Series

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
6/7/2016	5.97
8/16/2016	<5
10/11/2016	<5
12/12/2016	9.08
2/21/2017	9.93
4/17/2017	<5
6/21/2017	<5
8/8/2017	<5
10/17/2017	<5
3/6/2018	5.33
6/21/2018	<5
8/29/2018	<5
3/19/2019	<5
8/7/2019	<5
4/7/2020	12.2
9/18/2020	15.6
4/5/2021	19.3
9/1/2021	17.4
4/20/2022	14.2
9/14/2022	13.3
4/12/2023	15.4
9/20/2023	12.2
4/15/2024	15.5
9/12/2024	14.4
4/18/2025	15.8
9/10/2025	16.8

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Cobalt (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
6/6/2016		0.000555		<0.0005
6/7/2016	<0.0005			
6/8/2016			<0.0005	
8/15/2016		<0.0005	<0.0005	<0.0005
8/16/2016	<0.0005			
10/10/2016	<0.0005	0.000523		
10/11/2016			<0.0005	<0.0005
12/14/2016	<0.0005	0.000638	<0.0005	<0.0005
2/17/2017		0.000663	<0.0005	<0.0005
2/21/2017	<0.0005			
4/17/2017	<0.0005	0.000779	<0.0005	<0.0005
6/19/2017	0.000601	0.000621		
6/21/2017			<0.0005	<0.0005
8/7/2017	0.00051	0.000695		
8/8/2017			<0.0005	<0.0005
3/5/2018		0.000627		
3/6/2018	<0.0005			
3/7/2018			<0.0005	<0.0005
6/19/2018	<0.0005	0.00107		
6/20/2018			<0.0005	<0.0005
8/27/2018	<0.0005	0.00088		
8/29/2018			<0.0005	<0.0005
3/18/2019	0.00177			
3/19/2019		0.000783		
3/20/2019			<0.0005	<0.0005
8/6/2019	0.00558			
8/7/2019		0.000572	<0.0005	<0.0005
4/7/2020	0.000517	0.000581	<0.0005	<0.0005
9/18/2020	0.000738	0.000751	<0.0005	<0.0005
4/5/2021	0.000839	0.000752	<0.0005	<0.0005
9/1/2021	0.00127	0.000576	<0.0005	<0.0005
4/20/2022	0.00143	0.00104	<0.0005	<0.0005
9/14/2022	0.00164	0.00109	<0.0005	<0.0005
4/11/2023	0.0014		<0.0005	<0.0005
4/12/2023		0.00142		
9/18/2023		0.000995		
9/19/2023	0.00126		<0.0005	<0.0005
4/11/2024		0.00122		
4/12/2024	0.0018			
4/15/2024			<0.0005	<0.0005
9/10/2024		0.000977		
9/11/2024	0.00216		<0.0005	<0.0005
4/16/2025	0.00163	0.00154		
4/17/2025			<0.0005	<0.0005
9/8/2025		0.0009		
9/9/2025	0.00142		<0.0005	
9/10/2025				<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Cobalt (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
6/8/2016	<0.0005			
8/15/2016	<0.0005			
10/10/2016	<0.0005			
12/12/2016	<0.0005			
2/21/2017	<0.0005			
4/18/2017	<0.0005			
6/20/2017	<0.0005			
8/8/2017	<0.0005			
3/6/2018	<0.0005	0.00142		
5/14/2018		0.0012		
6/19/2018	<0.0005	0.00129		
6/20/2018			0.00161	<0.0005
8/27/2018		0.00149	0.00066	<0.0005
8/28/2018	<0.0005			
3/18/2019				<0.0005
3/19/2019		<0.0005	0.00176	
3/20/2019	<0.0005			
8/6/2019		<0.0005	<0.0005	<0.0005
8/7/2019	<0.0005			
4/7/2020	<0.0005	<0.0005	0.000817	<0.0005
9/18/2020	<0.0005	<0.0005	<0.0005	<0.0005
4/5/2021	<0.0005	<0.0005	0.000517	<0.0005
9/1/2021	<0.0005	<0.0005	<0.0005	<0.0005
4/20/2022	<0.0005	<0.0005	0.000561	<0.0005
9/14/2022	<0.0005	<0.0005	<0.0005	<0.0005
4/10/2023		<0.0005		
4/11/2023	<0.0005			<0.0005
4/12/2023			<0.0005	
9/18/2023		<0.0005	<0.0005	
9/19/2023	<0.0005			<0.0005
4/11/2024		<0.0005	<0.0005	
4/12/2024	<0.0005			<0.0005
9/10/2024	<0.0005	<0.0005	<0.0005	
9/11/2024				<0.0005
4/15/2025		<0.0005	0.000879	
4/16/2025	<0.0005			<0.0005
9/8/2025		<0.0005	<0.0005	
9/9/2025	<0.0005			<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Cobalt (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
6/7/2016			0.000681	<0.0005
8/16/2016			<0.0005	<0.0005
10/11/2016			<0.0005	<0.0005
12/12/2016			<0.0005	<0.0005
2/17/2017			<0.0005	
2/21/2017				<0.0005
4/17/2017			<0.0005	<0.0005
6/20/2017			<0.0005	<0.0005
8/7/2017			<0.0005	
8/8/2017				<0.0005
3/6/2018			<0.0005	<0.0005
6/21/2018			<0.0005	<0.0005
8/28/2018			<0.0005	
8/29/2018				<0.0005
3/19/2019			<0.0005	<0.0005
8/7/2019			<0.0005	<0.0005
4/7/2020			<0.0005	<0.0005
9/18/2020	<0.0005	<0.0005	0.00147	<0.0005
4/5/2021	<0.0005	<0.0005	0.00132	<0.0005
9/1/2021	<0.0005	<0.0005	0.00335	<0.0005
4/20/2022	<0.0005	<0.0005	0.00135	<0.0005
9/14/2022	<0.0005	<0.0005	0.00459	<0.0005
4/12/2023	<0.0005	<0.0005	0.00271	<0.0005
9/20/2023	<0.0005	<0.0005	0.00374	<0.0005
4/12/2024	<0.0005	<0.0005		
4/15/2024			0.00172	<0.0005
9/11/2024	<0.0005	<0.0005		
9/12/2024			0.0028	<0.0005
4/16/2025	<0.0005	0.000855		
4/18/2025			0.00119	<0.0005
9/9/2025	<0.0005	<0.0005		
9/10/2025			0.00247	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Cobalt (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
6/7/2016	<0.0005
8/16/2016	<0.0005
10/11/2016	<0.0005
12/12/2016	<0.0005
2/21/2017	<0.0005
4/17/2017	<0.0005
6/21/2017	<0.0005
8/8/2017	<0.0005
3/6/2018	<0.0005
6/21/2018	<0.0005
8/29/2018	<0.0005
3/19/2019	<0.0005
8/7/2019	<0.0005
4/7/2020	<0.0005
9/18/2020	<0.0005
4/5/2021	<0.0005
9/1/2021	<0.0005
4/20/2022	<0.0005
9/14/2022	<0.0005
4/12/2023	<0.0005
9/20/2023	<0.0005
4/15/2024	<0.0005
9/12/2024	<0.0005
4/18/2025	<0.0005
9/10/2025	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Copper (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
10/10/2016	<0.005	<0.005		
10/11/2016			<0.005	<0.005
8/7/2017	<0.005	<0.005		
8/8/2017			<0.005	<0.005
8/6/2019	<0.005			
8/7/2019		<0.005	<0.005	<0.005
4/7/2020	<0.005	<0.005	<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005
4/11/2023	<0.005		<0.005	<0.005
4/12/2023		<0.005		
9/18/2023		<0.005		
9/19/2023	<0.005		<0.005	<0.005
4/11/2024		<0.005		
4/12/2024	<0.005			
4/15/2024			<0.005	<0.005
9/10/2024		<0.005		
9/11/2024	<0.005		<0.005	<0.005
4/16/2025	<0.005	<0.005		
4/17/2025			<0.005	<0.005
9/8/2025		<0.005		
9/9/2025	<0.005		<0.005	
9/10/2025				<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Copper (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
10/10/2016	<0.005			
8/8/2017	<0.005			
8/6/2019		<0.005	<0.005	<0.005
8/7/2019	<0.005			
4/7/2020	<0.005	<0.005	<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005
4/10/2023		<0.005		
4/11/2023	<0.005			<0.005
4/12/2023			<0.005	
9/18/2023		<0.005	<0.005	
9/19/2023	<0.005			<0.005
4/11/2024		<0.005	<0.005	
4/12/2024	<0.005			<0.005
9/10/2024	<0.005	<0.005	<0.005	
9/11/2024				<0.005
4/15/2025		<0.005	<0.005	
4/16/2025	<0.005			<0.005
9/8/2025		<0.005	<0.005	
9/9/2025	<0.005			<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Copper (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
10/11/2016			<0.005	<0.005
8/7/2017			<0.005	
8/8/2017				<0.005
8/7/2019			<0.005	<0.005
4/7/2020			<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005
4/12/2023	0.00512	<0.005	<0.005	<0.005
9/20/2023	<0.005	<0.005	<0.005	<0.005
4/12/2024	<0.005	<0.005		
4/15/2024			<0.005	<0.005
9/11/2024	<0.005	<0.005		
9/12/2024			<0.005	<0.005
4/16/2025	<0.005	<0.005		
4/18/2025			<0.005	<0.005
9/9/2025	<0.005	<0.005		
9/10/2025			<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Copper (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
10/11/2016	<0.005
8/8/2017	<0.005
8/7/2019	<0.005
4/7/2020	<0.005
9/18/2020	<0.005
4/5/2021	<0.005
9/1/2021	<0.005
4/20/2022	<0.005
9/14/2022	<0.005
4/12/2023	<0.005
9/20/2023	<0.005
4/15/2024	<0.005
9/12/2024	<0.005
4/18/2025	<0.005
9/10/2025	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
6/6/2016		0.731		<1
6/7/2016	<1			
6/8/2016			<1	
8/15/2016		<1	<1	0.549
8/16/2016	<1			
10/10/2016	<1	<1		
10/11/2016			0.867	<1
12/14/2016	0.72	<1	<1	<1
2/17/2017		<1	<1	<1
2/21/2017	<1			
4/17/2017	1.69 (o)	0.774	1.93 (o)	6.7 (o)
6/19/2017	<1	<1		
6/21/2017			<1	<1
8/7/2017	<1	<1		
8/8/2017			<1	<1
10/16/2017	<1	<1		
10/17/2017			<1	<1
3/5/2018		<1		
3/6/2018	<1			
3/7/2018			<1	<1
6/19/2018	0.826	<1		
6/20/2018			0.684	<1
8/27/2018	<1	<1		
8/29/2018			<1	<1
3/18/2019	<1			
3/19/2019		<1		
3/20/2019			<1	0.523
8/6/2019	0.643			
8/7/2019		0.596	<1	0.625
4/7/2020	0.864	<1	<1	<1
9/18/2020	<1	<1	<1	<1
4/5/2021	<1	<1	<1	0.516
9/1/2021	<1	<1	<1	<1
4/20/2022	<1	<1	<1	<1
9/14/2022	<1	<1	<1	<1
4/11/2023	<1		<1	<1
4/12/2023		<1		
9/18/2023		<1		
9/19/2023	<1		<1	<1
4/11/2024		<1		
4/12/2024	<1			
4/15/2024			<1	<1
9/10/2024		<1		
9/11/2024	<1		<1	<1
4/16/2025	0.312	0.281		
4/17/2025			0.262	0.257
9/8/2025		0.218		
9/9/2025	0.311		0.261	
9/10/2025				0.293

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
6/8/2016	<1			
8/15/2016	<1			
10/10/2016	<1			
12/12/2016	<1			
2/21/2017	0.993			
4/18/2017	0.768			
6/20/2017	<1			
8/8/2017	<1			
10/16/2017	<1			
3/6/2018	<1	<1		
6/19/2018	<1	<1		
6/20/2018			<1	0.653
8/27/2018		<1	<1	<1
8/28/2018	<1			
3/18/2019				<1
3/19/2019		<1	<1	
3/20/2019	<1			
8/6/2019		0.507	<1	<1
8/7/2019	<1			
4/7/2020	<1	<1	<1	<1
9/18/2020	<1	<1	<1	<1
4/5/2021	<1	<1	<1	<1
9/1/2021	<1	<1	<1	<1
4/20/2022	<1	<1	<1	<1
9/14/2022	<1	<1	<1	<1
4/10/2023		<1		
4/11/2023	<1			<1
4/12/2023			<1	
9/18/2023		<1	<1	
9/19/2023	<1			<1
4/11/2024		<1	<1	
4/12/2024	<1			<1
9/10/2024	<1	<1	<1	
9/11/2024				<1
4/15/2025		0.268	0.236	
4/16/2025	0.154			0.22
9/8/2025		0.289	0.281	
9/9/2025	0.174			0.222

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
6/7/2016			<1	<1
8/16/2016			<1	<1
10/11/2016			<1	<1
12/12/2016			<1	1.88
2/17/2017			0.664	
2/21/2017				2.14
4/17/2017			0.801	0.627
6/20/2017			<1	<1
8/7/2017			<1	
8/8/2017				<1
10/16/2017			<1	
10/17/2017				<1
3/6/2018			<1	<1
6/21/2018			<1	<1
8/28/2018			<1	
8/29/2018				<1
3/19/2019			0.771	<1
8/7/2019			0.525	<1
4/7/2020			<1	<1
9/18/2020	<1	<0.1	<1	<1
4/5/2021	<1	<0.1	<1	<1
9/1/2021	<1	<0.1	<1	<1
4/20/2022	<1	<0.1	<1	<1
9/14/2022	<1	<0.1	<1	<1
4/12/2023	<1	<0.1	<1	<1
9/20/2023	<1	<0.1	<1	<1
4/12/2024	<1	<0.1		
4/15/2024			<1	<1
9/11/2024	<1	<0.1		
9/12/2024			<1	<1
4/16/2025	0.181	<0.1		
4/18/2025			0.268	0.193
9/9/2025	0.187	0.173		
9/10/2025			0.274	0.173

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
6/7/2016	<1
8/16/2016	<1
10/11/2016	<1
12/12/2016	2.02
2/21/2017	1.89
4/17/2017	0.814
6/21/2017	<1
8/8/2017	<1
10/17/2017	<1
3/6/2018	<1
6/21/2018	<1
8/29/2018	<1
3/19/2019	<1
8/7/2019	0.535
4/7/2020	0.652
9/18/2020	<1
4/5/2021	<1
9/1/2021	<1
4/20/2022	<1
9/14/2022	<1
4/12/2023	<1
9/20/2023	<1
4/15/2024	<1
9/12/2024	<1
4/18/2025	0.303
9/10/2025	0.273

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Iron (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
10/10/2016	<0.1	1.8		
10/11/2016			<0.1	<0.1
8/7/2017	<0.1	1.58		
8/8/2017			<0.1	<0.1
8/6/2019	<0.1			
8/7/2019		3.33	<0.1	<0.1
4/7/2020	<0.1	3.36	<0.1	<0.1
9/18/2020	<0.1	4.38	<0.1	<0.1
4/5/2021	0.167	2.08	<0.1	<0.1
9/1/2021	0.141	4.37	<0.1	<0.1
4/20/2022	0.565	2.49	0.165	<0.1
9/14/2022	0.609	2.7	<0.1	<0.1
4/11/2023	0.708		<0.1	<0.1
4/12/2023		1.09		
9/18/2023		2.45		
9/19/2023	0.451		<0.1	<0.1
4/11/2024		0.982		
4/12/2024	1.29			
4/15/2024			<0.1	<0.1
9/10/2024		2.86		
9/11/2024	1.53		<0.1	<0.1
4/16/2025	1.44	1.4		
4/17/2025			0.163	<0.1
9/8/2025		2.58		
9/9/2025	1.13		<0.1	
9/10/2025				<0.1

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Iron (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
10/10/2016	<0.1			
8/8/2017	<0.1			
8/6/2019		<0.1	0.231	<0.1
8/7/2019	<0.1			
4/7/2020	<0.1	<0.1	0.485	<0.1
9/18/2020	<0.1	<0.1	<0.1	<0.1
4/5/2021	<0.1	<0.1	0.348	<0.1
9/1/2021	<0.1	<0.1	0.136	<0.1
4/20/2022	<0.1	<0.1	0.492	<0.1
9/14/2022	<0.1	<0.1	0.117	<0.1
4/10/2023		<0.1		
4/11/2023	<0.1			<0.1
4/12/2023			0.21	
9/18/2023		<0.1	<0.1	
9/19/2023	<0.1			<0.1
4/11/2024		<0.1	0.239	
4/12/2024	<0.1			<0.1
9/10/2024	<0.1	0.189	0.16	
9/11/2024				<0.1
4/15/2025		0.215	2.53	
4/16/2025	<0.1			<0.1
9/8/2025		0.196	0.192	
9/9/2025	<0.1			<0.1

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Iron (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
10/11/2016			1.5	2.49
8/7/2017			1.68	
8/8/2017				2.51
8/7/2019			1.61	2.6
4/7/2020			5.55	1.88
9/18/2020	<0.1	<0.1	0.895	1.86
4/5/2021	<0.1	<0.1	<0.1	1.85
9/1/2021	<0.1	0.11	<0.1	2.21
4/20/2022	<0.1	0.281	<0.1	1.99
9/14/2022	<0.1	0.594	0.25	2.03
4/12/2023	0.456	0.338	0.423	1.83
9/20/2023	<0.1	<0.1	0.559	2.18
4/12/2024	<0.1	0.181		
4/15/2024			0.309	1.78
9/11/2024	<0.1	<0.1		
9/12/2024			0.797	2.06
4/16/2025	<0.1	2.37		
4/18/2025			0.31	2.25
9/9/2025	<0.1	<0.1		
9/10/2025			0.931	2.07

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Iron (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
10/11/2016	3.12
8/8/2017	3.09
8/7/2019	3.39
4/7/2020	3.47
9/18/2020	3.45
4/5/2021	3.57
9/1/2021	3.83
4/20/2022	3.61
9/14/2022	3.43
4/12/2023	3.43
9/20/2023	3.09
4/15/2024	3.42
9/12/2024	3.6
4/18/2025	3.2
9/10/2025	3.11

Time Series

Constituent: Lead (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
6/6/2016		<0.0005		<0.0005
6/7/2016	<0.0005			
6/8/2016			<0.0005	
8/15/2016		<0.0005	<0.0005	<0.0005
8/16/2016	<0.0005			
10/10/2016	<0.0005	<0.0005		
10/11/2016			<0.0005	<0.0005
12/14/2016	<0.0005	<0.0005	<0.0005	<0.0005
2/17/2017		<0.0005	<0.0005	<0.0005
2/21/2017	<0.0005			
4/17/2017	<0.0005	<0.0005	<0.0005	<0.0005
6/19/2017	<0.0005	<0.0005		
6/21/2017			<0.0005	<0.0005
8/7/2017	<0.0005	<0.0005		
8/8/2017			<0.0005	<0.0005
3/5/2018		<0.0005		
3/6/2018	<0.0005			
3/7/2018			<0.0005	<0.0005
6/19/2018	<0.0005	<0.0005		
6/20/2018			<0.0005	<0.0005
8/27/2018	<0.0005	<0.0005		
8/29/2018			<0.0005	<0.0005
3/18/2019	<0.0005			
3/19/2019		<0.0005		
3/20/2019			<0.0005	<0.0005
8/6/2019	<0.0005			
8/7/2019		<0.0005	<0.0005	<0.0005
4/7/2020	<0.0005	<0.0005	<0.0005	<0.0005
9/18/2020	<0.0005	<0.0005	<0.0005	<0.0005
4/5/2021	<0.0005	<0.0005	<0.0005	<0.0005
9/1/2021	<0.0005	<0.0005	<0.0005	<0.0005
4/20/2022	<0.0005	<0.0005	<0.0005	<0.0005
9/14/2022	<0.0005	<0.0005	<0.0005	<0.0005
4/11/2023	<0.0005		<0.0005	<0.0005
4/12/2023		<0.0005		
9/18/2023		<0.0005		
9/19/2023	<0.0005		<0.0005	<0.0005
4/11/2024		<0.0005		
4/12/2024	<0.0005			
4/15/2024			<0.0005	<0.0005
9/10/2024		<0.0005		
9/11/2024	<0.0005		<0.0005	<0.0005
4/16/2025	<0.0005	<0.0005		
4/17/2025			<0.0005	<0.0005
9/8/2025		<0.0005		
9/9/2025	<0.0005		<0.0005	
9/10/2025				<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Lead (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
6/8/2016	<0.0005			
8/15/2016	<0.0005			
10/10/2016	<0.0005			
12/12/2016	<0.0005			
2/21/2017	<0.0005			
4/18/2017	<0.0005			
6/20/2017	<0.0005			
8/8/2017	<0.0005			
3/6/2018	<0.0005	<0.0005		
6/19/2018	0.000633	<0.0005		
6/20/2018			0.00151	<0.0005
8/27/2018		<0.0005	0.000626	<0.0005
8/28/2018	<0.0005			
3/18/2019				<0.0005
3/19/2019		<0.0005	0.00204	
3/20/2019	<0.0005			
8/6/2019		<0.0005	0.000663	<0.0005
8/7/2019	<0.0005			
4/7/2020	<0.0005	<0.0005	0.00116	<0.0005
9/18/2020	<0.0005	<0.0005	<0.0005	<0.0005
4/5/2021	<0.0005	<0.0005	0.000624	<0.0005
9/1/2021	<0.0005	<0.0005	<0.0005	<0.0005
4/20/2022	<0.0005	<0.0005	0.000596	<0.0005
9/14/2022	<0.0005	<0.0005	<0.0005	<0.0005
4/10/2023		<0.0005		
4/11/2023	<0.0005			<0.0005
4/12/2023			<0.0005	
9/18/2023		<0.0005	<0.0005	
9/19/2023	<0.0005			<0.0005
4/11/2024		<0.0005	<0.0005	
4/12/2024	<0.0005			<0.0005
9/10/2024	<0.0005	<0.0005	<0.0005	
9/11/2024				<0.0005
4/15/2025		<0.0005	0.00115	
4/16/2025	<0.0005			<0.0005
9/8/2025		<0.0005	<0.0005	
9/9/2025	<0.0005			<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Lead (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
6/7/2016			0.00147 (o)	<0.0005
8/16/2016			<0.0005	<0.0005
10/11/2016			<0.0005	<0.0005
12/12/2016			<0.0005	<0.0005
2/17/2017			<0.0005	
2/21/2017				<0.0005
4/17/2017			<0.0005	<0.0005
6/20/2017			<0.0005	<0.0005
8/7/2017			<0.0005	
8/8/2017				<0.0005
3/6/2018			<0.0005	<0.0005
6/21/2018			<0.0005	<0.0005
8/28/2018			<0.0005	
8/29/2018				<0.0005
3/19/2019			<0.0005	<0.0005
8/7/2019			<0.0005	<0.0005
4/7/2020			<0.0005	<0.0005
9/18/2020	<0.0005	<0.0005	0.000532	<0.0005
4/5/2021	<0.0005	<0.0005	<0.0005	<0.0005
9/1/2021	<0.0005	<0.0005	<0.0005	<0.0005
4/20/2022	<0.0005	<0.0005	<0.0005	<0.0005
9/14/2022	<0.0005	0.000536	<0.0005	<0.0005
4/12/2023	<0.0005	0.000528	<0.0005	<0.0005
9/20/2023	<0.0005	<0.0005	0.000576	0.000627
4/12/2024	<0.0005	<0.0005		
4/15/2024			<0.0005	<0.0005
9/11/2024	<0.0005	<0.0005		
9/12/2024			<0.0005	<0.0005
4/16/2025	<0.0005	0.00108		
4/18/2025			<0.0005	<0.0005
9/9/2025	<0.0005	<0.0005		
9/10/2025			<0.0005	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Lead (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
6/7/2016	<0.0005
8/16/2016	<0.0005
10/11/2016	<0.0005
12/12/2016	<0.0005
2/21/2017	<0.0005
4/17/2017	<0.0005
6/21/2017	<0.0005
8/8/2017	<0.0005
3/6/2018	<0.0005
6/21/2018	<0.0005
8/29/2018	<0.0005
3/19/2019	<0.0005
8/7/2019	<0.0005
4/7/2020	<0.0005
9/18/2020	<0.0005
4/5/2021	<0.0005
9/1/2021	<0.0005
4/20/2022	<0.0005
9/14/2022	<0.0005
4/12/2023	<0.0005
9/20/2023	<0.0005
4/15/2024	<0.0005
9/12/2024	<0.0005
4/18/2025	<0.0005
9/10/2025	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Magnesium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
10/10/2016	44.1	33.8		
10/11/2016			122	79.3
8/7/2017	36.4	37.8		
8/8/2017			124	86
8/6/2019	50.1			
8/7/2019		30	103	46.9
4/7/2020	37.1	31.4	102	71
9/18/2020	31.8	31.9	104	59
4/5/2021	31.8	32.2	116	55.4
9/1/2021	31	31.3	119	54
4/20/2022	27.7	35	120	56
9/14/2022	30.1	33.3	122	56.1
4/11/2023	31.1		122	48.7
4/12/2023		34.5		
9/18/2023		34.7		
9/19/2023	31.5		122	54
4/11/2024		41.5		
4/12/2024	32.7			
4/15/2024			135	51.6
9/10/2024		41.1		
9/11/2024	34.3		134	53.8
4/16/2025	34.4	46.1		
4/17/2025			134	53.2
9/8/2025		36.4		
9/9/2025	32.4		124	
9/10/2025				34.2

Time Series

Constituent: Magnesium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
10/10/2016	76.6			
8/8/2017	72.1			
8/6/2019		33	24.7	44.2
8/7/2019	62.5			
4/7/2020	46.9	34.5	28.5	43
9/18/2020	45.6	31.1	24.3	32
4/5/2021	34.9	31	25.3	33
9/1/2021	40.8	31.4	24.8	30.3
4/20/2022	40.2	29.6	23.3	28.3
9/14/2022	39.1	31.8	24.6	29.1
4/10/2023		31.5		
4/11/2023	33			34.7
4/12/2023			24.4	
9/18/2023		32	25.4	
9/19/2023	42.8			29.9
4/11/2024		33	26.6	
4/12/2024	24.9			30.7
9/10/2024	41.3	33.1	25.9	
9/11/2024				31
4/15/2025		30.7	27.1	
4/16/2025	40.5			32.7
9/8/2025		31	21.9	
9/9/2025	23.7			34.6

Time Series

Constituent: Magnesium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
10/11/2016			31.4	42
8/7/2017			33.4	
8/8/2017				43.8
8/7/2019			34	42.8
4/7/2020			34	39.6
9/18/2020	53.4	29.2	33.2	36.6
4/5/2021	49.5	10.7	34.3	35.7
9/1/2021	50.8	28.4	35.6	35.2
4/20/2022	46.4	12.9	35.1	35
9/14/2022	49.9	17.3	33.6	36.8
4/12/2023	52.3	11.9	33.9	34.8
9/20/2023	48.9	15.5	33.6	37.6
4/12/2024	50.5	15.4		
4/15/2024			35.6	36.5
9/11/2024	45.3	27.9		
9/12/2024			35.9	36.4
4/16/2025	43.3	13		
4/18/2025			32.3	36.3
9/9/2025	44.8	24.2		
9/10/2025			35.7	38.3

Time Series

Constituent: Magnesium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
10/11/2016	23.5
8/8/2017	24.7
8/7/2019	25.4
4/7/2020	29.4
9/18/2020	28.5
4/5/2021	28.8
9/1/2021	29.6
4/20/2022	28.6
9/14/2022	29.4
4/12/2023	31.2
9/20/2023	27.2
4/15/2024	31
9/12/2024	30.8
4/18/2025	28.8
9/10/2025	27.5

Time Series

Constituent: Manganese (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
10/10/2016	0.28	0.151		
10/11/2016			<0.01	<0.01
8/7/2017	0.237	0.166		
8/8/2017			<0.01	<0.01
8/6/2019	0.758			
8/7/2019		0.177	<0.01	<0.01
4/7/2020	0.119	0.184	<0.01	<0.01
9/18/2020	0.652	0.251	<0.01	<0.01
4/5/2021	0.185	0.199	<0.01	<0.01
9/1/2021	0.663	0.221	<0.01	<0.01
4/20/2022	0.411	0.231	0.0264	<0.01
9/14/2022	0.749	0.31	<0.01	<0.01
4/11/2023	0.309		<0.01	<0.01
4/12/2023		0.396		
9/18/2023		0.266		
9/19/2023	0.37		<0.01	<0.01
4/11/2024		0.233		
4/12/2024	0.509			
4/15/2024			<0.01	<0.01
9/10/2024		0.255		
9/11/2024	0.491		<0.01	<0.01
4/16/2025	0.434	0.285		
4/17/2025			<0.01	<0.01
9/8/2025		0.165		
9/9/2025	0.366		<0.01	
9/10/2025				<0.01

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Manganese (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
10/10/2016	<0.01			
8/8/2017	<0.01			
8/6/2019		1.74 (o)	0.0443	0.0223
8/7/2019	<0.01			
4/7/2020	<0.01	0.0896	0.0718	0.0156
9/18/2020	<0.01	1.36	0.0127	<0.01
4/5/2021	<0.01	0.175	0.0634	<0.01
9/1/2021	<0.01	1.27	0.0444	0.0126
4/20/2022	<0.01	0.106	0.0588	<0.01
9/14/2022	<0.01	0.795	0.0222	<0.01
4/10/2023		0.0633		
4/11/2023	<0.01			0.0144
4/12/2023			0.0372	
9/18/2023		0.767	0.0169	
9/19/2023	<0.01			0.0183
4/11/2024		0.118	0.037	
4/12/2024	<0.01			0.0156
9/10/2024	<0.01	0.677	0.0301	
9/11/2024				0.0111
4/15/2025		0.382	0.0499	
4/16/2025	<0.01			0.0166
9/8/2025		0.48	0.02	
9/9/2025	0.32			0.0326

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Manganese (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
10/11/2016			0.133	0.69
8/7/2017			0.132	
8/8/2017				0.689
8/7/2019			0.145	0.784
4/7/2020			0.13	0.492
9/18/2020	0.0501	0.0345	0.686	0.546
4/5/2021	0.0395	0.0278	1.39	0.467
9/1/2021	0.0629	0.0375	1.39	0.512
4/20/2022	0.019	0.0722	0.91	0.454
9/14/2022	0.0917	0.0406	0.871	0.532
4/12/2023	0.0983	0.0378	0.51	0.453
9/20/2023	0.111	0.0231	0.612	0.594
4/12/2024	0.0697	0.0376		
4/15/2024			0.395	0.506
9/11/2024	0.0458	0.0168		
9/12/2024			0.491	0.554
4/16/2025	0.0423	0.094		
4/18/2025			0.241	0.478
9/9/2025	0.146	0.0138		
9/10/2025			0.386	0.53

Time Series

Constituent: Manganese (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
10/11/2016	0.0818
8/8/2017	0.0802
8/7/2019	0.0941
4/7/2020	0.103
9/18/2020	0.113
4/5/2021	0.109
9/1/2021	0.117
4/20/2022	0.112
9/14/2022	0.112
4/12/2023	0.113
9/20/2023	0.0995
4/15/2024	0.114
9/12/2024	0.118
4/18/2025	0.111
9/10/2025	0.0942

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
6/6/2016		<0.002		<0.002
6/7/2016	<0.002			
6/8/2016			<0.002	
8/15/2016		<0.002	<0.002	<0.002
8/16/2016	<0.002			
10/10/2016	<0.002	<0.002		
10/11/2016			<0.002	<0.002
12/14/2016	<0.002	<0.002	<0.002	<0.002
2/17/2017		<0.002	<0.002	<0.002
2/21/2017	<0.002			
4/17/2017	<0.002	<0.002	<0.002	<0.002
6/19/2017	<0.002	<0.002		
6/21/2017			<0.002	<0.002
8/7/2017	<0.002	<0.002		
8/8/2017			<0.002	<0.002
3/5/2018		<0.002		
3/6/2018	0.0022			
3/7/2018			<0.002	<0.002
5/14/2018	<0.002			
6/19/2018	<0.002	<0.002		
6/20/2018			<0.002	<0.002
8/27/2018	0.00224	0.0022		
8/29/2018			<0.002	<0.002
3/18/2019	<0.002			
3/19/2019		0.00341		
3/20/2019			<0.002	<0.002
8/6/2019	<0.002			
8/7/2019		0.00219	<0.002	<0.002
4/7/2020	<0.002	0.00215	<0.002	<0.002
9/18/2020	<0.002	<0.002	<0.002	<0.002
4/5/2021	<0.002	<0.002	<0.002	<0.002
9/1/2021	0.00218	0.00217	<0.002	<0.002
4/20/2022	<0.002	<0.002	<0.002	<0.002
9/14/2022	<0.002	<0.002	<0.002	<0.002
4/11/2023	<0.002		<0.002	<0.002
4/12/2023		<0.002		
9/18/2023		<0.002		
9/19/2023	<0.002		<0.002	<0.002
4/11/2024		<0.002		
4/12/2024	<0.002			
4/15/2024			<0.002	<0.002
9/10/2024		0.00287		
9/11/2024	0.00205		<0.002	<0.002
4/16/2025	<0.002	<0.002		
4/17/2025			0.00322	0.0109
9/8/2025		0.00216		
9/9/2025	<0.002		<0.002	
9/10/2025				<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
6/8/2016	<0.002			
8/15/2016	<0.002			
10/10/2016	<0.002			
12/12/2016	<0.002			
2/21/2017	<0.002			
4/18/2017	<0.002			
6/20/2017	<0.002			
8/8/2017	<0.002			
3/6/2018	<0.002	0.00568		
5/14/2018		0.00385		
6/19/2018	0.00383	0.00423		
6/20/2018			0.00822	0.00447
8/27/2018		0.00424	0.00617	<0.002
8/28/2018	<0.002			
3/18/2019				<0.002
3/19/2019		0.00263	<0.002	
3/20/2019	<0.002			
8/6/2019		0.00574	<0.002	<0.002
8/7/2019	<0.002			
4/7/2020	<0.002	0.00297	<0.002	<0.002
9/18/2020	<0.002	0.00529	<0.002	<0.002
4/5/2021	<0.002	<0.002	<0.002	<0.002
9/1/2021	<0.002	0.00558	<0.002	<0.002
4/20/2022	<0.002	0.0042	<0.002	<0.002
9/14/2022	<0.002	0.00446	<0.002	<0.002
4/10/2023		0.00364		
4/11/2023	<0.002			<0.002
4/12/2023			<0.002	
9/18/2023		0.00661	<0.002	
9/19/2023	<0.002			<0.002
4/11/2024		0.00217	<0.002	
4/12/2024	<0.002			<0.002
9/10/2024	<0.002	0.00578	<0.002	
9/11/2024				<0.002
4/15/2025		0.00415	<0.002	
4/16/2025	<0.002			<0.002
9/8/2025		0.0051	<0.002	
9/9/2025	<0.002			0.0025

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
6/7/2016			<0.002	<0.002
8/16/2016			<0.002	<0.002
10/11/2016			<0.002	<0.002
12/12/2016			<0.002	<0.002
2/17/2017			<0.002	
2/21/2017				<0.002
4/17/2017			<0.002	<0.002
6/20/2017			<0.002	<0.002
8/7/2017			<0.002	
8/8/2017				<0.002
3/6/2018			<0.002	<0.002
6/21/2018			<0.002	<0.002
8/28/2018			<0.002	
8/29/2018				<0.002
3/19/2019			<0.002	0.00212
8/7/2019			<0.002	<0.002
4/7/2020			<0.002	<0.002
9/18/2020	<0.002	<0.002	0.00296	<0.002
4/5/2021	0.00239	<0.002	<0.002	<0.002
9/1/2021	<0.002	<0.002	<0.002	<0.002
4/20/2022	<0.002	<0.002	<0.002	<0.002
9/14/2022	<0.002	<0.002	<0.002	<0.002
4/12/2023	<0.002	<0.002	<0.002	<0.002
9/20/2023	<0.002	<0.002	<0.002	<0.002
4/12/2024	<0.002	<0.002		
4/15/2024			<0.002	<0.002
9/11/2024	<0.002	<0.002		
9/12/2024			<0.002	<0.002
4/16/2025	<0.002	<0.002		
4/18/2025			<0.002	<0.002
9/9/2025	<0.002	<0.002		
9/10/2025			<0.002	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
6/7/2016	<0.002
8/16/2016	<0.002
10/11/2016	<0.002
12/12/2016	<0.002
2/21/2017	<0.002
4/17/2017	<0.002
6/21/2017	<0.002
8/8/2017	<0.002
3/6/2018	<0.002
6/21/2018	<0.002
8/29/2018	<0.002
3/19/2019	<0.002
8/7/2019	<0.002
4/7/2020	<0.002
9/18/2020	<0.002
4/5/2021	<0.002
9/1/2021	<0.002
4/20/2022	<0.002
9/14/2022	<0.002
4/12/2023	<0.002
9/20/2023	<0.002
4/15/2024	<0.002
9/12/2024	<0.002
4/18/2025	<0.002
9/10/2025	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Nickel (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
10/10/2016	<0.005	<0.005		
10/11/2016			<0.005	<0.005
8/7/2017	<0.005	<0.005		
8/8/2017			<0.005	<0.005
8/6/2019	<0.005			
8/7/2019		<0.005	<0.005	<0.005
4/7/2020	<0.005	<0.005	<0.005	<0.005
9/18/2020	0.00628	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005
4/11/2023	<0.005		<0.005	<0.005
4/12/2023		<0.005		
9/18/2023		<0.005		
9/19/2023	<0.005		<0.005	<0.005
4/11/2024		<0.005		
4/12/2024	<0.005			
4/15/2024			<0.005	<0.005
9/10/2024		<0.005		
9/11/2024	<0.005		<0.005	<0.005
4/16/2025	<0.005	<0.005		
4/17/2025			<0.005	<0.005
9/8/2025		<0.005		
9/9/2025	<0.005		<0.005	
9/10/2025				<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Nickel (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
10/10/2016	0.00799			
8/8/2017	0.00699			
8/6/2019		<0.005	<0.005	<0.005
8/7/2019	0.0079			
4/7/2020	0.00576	<0.005	<0.005	<0.005
9/18/2020	0.00604	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005
9/1/2021	0.00518	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005
4/10/2023		<0.005		
4/11/2023	<0.005			<0.005
4/12/2023			<0.005	
9/18/2023		<0.005	<0.005	
9/19/2023	<0.005			<0.005
4/11/2024		<0.005	<0.005	
4/12/2024	<0.005			<0.005
9/10/2024	<0.005	<0.005	<0.005	
9/11/2024				<0.005
4/15/2025		<0.005	<0.005	
4/16/2025	<0.005			<0.005
9/8/2025		<0.005	<0.005	
9/9/2025	0.0206			<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Nickel (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
10/11/2016			<0.005	<0.005
8/7/2017			<0.005	
8/8/2017				<0.005
8/7/2019			<0.005	<0.005
4/7/2020			<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	0.00578	<0.005
9/14/2022	<0.005	<0.005	0.00503	<0.005
4/12/2023	<0.005	<0.005	0.0051	<0.005
9/20/2023	<0.005	<0.005	<0.005	<0.005
4/12/2024	<0.005	<0.005		
4/15/2024			<0.005	<0.005
9/11/2024	<0.005	<0.005		
9/12/2024			<0.005	<0.005
4/16/2025	<0.005	<0.005		
4/18/2025			<0.005	<0.005
9/9/2025	<0.005	<0.005		
9/10/2025			<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Nickel (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
10/11/2016	<0.005
8/8/2017	<0.005
8/7/2019	<0.005
4/7/2020	<0.005
9/18/2020	<0.005
4/5/2021	<0.005
9/1/2021	<0.005
4/20/2022	<0.005
9/14/2022	<0.005
4/12/2023	<0.005
9/20/2023	<0.005
4/15/2024	<0.005
9/12/2024	<0.005
4/18/2025	<0.005
9/10/2025	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Selenium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
6/6/2016		<0.005		<0.005
6/7/2016	<0.005			
6/8/2016			0.0071	
8/15/2016		<0.005	0.00811	<0.005
8/16/2016	<0.005			
10/10/2016	<0.005	<0.005		
10/11/2016			0.00821	<0.005
12/14/2016	<0.005	<0.005	0.00834	<0.005
2/17/2017		<0.005	0.00752	<0.005
2/21/2017	<0.005			
4/17/2017	<0.005	<0.005	0.00823	<0.005
6/19/2017	<0.005	<0.005		
6/21/2017			0.00829	<0.005
8/7/2017	<0.005	<0.005		
8/8/2017			0.00759	<0.005
3/5/2018		<0.005		
3/6/2018	<0.005			
3/7/2018			<0.005	0.00502
6/19/2018	<0.005	<0.005		
6/20/2018			0.00739	<0.005
8/27/2018	<0.005	<0.005		
8/29/2018			0.00827	<0.005
3/18/2019	<0.005			
3/19/2019		<0.005		
3/20/2019			0.00569	<0.005
8/6/2019	<0.005			
8/7/2019		<0.005	<0.005	<0.005
4/7/2020	<0.005	<0.005	<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005
4/11/2023	<0.005		<0.005	<0.005
4/12/2023		<0.005		
9/18/2023		<0.005		
9/19/2023	<0.005		<0.005	<0.005
4/11/2024		<0.005		
4/12/2024	<0.005			
4/15/2024			<0.005	<0.005
9/10/2024		<0.005		
9/11/2024	<0.005		<0.005	<0.005
4/16/2025	<0.005	<0.005		
4/17/2025			<0.005	<0.005
9/8/2025		<0.005		
9/9/2025	<0.005		<0.005	
9/10/2025				<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Selenium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
6/8/2016	0.0165			
8/15/2016	0.0103			
10/10/2016	0.0137			
12/12/2016	0.0119			
2/21/2017	0.0074			
4/18/2017	0.00674			
6/20/2017	0.0106			
8/8/2017	0.0109			
3/6/2018	<0.005	<0.005		
6/19/2018	0.00939	<0.005		
6/20/2018			<0.005	<0.005
8/27/2018		<0.005	<0.005	<0.005
8/28/2018	<0.005			
3/18/2019				<0.005
3/19/2019		<0.005	<0.005	
3/20/2019	0.0102			
8/6/2019		<0.005	<0.005	<0.005
8/7/2019	0.0108			
4/7/2020	0.00632	<0.005	<0.005	<0.005
9/18/2020	0.00762	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005
9/1/2021	0.00617	<0.005	<0.005	<0.005
4/20/2022	0.00634	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005
4/10/2023		<0.005		
4/11/2023	<0.005			<0.005
4/12/2023			<0.005	
9/18/2023		<0.005	<0.005	
9/19/2023	0.0053			<0.005
4/11/2024		<0.005	<0.005	
4/12/2024	<0.005			<0.005
9/10/2024	0.00666	<0.005	<0.005	
9/11/2024				<0.005
4/15/2025		<0.005	<0.005	
4/16/2025	0.00832			<0.005
9/8/2025		<0.005	<0.005	
9/9/2025	<0.005			<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Selenium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
6/7/2016			<0.005	<0.005
8/16/2016			<0.005	<0.005
10/11/2016			<0.005	<0.005
12/12/2016			<0.005	<0.005
2/17/2017			<0.005	
2/21/2017				<0.005
4/17/2017			<0.005	<0.005
6/20/2017			<0.005	<0.005
8/7/2017			<0.005	
8/8/2017				<0.005
3/6/2018			<0.005	<0.005
6/21/2018			<0.005	<0.005
8/28/2018			<0.005	
8/29/2018				<0.005
3/19/2019			<0.005	<0.005
8/7/2019			<0.005	<0.005
4/7/2020			<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005
4/12/2023	<0.005	<0.005	<0.005	<0.005
9/20/2023	<0.005	<0.005	<0.005	<0.005
4/12/2024	<0.005	<0.005		
4/15/2024			<0.005	<0.005
9/11/2024	<0.005	<0.005		
9/12/2024			<0.005	<0.005
4/16/2025	<0.005	<0.005		
4/18/2025			<0.005	<0.005
9/9/2025	<0.005	<0.005		
9/10/2025			<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Selenium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
6/7/2016	<0.005
8/16/2016	<0.005
10/11/2016	<0.005
12/12/2016	<0.005
2/21/2017	<0.005
4/17/2017	<0.005
6/21/2017	<0.005
8/8/2017	<0.005
3/6/2018	<0.005
6/21/2018	<0.005
8/29/2018	<0.005
3/19/2019	<0.005
8/7/2019	<0.005
4/7/2020	<0.005
9/18/2020	<0.005
4/5/2021	<0.005
9/1/2021	<0.005
4/20/2022	<0.005
9/14/2022	<0.005
4/12/2023	<0.005
9/20/2023	<0.005
4/15/2024	<0.005
9/12/2024	<0.005
4/18/2025	<0.005
9/10/2025	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Strontium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
10/10/2016	0.338	0.156		
10/11/2016			0.279	0.185
8/7/2017	0.243	0.165		
8/8/2017			0.257	0.178
8/6/2019	0.323			
8/7/2019		0.199	0.274	0.134
4/7/2020	0.233	0.19	0.246	0.154
9/18/2020	0.176	0.19	0.259	0.153
4/5/2021	0.188	0.179	0.261	0.133
9/1/2021	0.172	0.227	0.282	0.136
4/20/2022	0.164	0.173	0.247	0.149
9/14/2022	0.16	0.191	0.266	0.127
4/11/2023	0.148		0.293	0.0985
4/12/2023		0.178		
9/18/2023		0.207		
9/19/2023	0.151		0.282	0.113
4/11/2024		0.188		
4/12/2024	0.172			
4/15/2024			0.301	0.125
9/10/2024		0.197		
9/11/2024	0.181		0.298	0.117
4/16/2025	0.159	0.169		
4/17/2025			0.229	0.107
9/8/2025		0.164		
9/9/2025	0.151		0.243	
9/10/2025				0.0826

Time Series

Constituent: Strontium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
10/10/2016	0.291			
8/8/2017	0.256			
8/6/2019		0.133	0.0872	0.123
8/7/2019	0.263			
4/7/2020	0.175	0.129	0.0661	0.109
9/18/2020	0.184	0.108	0.0602	0.0824
4/5/2021	0.148	0.13	0.0639	0.0899
9/1/2021	0.178	0.115	0.068	0.085
4/20/2022	0.169	0.127	0.0595	0.0802
9/14/2022	0.155	0.111	0.0592	0.0746
4/10/2023		0.137		
4/11/2023	0.153			0.0795
4/12/2023			0.0526	
9/18/2023		0.101	0.0601	
9/19/2023	0.164			0.0768
4/11/2024		0.103	0.0585	
4/12/2024	0.153			0.0703
9/10/2024	0.181	0.106	0.0598	
9/11/2024				0.0754
4/15/2025		0.124	0.0665	
4/16/2025	0.173			0.0806
9/8/2025		0.119	0.053	
9/9/2025	0.166			0.079

Time Series

Constituent: Strontium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
10/11/2016			0.103	0.193
8/7/2017			0.11	
8/8/2017				0.197
8/7/2019			0.115	0.208
4/7/2020			0.103	0.166
9/18/2020	0.174	0.106	0.146	0.167
4/5/2021	0.159	0.0986	0.129	0.163
9/1/2021	0.159	0.128	0.14	0.17
4/20/2022	0.145	0.0575	0.122	0.168
9/14/2022	0.145	0.0659	0.101	0.167
4/12/2023	0.133	0.0512	0.091	0.149
9/20/2023	0.135	0.0752	0.0958	0.163
4/12/2024	0.147	0.069		
4/15/2024			0.0951	0.166
9/11/2024	0.127	0.113		
9/12/2024			0.103	0.162
4/16/2025	0.119	0.067		
4/18/2025			0.0917	0.159
9/9/2025	0.12	0.122		
9/10/2025			0.101	0.161

Time Series

Constituent: Strontium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
10/11/2016	0.156
8/8/2017	0.161
8/7/2019	0.178
4/7/2020	0.173
9/18/2020	0.187
4/5/2021	0.188
9/1/2021	0.204
4/20/2022	0.194
9/14/2022	0.184
4/12/2023	0.194
9/20/2023	0.165
4/15/2024	0.19
9/12/2024	0.188
4/18/2025	0.175
9/10/2025	0.162

Time Series

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
6/6/2016		42.1		827
6/7/2016	366			
6/8/2016			1050	
8/15/2016		33.8	1040	605
8/16/2016	187			
10/10/2016	187	36.4		
10/11/2016			1010	607
12/14/2016	149	38.4	1140	732
2/17/2017		47.3	1190	849
2/21/2017	145			
4/17/2017	145	38.3	1200	853
6/19/2017	190	35.4		
6/21/2017			1020	537
8/7/2017	119	39		
8/8/2017			1110	664
10/16/2017	106	46.9		
10/17/2017			1210	835
11/28/2017			1140 (R)	779 (R)
3/5/2018		51.4		
3/6/2018	87.3			
3/7/2018			1110	824
6/19/2018	136	37.3		
6/20/2018			1090	210
8/27/2018	94.7	34.3		
8/29/2018			1070	400
3/18/2019	223			
3/19/2019		42.8		
3/20/2019			1050	351
8/6/2019	276			
8/7/2019		28.8	837	327
4/7/2020	123	18.6	888	496
9/18/2020	100	36.5	924	403
4/5/2021	99.7	27.6	952	338
9/1/2021	82.7	32.3	1010	333
4/20/2022	72.8	48.3	1030	297
9/14/2022	67.1	31.2	978	319
4/11/2023	72.2		1150	254
4/12/2023		39.8		
9/18/2023		57.4		
9/19/2023	94.2		1440	365
4/11/2024		49.6		
4/12/2024	65.7			
4/15/2024			1160	256
9/10/2024		59.9		
9/11/2024	68.9		1110	273
4/16/2025	63.5	84.7		
4/17/2025			808	309
9/8/2025		57		
9/9/2025	68.8		953	
9/10/2025				162

Time Series

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
6/8/2016	713			
8/15/2016	520			
10/10/2016	603			
12/12/2016	645			
2/21/2017	415			
4/18/2017	461			
6/20/2017	541			
8/8/2017	590			
10/16/2017	206			
3/6/2018	53.7	123		
6/19/2018	489	134		
6/20/2018			38.4	101
8/27/2018		125	31.7	70
8/28/2018	96.6			
3/18/2019				90.8
3/19/2019		134	26.2	
3/20/2019	442			
8/6/2019		139	29.7	169
8/7/2019	529			
4/7/2020	373	143	25.5	164
9/18/2020	356	151	25.8	81
4/5/2021	237	154	35.5	91.2
9/1/2021	303	154	25.8	59.3
4/20/2022	293	158	25.4	48.5
9/14/2022	151	220	23	44.5
4/10/2023		147		
4/11/2023	215			87.8
4/12/2023			25	
9/18/2023		208	28.6	
9/19/2023	303			62.9
4/11/2024		160	21.8	
4/12/2024	138			43.8
9/10/2024	248	161	23.8	
9/11/2024				43.8
4/15/2025		143	23.4	
4/16/2025	230			40.5
9/8/2025		149	25.7	
9/9/2025	135			38.2

Time Series

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
6/7/2016			32.2	109
8/16/2016			28.4	109
10/11/2016			27.2	105
12/12/2016			32.7	109
2/17/2017			36	
2/21/2017				111
4/17/2017			39.5	108
6/20/2017			33	108
8/7/2017			35.3	
8/8/2017				114
10/16/2017			45.4	
10/17/2017				135
3/6/2018			162	122
6/21/2018			51.3	119
8/28/2018			52.2	
8/29/2018				120
3/19/2019			48	85
8/7/2019			47	112
4/7/2020			41.5	58.9
9/18/2020	376	119	46.9	61.9
4/5/2021	341	7.63	60.1	57.4
9/1/2021	358	111	50.2	53.7
4/20/2022	322	30.7	58.4	44.7
9/14/2022	313	38.2	49.5	49.9
4/12/2023	72.5	5.13	54	45.8
9/20/2023	380	27	53.1	53.4
4/12/2024	309	36.7		
4/15/2024			56.1	46.3
9/11/2024	234	85		
9/12/2024			65.8	50.4
4/16/2025	269	11.4		
4/18/2025			50.8	35.7
9/9/2025	264	55.2		
9/10/2025			55.8	47.6

Time Series

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
6/7/2016	<5
8/16/2016	<5
10/11/2016	<5
12/12/2016	<5
2/21/2017	5.94
4/17/2017	<5
6/21/2017	<5
8/8/2017	<5
10/17/2017	<5
3/6/2018	<5
6/21/2018	<5
8/29/2018	<5
3/19/2019	<5
8/7/2019	<5
4/7/2020	13.6
9/18/2020	19.1
4/5/2021	27.3
9/1/2021	22.7
4/20/2022	18.9
9/14/2022	16.4
4/12/2023	20.5
9/20/2023	10.1
4/15/2024	18.1
9/12/2024	16.3
4/18/2025	18.5
9/10/2025	20.7

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Vanadium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
10/10/2016	<0.005	<0.005		
10/11/2016			<0.005	<0.005
8/7/2017	<0.005	<0.005		
8/8/2017			<0.005	<0.005
8/6/2019	<0.005			
8/7/2019		<0.005	<0.005	<0.005
4/7/2020	<0.005	<0.005	<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005
4/11/2023	<0.005		<0.005	<0.005
4/12/2023		<0.005		
9/18/2023		<0.005		
9/19/2023	<0.005		<0.005	<0.005
4/11/2024		<0.005		
4/12/2024	<0.005			
4/15/2024			<0.005	<0.005
9/10/2024		<0.005		
9/11/2024	<0.005		<0.005	<0.005
4/16/2025	<0.005	<0.005		
4/17/2025			<0.005	<0.005
9/8/2025		<0.005		
9/9/2025	<0.005		<0.005	
9/10/2025				<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Vanadium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
10/10/2016	<0.005			
8/8/2017	<0.005			
8/6/2019		<0.005	<0.005	<0.005
8/7/2019	<0.005			
4/7/2020	<0.005	<0.005	<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005
4/10/2023		<0.005		
4/11/2023	<0.005			<0.005
4/12/2023			<0.005	
9/18/2023		<0.005	<0.005	
9/19/2023	<0.005			<0.005
4/11/2024		<0.005	<0.005	
4/12/2024	<0.005			<0.005
9/10/2024	<0.005	<0.005	<0.005	
9/11/2024				<0.005
4/15/2025		<0.005	0.00547	
4/16/2025	<0.005			<0.005
9/8/2025		<0.005	<0.005	
9/9/2025	<0.005			<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Vanadium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
10/11/2016			<0.005	<0.005
8/7/2017			<0.005	
8/8/2017				<0.005
8/7/2019			<0.005	<0.005
4/7/2020			<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005
4/12/2023	<0.005	<0.005	<0.005	<0.005
9/20/2023	<0.005	<0.005	<0.005	<0.005
4/12/2024	<0.005	<0.005		
4/15/2024			<0.005	<0.005
9/11/2024	<0.005	<0.005		
9/12/2024			<0.005	<0.005
4/16/2025	<0.005	0.00613		
4/18/2025			<0.005	<0.005
9/9/2025	<0.005	<0.005		
9/10/2025			<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Vanadium (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
10/11/2016	<0.005
8/8/2017	<0.005
8/7/2019	<0.005
4/7/2020	<0.005
9/18/2020	<0.005
4/5/2021	<0.005
9/1/2021	<0.005
4/20/2022	<0.005
9/14/2022	<0.005
4/12/2023	<0.005
9/20/2023	<0.005
4/15/2024	<0.005
9/12/2024	<0.005
4/18/2025	<0.005
9/10/2025	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Zinc (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-15A
10/10/2016	<0.02	<0.02		
10/11/2016			<0.02	<0.02
8/7/2017	<0.02	<0.02		
8/8/2017			<0.02	<0.02
8/6/2019	<0.02			
8/7/2019		<0.02	<0.02	<0.02
4/7/2020	<0.02	<0.02	<0.02	<0.02
9/18/2020	<0.02	<0.02	<0.02	<0.02
4/5/2021	<0.02	<0.02	<0.02	<0.02
9/1/2021	<0.02	<0.02	<0.02	<0.02
4/20/2022	<0.02	<0.02	<0.02	<0.02
9/14/2022	<0.02	<0.02	<0.02	<0.02
4/11/2023	<0.02		<0.02	<0.02
4/12/2023		<0.02		
9/18/2023		<0.02		
9/19/2023	<0.02		<0.02	<0.02
4/11/2024		<0.02		
4/12/2024	<0.02			
4/15/2024			<0.02	<0.02
9/10/2024		<0.02		
9/11/2024	<0.02		0.022	<0.02
4/16/2025	<0.02	<0.02		
4/17/2025			<0.02	<0.02
9/8/2025		<0.02		
9/9/2025	<0.02		<0.02	
9/10/2025				<0.02

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Zinc (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-21	MW-22 (bg)	MW-23 (bg)	MW-24
10/10/2016	<0.02			
8/8/2017	<0.02			
8/6/2019		<0.02	<0.02	<0.02
8/7/2019	<0.02			
4/7/2020	<0.02	<0.02	<0.02	<0.02
9/18/2020	<0.02	<0.02	<0.02	<0.02
4/5/2021	<0.02	<0.02	<0.02	<0.02
9/1/2021	<0.02	<0.02	<0.02	<0.02
4/20/2022	<0.02	<0.02	<0.02	<0.02
9/14/2022	<0.02	<0.02	<0.02	<0.02
4/10/2023		<0.02		
4/11/2023	<0.02			<0.02
4/12/2023			<0.02	
9/18/2023		<0.02	<0.02	
9/19/2023	<0.02			<0.02
4/11/2024		<0.02	<0.02	
4/12/2024	<0.02			<0.02
9/10/2024	<0.02	<0.02	<0.02	
9/11/2024				<0.02
4/15/2025		<0.02	<0.02	
4/16/2025	<0.02			<0.02
9/8/2025		<0.02	<0.02	
9/9/2025	<0.02			<0.02

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Zinc (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27	MW-4B	MW-5B
10/11/2016			<0.02	<0.02
8/7/2017			<0.02	
8/8/2017				<0.02
8/7/2019			<0.02	<0.02
4/7/2020			<0.02	<0.02
9/18/2020	<0.02	<0.02	<0.02	<0.02
4/5/2021	<0.02	<0.02	<0.02	<0.02
9/1/2021	<0.02	<0.02	<0.02	<0.02
4/20/2022	<0.02	<0.02	<0.02	<0.02
9/14/2022	<0.02	<0.02	<0.02	<0.02
4/12/2023	<0.02	<0.02	<0.02	<0.02
9/20/2023	<0.02	<0.02	<0.02	<0.02
4/12/2024	<0.02	<0.02		
4/15/2024			<0.02	<0.02
9/11/2024	<0.02	<0.02		
9/12/2024			<0.02	<0.02
4/16/2025	<0.02	<0.02		
4/18/2025			<0.02	<0.02
9/9/2025	<0.02	<0.02		
9/10/2025			<0.02	<0.02

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Zinc (mg/L) Analysis Run 12/15/2025 3:54 PM View: State Wells Descriptive

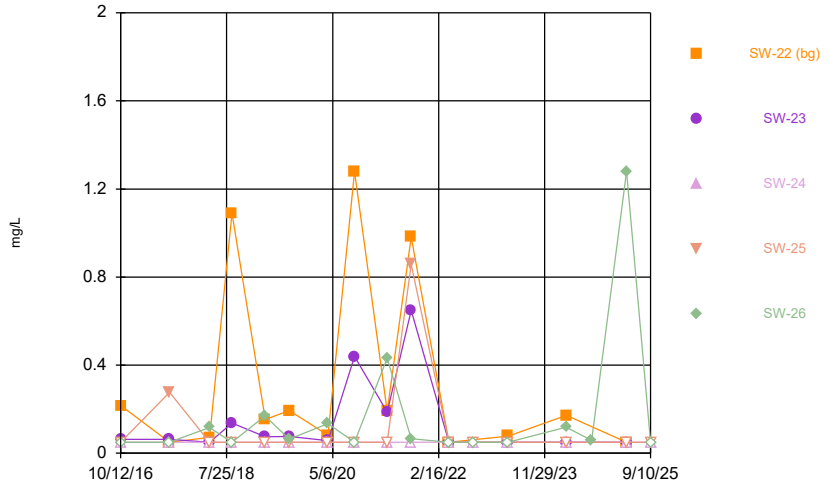
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-6A
10/11/2016	<0.02
8/8/2017	<0.02
8/7/2019	<0.02
4/7/2020	<0.02
9/18/2020	<0.02
4/5/2021	<0.02
9/1/2021	<0.02
4/20/2022	<0.02
9/14/2022	<0.02
4/12/2023	<0.02
9/20/2023	<0.02
4/15/2024	<0.02
9/12/2024	<0.02
4/18/2025	<0.02
9/10/2025	<0.02

ND substitution: RL or RL/2 if <15% NDs.

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Hollow symbols indicate censored values.

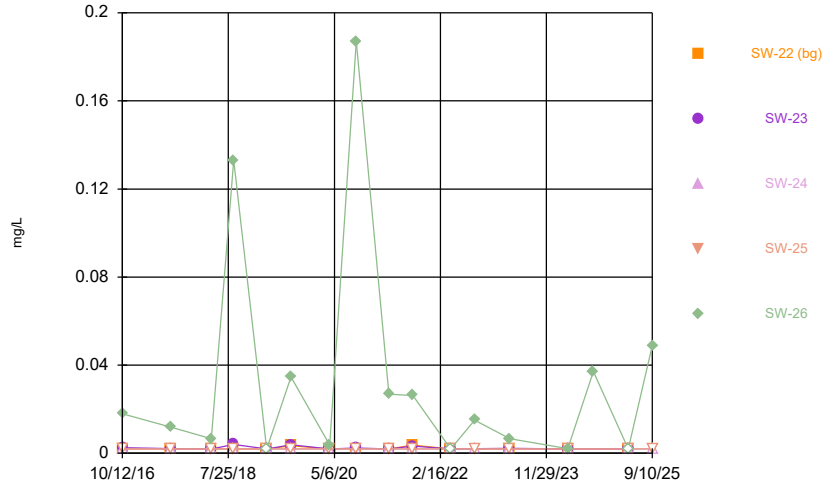
Time Series



Constituent: Aluminum Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

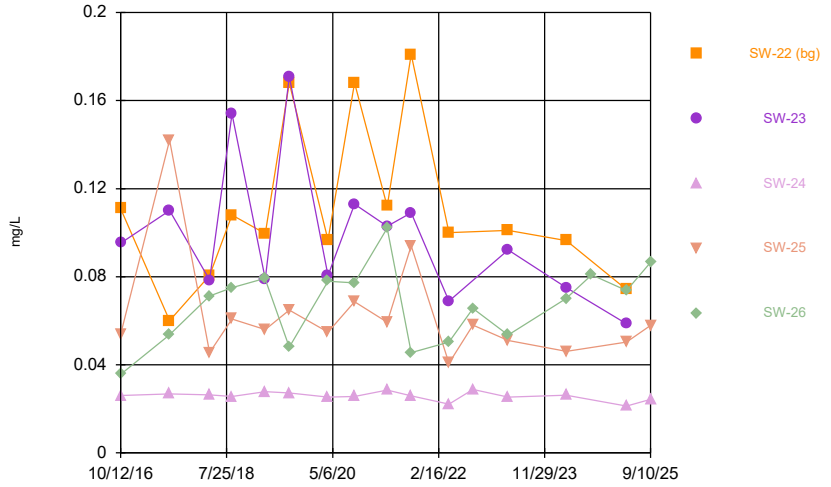
Time Series



Constituent: Arsenic Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

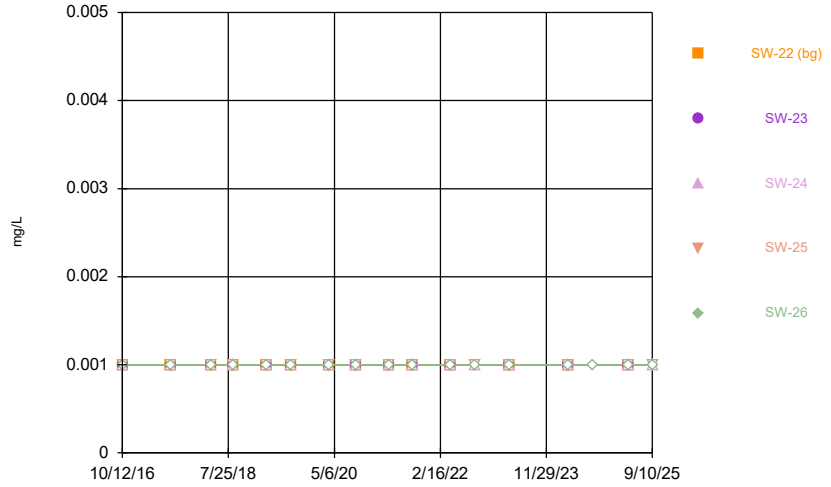
Time Series



Constituent: Barium Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

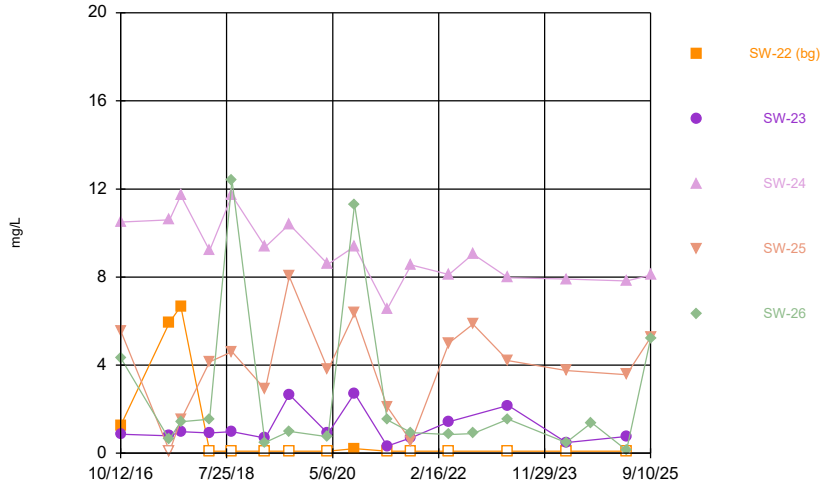
Time Series



Constituent: Beryllium Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

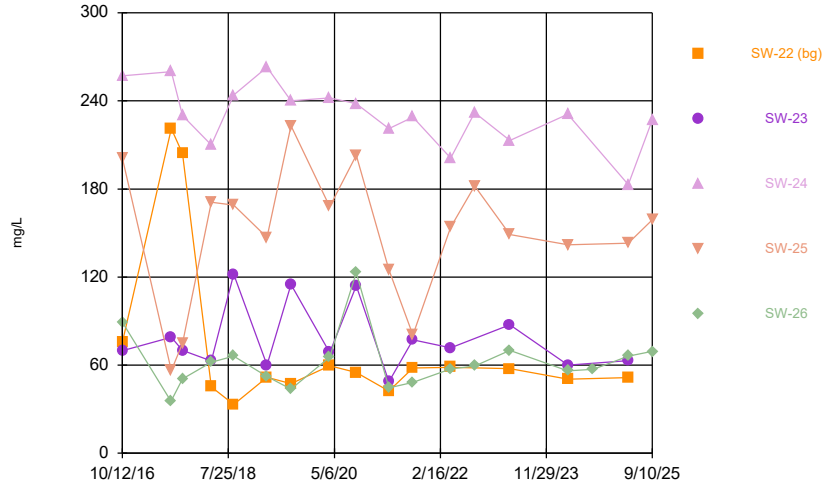
Time Series



Constituent: Boron Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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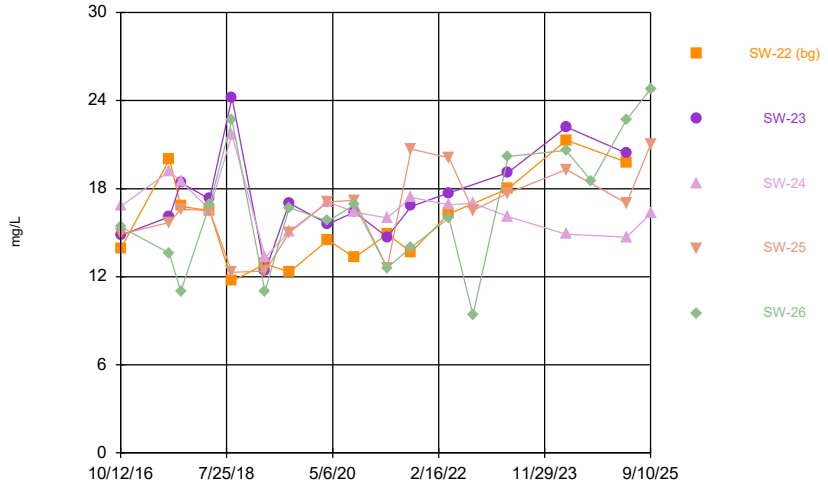
Time Series



Constituent: Calcium Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

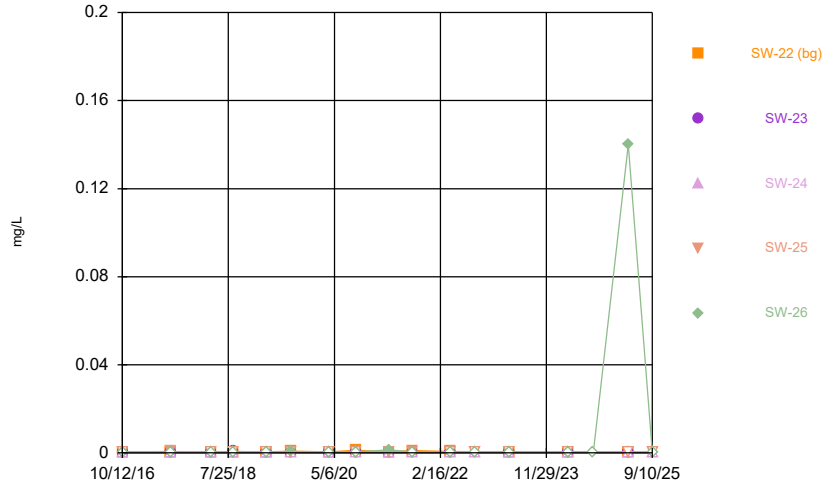
Time Series



Constituent: Chloride Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

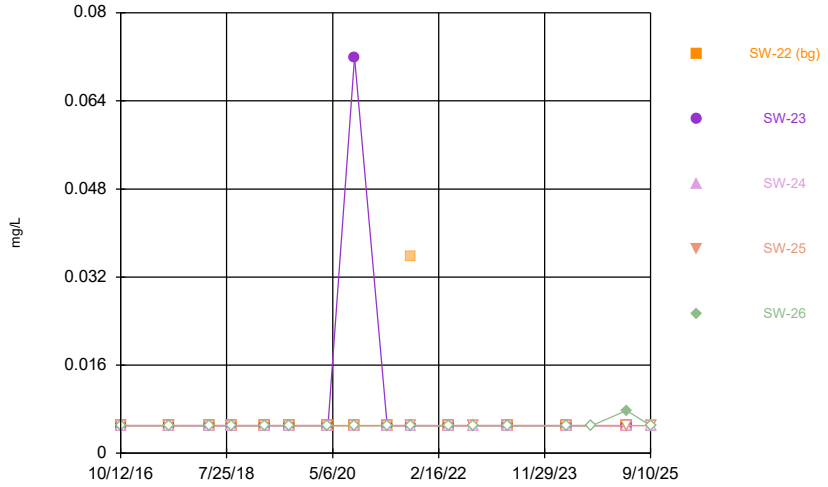
Time Series



Constituent: Cobalt Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

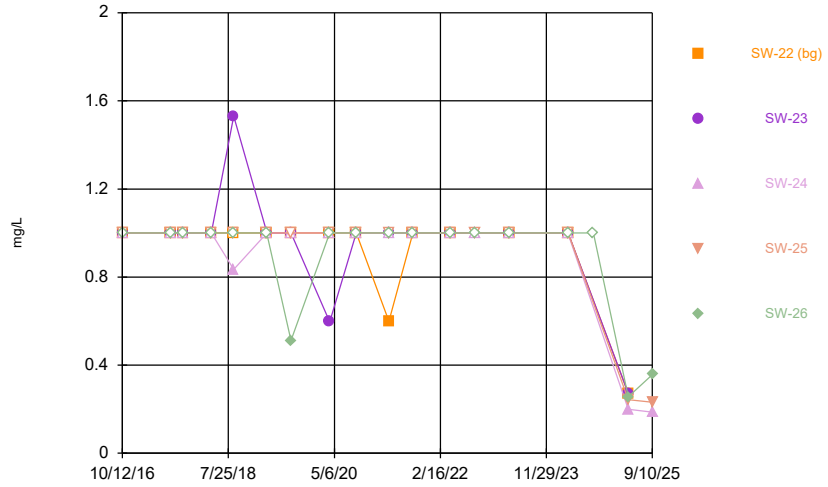
Time Series



Constituent: Copper Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

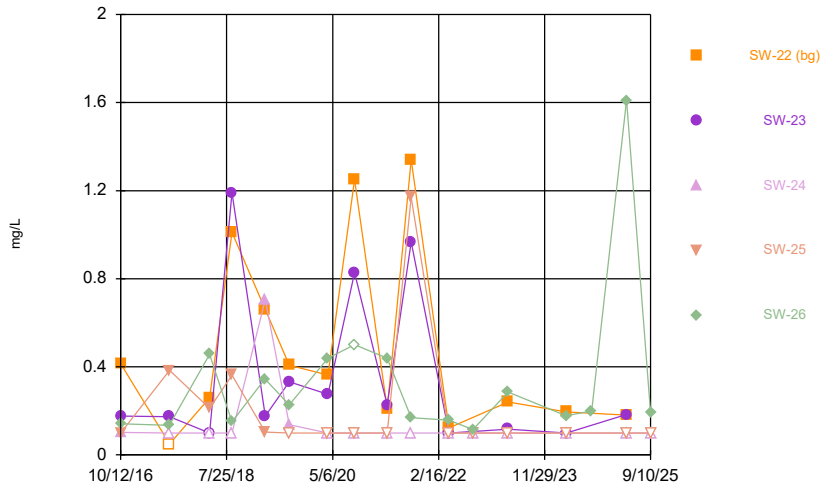
Time Series



Constituent: Fluoride Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

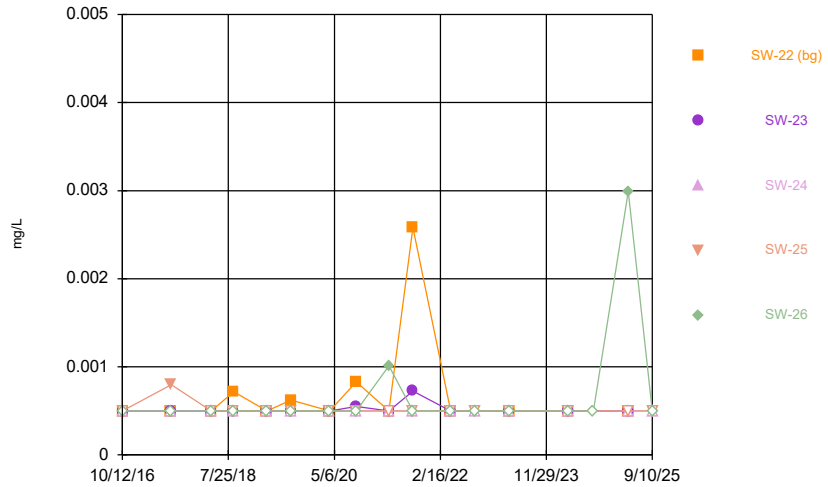
Time Series



Constituent: Iron Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

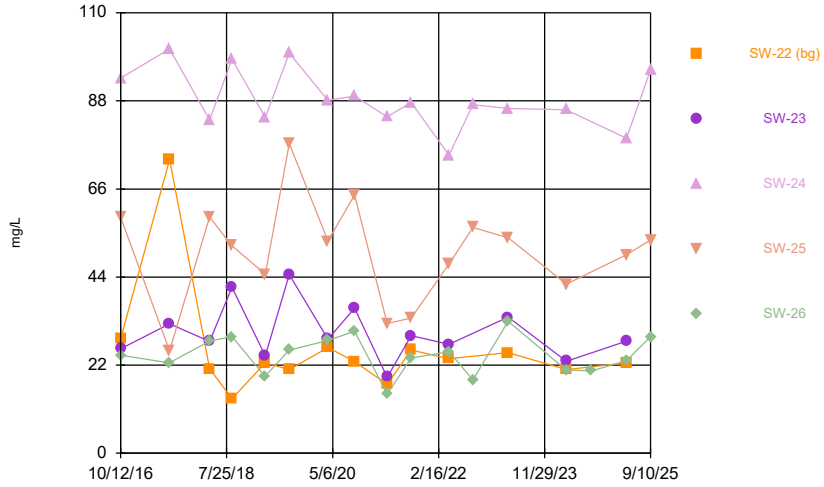
Time Series



Constituent: Lead Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

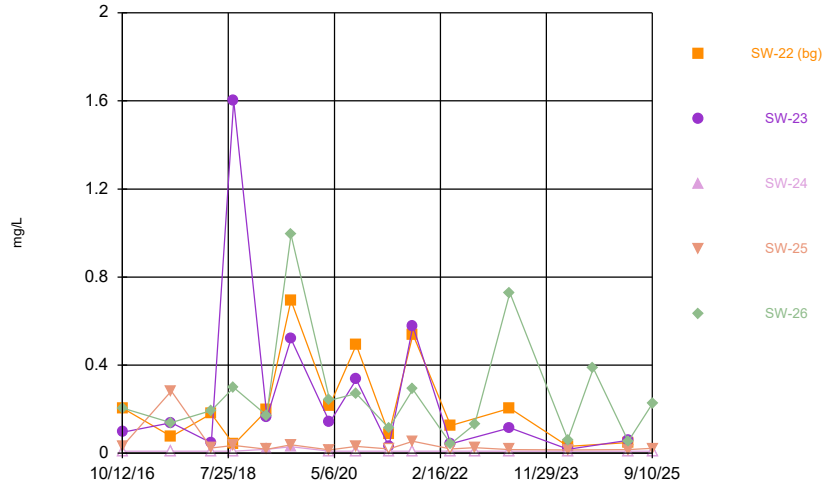
Time Series



Constituent: Magnesium Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

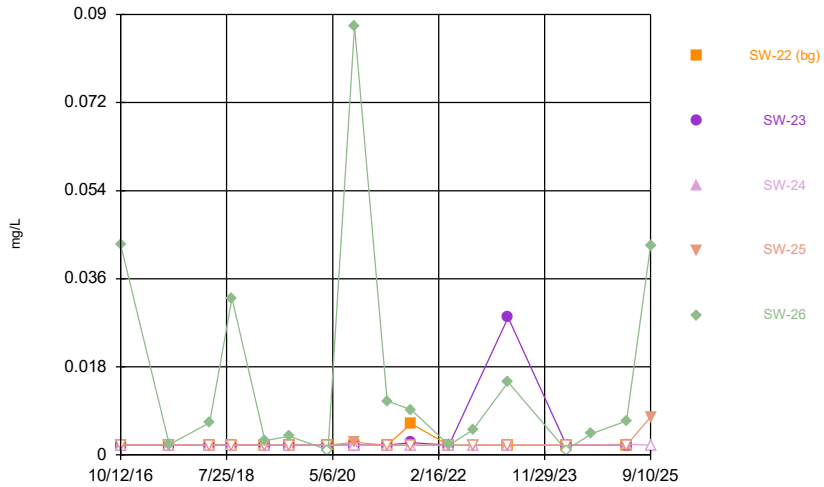
Time Series



Constituent: Manganese Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

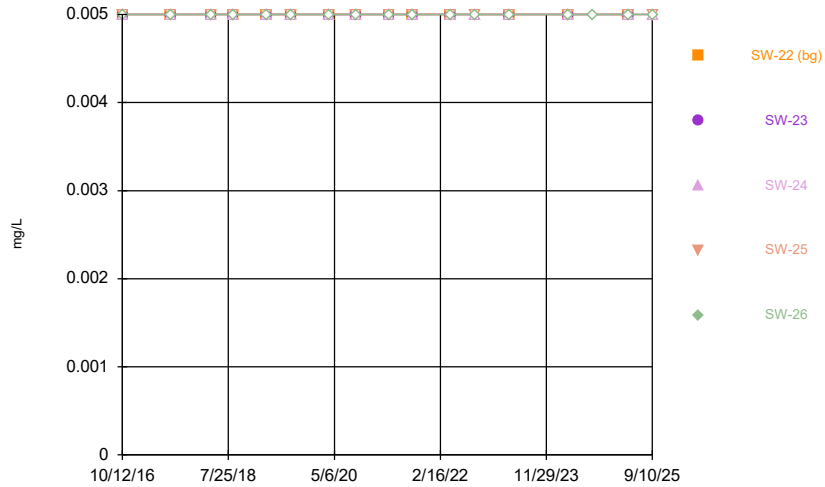
Time Series



Constituent: Molybdenum Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

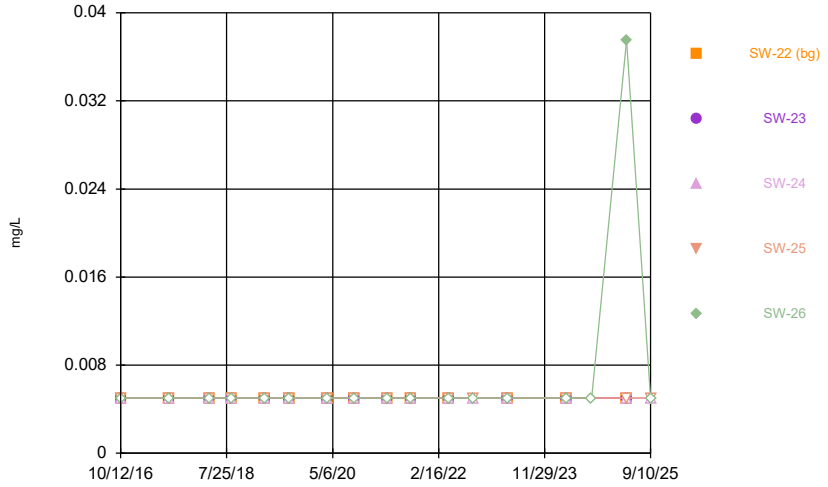
Time Series



Constituent: Nickel Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

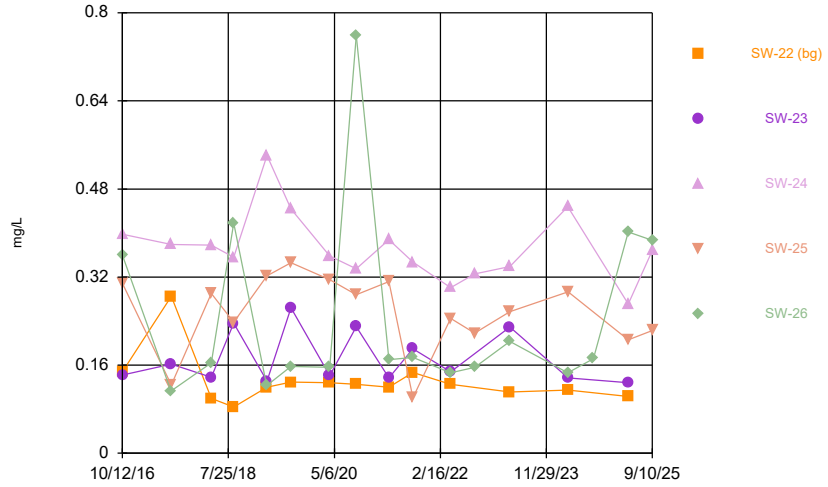
Time Series



Constituent: Selenium Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

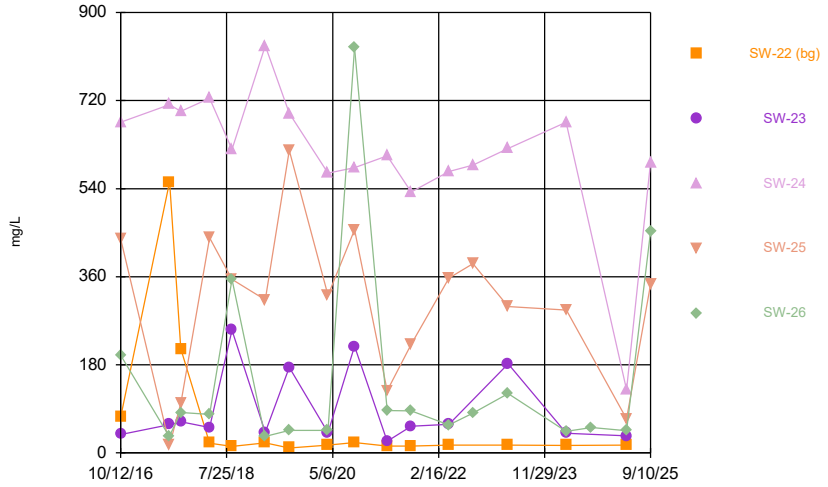
Time Series



Constituent: Strontium Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

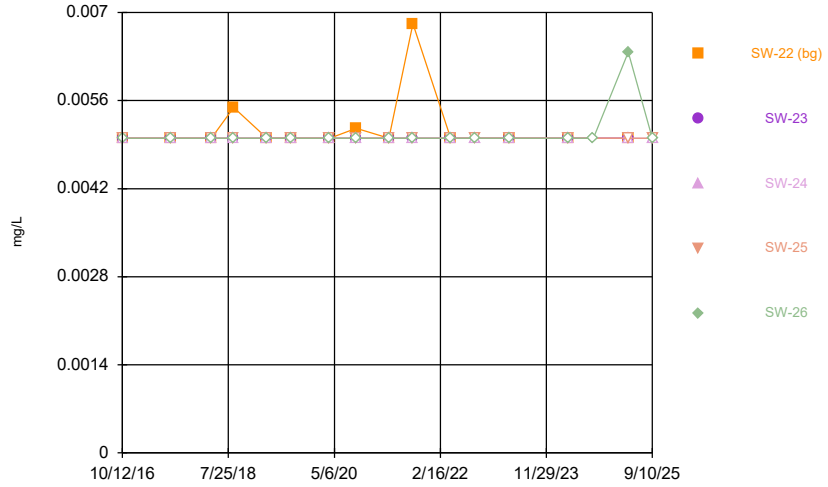
Time Series



Constituent: Sulfate Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

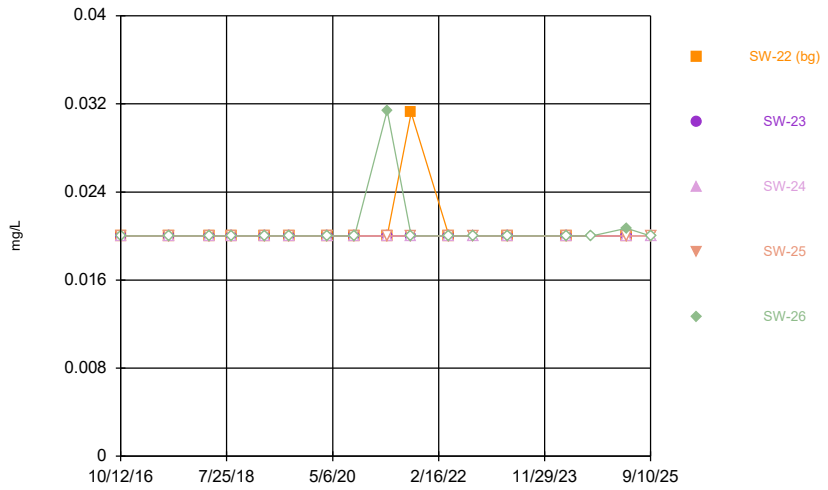
Time Series



Constituent: Vanadium Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Zinc Analysis Run 12/15/2025 3:55 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Time Series

Constituent: Aluminum (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	0.217	0.0624	<0.05	<0.05	<0.05
8/7/2017					<0.05
8/9/2017	<0.05	0.0626	<0.05	0.276	
4/11/2018	0.0713	<0.05	<0.05	<0.05	0.117
8/27/2018	1.09	0.137	<0.05	<0.05	<0.05
3/18/2019					0.169
3/20/2019	0.153	0.0744	<0.05	<0.05	
8/13/2019	0.194	0.0761	<0.05	<0.05	0.0646
4/7/2020	0.0821	0.0578	<0.05	<0.05	0.134
9/18/2020	1.28	0.44	<0.05	<0.05	<0.05
4/5/2021	0.191	0.187	<0.05	<0.05	0.432
9/1/2021	0.982	0.648	<0.05	0.858	0.0654
4/20/2022	<0.05	<0.05	<0.05	<0.05	<0.05
9/14/2022			<0.05	<0.05	<0.05
4/19/2023	0.0782	<0.05	<0.05	<0.05	<0.05
4/9/2024			<0.05		0.119
4/10/2024	0.172	<0.05		<0.05	
9/12/2024					0.0588
4/14/2025	<0.05	<0.05	<0.05	<0.05	1.28
9/10/2025			<0.05	<0.05	<0.05

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Arsenic (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	<0.002	0.00257	<0.002	<0.002	0.018
8/7/2017					0.0118
8/9/2017	<0.002	0.00211	<0.002	<0.002	
4/11/2018	<0.002	<0.002	<0.002	<0.002	0.00661
8/27/2018	<0.002	0.00401	<0.002	<0.002	0.133
3/18/2019					<0.002
3/20/2019	<0.002	<0.002	<0.002	<0.002	
8/13/2019	0.00342	0.00378	<0.002	<0.002	0.0347
4/7/2020	<0.002	<0.002	<0.002	<0.002	0.00368
9/18/2020	0.00217	0.00236	<0.002	<0.002	0.187
4/5/2021	<0.002	<0.002	<0.002	<0.002	0.0268
9/1/2021	0.00367	0.00332	<0.002	<0.002	0.0262
4/20/2022	<0.002	<0.002	<0.002	<0.002	<0.002
9/14/2022			<0.002	<0.002	0.0151
4/19/2023	<0.002	0.00221	<0.002	<0.002	0.00664
4/9/2024			<0.002		0.00217
4/10/2024	<0.002	<0.002		<0.002	
9/12/2024					0.0371
4/14/2025	<0.002	<0.002	<0.002	<0.002	<0.002
9/10/2025			<0.002	<0.002	0.0489

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	0.111	0.0953	0.0261	0.0538	0.0357
8/7/2017					0.0535
8/9/2017	0.0601	0.11	0.0268	0.142	
4/11/2018	0.0806	0.0785	0.0264	0.0456	0.0712
8/27/2018	0.108	0.154	0.0256	0.0608	0.0751
3/18/2019					0.0793
3/20/2019	0.0996	0.079	0.0278	0.056	
8/13/2019	0.168	0.171	0.0272	0.0648	0.048
4/7/2020	0.0967	0.0806	0.0254	0.0548	0.078
9/18/2020	0.168	0.113	0.0257	0.0686	0.0772
4/5/2021	0.112	0.103	0.0285	0.0594	0.102
9/1/2021	0.181	0.109	0.0259	0.0941	0.0455
4/20/2022	0.1	0.0689	0.0222	0.0407	0.0503
9/14/2022			0.0288	0.058	0.0656
4/19/2023	0.101	0.0922	0.0253	0.051	0.0536
4/9/2024			0.0262		0.0701
4/10/2024	0.0964	0.075		0.0461	
9/12/2024					0.0808
4/14/2025	0.0741	0.0586	0.0213	0.0503	0.0737
9/10/2025			0.0244	0.0579	0.0865

Time Series

Constituent: Beryllium (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	<0.001	<0.001	<0.001	<0.001	<0.001
8/7/2017					<0.001
8/9/2017	<0.001	<0.001	<0.001	<0.001	
4/11/2018	<0.001	<0.001	<0.001	<0.001	<0.001
8/27/2018	<0.001	<0.001	<0.001	<0.001	<0.001
3/18/2019					<0.001
3/20/2019	<0.001	<0.001	<0.001	<0.001	
8/13/2019	<0.001	<0.001	<0.001	<0.001	<0.001
4/7/2020	<0.001	<0.001	<0.001	<0.001	<0.001
9/18/2020	<0.001	<0.001	<0.001	<0.001	<0.001
4/5/2021	<0.001	<0.001	<0.001	<0.001	<0.001
9/1/2021	<0.001	<0.001	<0.001	<0.001	<0.001
4/20/2022	<0.001	<0.001	<0.001	<0.001	<0.001
9/14/2022			<0.001	<0.001	<0.001
4/19/2023	<0.001	<0.001	<0.001	<0.001	<0.001
4/9/2024			<0.001		<0.001
4/10/2024	<0.001	<0.001		<0.001	
9/12/2024					<0.001
4/14/2025	<0.001	<0.001	<0.001	<0.001	<0.001
9/10/2025			<0.001	<0.001	<0.001

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	1.25	0.869	10.5	5.57	4.33
8/7/2017					0.631
8/9/2017	5.95	0.789	10.6	<0.2	
10/17/2017	6.67	0.981	11.7	1.51	1.43
4/11/2018	<0.1	0.922	9.21	4.15	1.54
8/27/2018	<0.1	0.983	11.7	4.61	12.4
3/18/2019					0.486
3/20/2019	<0.1	0.693	9.36	2.9	
8/13/2019	<0.1	2.66	10.4	8.03	1
4/7/2020	<0.1	0.898	8.58	3.8	0.745
9/18/2020	0.206	2.72	9.39	6.36	11.3
4/5/2021	<0.1	0.32	6.55	2.11	1.52
9/1/2021	<0.1	0.704	8.55	0.528	0.941
4/20/2022	<0.1	1.43	8.12	5	0.855
9/14/2022			9.05	5.86	0.892
4/19/2023	<0.1	2.17	7.97	4.2	1.54
4/9/2024			7.91		0.484
4/10/2024	<0.1	0.485		3.76	
9/12/2024					1.38
4/14/2025	<0.1	0.755	7.82	3.57	0.14
9/10/2025			8.09	5.25	5.19

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	75.5	69.8	257	201	89.3
8/7/2017					35.5
8/9/2017	221	79.1	260	56.3	
10/17/2017	204	70	230	74.8	50.6
4/11/2018	45.2	62.9	210	171	62.1
8/27/2018	33.3	122	244	169	66.1
3/18/2019					52.4
3/20/2019	51.8	60.1	263	147	
8/13/2019	47.4	115	240	223	43.6
4/7/2020	59.6	68.6	242	168	65.5
9/18/2020	55.1	114	238	203	123
4/5/2021	42.4	48.7	221	125	44.5
9/1/2021	58.1	77.3	229	80.5	48.3
4/20/2022	58.6	71.7	201	154	57.4
9/14/2022			232	182	59.4
4/19/2023	57.6	87.6	213	149	70
4/9/2024			231		56.1
4/10/2024	50.5	60		142	
9/12/2024					57.3
4/14/2025	51.5	63.1	183	143	66.2
9/10/2025			227	159	69.3

Time Series

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	13.9	14.8	16.8	14.9	15.4
8/7/2017					13.6
8/9/2017	20	16.1	19.2	15.7	
10/17/2017	16.8	18.4	18.5	16.6	11
4/11/2018	16.5	17.3	16.6	16.5	16.9
8/27/2018	11.7	24.2	21.7	12.3	22.7
3/18/2019					11
3/20/2019	12.9	12.4	13.3	12.4	
8/13/2019	12.3	17	15.1	15	16.7
4/7/2020	14.5	15.6	17.1	17.1	15.8
9/18/2020	13.3	16.4	16.4	17.2	16.9
4/5/2021	14.9	14.7	16	12.6	12.6
9/1/2021	13.7	16.8	17.4	20.7	14
4/20/2022	16.3	17.7	16.9	20.1	16
9/14/2022			17	16.5	9.4
4/19/2023	18	19.1	16.1	17.7	20.2
4/9/2024			14.9		20.6
4/10/2024	21.3	22.2		19.3	
9/12/2024					18.5
4/14/2025	19.8	20.4	14.7	17	22.7
9/10/2025			16.3	21	24.8

Time Series

Constituent: Cobalt (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8/7/2017					<0.0005
8/9/2017	<0.0005	<0.0005	<0.0005	0.00064	
4/11/2018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8/27/2018	<0.0005	0.00066	<0.0005	<0.0005	<0.0005
3/18/2019					<0.0005
3/20/2019	<0.0005	<0.0005	<0.0005	<0.0005	
8/13/2019	0.000833	<0.0005	<0.0005	<0.0005	0.000613
4/7/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
9/18/2020	0.00116	<0.0005	<0.0005	<0.0005	<0.0005
4/5/2021	<0.0005	<0.0005	<0.0005	<0.0005	0.00134
9/1/2021	0.00105	0.000529	<0.0005	0.000512	<0.0005
4/20/2022	0.000713	<0.0005	<0.0005	<0.0005	<0.0005
9/14/2022			<0.0005	<0.0005	<0.0005
4/19/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
4/9/2024			<0.0005		<0.0005
4/10/2024	<0.0005	<0.0005		<0.0005	
9/12/2024					<0.0005
4/14/2025	<0.0005	<0.0005	<0.0005	<0.0005	0.14
9/10/2025			<0.0005	<0.0005	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Copper (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	<0.005	<0.005	<0.005	<0.005	<0.005
8/7/2017					<0.005
8/9/2017	<0.005	<0.005	<0.005	<0.005	
4/11/2018	<0.005	<0.005	<0.005	<0.005	<0.005
8/27/2018	<0.005	<0.005	<0.005	<0.005	<0.005
3/18/2019					<0.005
3/20/2019	<0.005	<0.005	<0.005	<0.005	
8/13/2019	<0.005	<0.005	<0.005	<0.005	<0.005
4/7/2020	<0.005	<0.005	<0.005	<0.005	<0.005
9/18/2020	<0.005	0.0719	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005	<0.005
9/1/2021	0.0358 (o)	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005	<0.005
9/14/2022			<0.005	<0.005	<0.005
4/19/2023	<0.005	<0.005	<0.005	<0.005	<0.005
4/9/2024			<0.005		<0.005
4/10/2024	<0.005	<0.005		<0.005	
9/12/2024					<0.005
4/14/2025	<0.005	<0.005	<0.005	<0.005	0.00773
9/10/2025			<0.005	<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	<1	<1	<1	<1	<1
8/7/2017					<1
8/9/2017	<1	<1	<1	<1	
10/17/2017	<1	<1	<1	<1	<1
4/11/2018	<1	<1	<1	<1	<1
8/27/2018	<1	1.53	0.834	<1	<1
3/18/2019					<1
3/20/2019	<1	<1	<1	<1	
8/13/2019	<1	<1	<1	<1	0.512
4/7/2020	<1	0.597	<1	<1	<1
9/18/2020	<1	<1	<1	<1	<1
4/5/2021	0.6	<1	<1	<1	<1
9/1/2021	<1	<1	<1	<1	<1
4/20/2022	<1	<1	<1	<1	<1
9/14/2022			<1	<1	<1
4/19/2023	<1	<1	<1	<1	<1
4/9/2024			<1		<1
4/10/2024	<1	<1		<1	
9/12/2024					<1
4/14/2025	0.271	0.272	0.2	0.244	0.256
9/10/2025			0.187	0.231	0.357

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Iron (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	0.415	0.177	0.102	0.1	0.141
8/7/2017					0.135
8/9/2017	<0.1	0.173	<0.1	0.384	
4/11/2018	0.259	<0.1	<0.1	0.212	0.457
8/27/2018	1.01	1.19	<0.1	0.363	0.151
3/18/2019					0.345
3/20/2019	0.66	0.176	0.705	0.104	
8/13/2019	0.408	0.332	0.137	<0.1	0.227
4/7/2020	0.363	0.275	<0.1	<0.1	0.439
9/18/2020	1.25	0.827	<0.1	<0.1	<1
4/5/2021	0.21	0.228	<0.1	<0.1	0.439
9/1/2021	1.34	0.967	<0.1	1.17	0.169
4/20/2022	0.123	<0.1	<0.1	<0.1	0.157
9/14/2022			<0.1	<0.1	0.116
4/19/2023	0.24	0.117	<0.1	<0.1	0.286
4/9/2024			<0.1		0.178
4/10/2024	0.196	<0.1		<0.1	
9/12/2024					0.2
4/14/2025	0.181	0.183	<0.1	<0.1	1.61
9/10/2025			<0.1	<0.1	0.191

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Lead (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8/7/2017					<0.0005
8/9/2017	<0.0005	<0.0005	<0.0005	0.000796	
4/11/2018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8/27/2018	0.000716	<0.0005	<0.0005	<0.0005	<0.0005
3/18/2019					<0.0005
3/20/2019	<0.0005	<0.0005	<0.0005	<0.0005	
8/13/2019	0.000623	<0.0005	<0.0005	<0.0005	<0.0005
4/7/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
9/18/2020	0.000829	0.000549	<0.0005	<0.0005	<0.0005
4/5/2021	<0.0005	<0.0005	<0.0005	<0.0005	0.00101
9/1/2021	0.00258	0.000726	<0.0005	<0.0005	<0.0005
4/20/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
9/14/2022			<0.0005	<0.0005	<0.0005
4/19/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
4/9/2024			<0.0005		<0.0005
4/10/2024	<0.0005	<0.0005		<0.0005	
9/12/2024					<0.0005
4/14/2025	<0.0005	<0.0005	<0.0005	<0.0005	0.00299
9/10/2025			<0.0005	<0.0005	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Magnesium (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	28.6	26.1	93.7	58.9	24.5
8/7/2017					22.6
8/9/2017	73.3	32.3	101	25.6	
4/11/2018	21.1	27.9	83.2	59	28
8/27/2018	13.6	41.4	98.4	51.8	29.1
3/18/2019					19.2
3/20/2019	22.6	24.3	83.9	44.7	
8/13/2019	20.9	44.6	99.9	77.3	25.8
4/7/2020	26.4	28.5	88.1	53	28.2
9/18/2020	22.9	36.2	89.2	64.5	30.5
4/5/2021	17.2	19	84	32.4	14.8
9/1/2021	25.8	29.4	87.6	33.8	23.8
4/20/2022	23.6	27.2	74.4	47.3	25.4
9/14/2022			87.1	56.4	18.3
4/19/2023	25.1	34	86.1	53.8	33
4/9/2024			85.8		20.8
4/10/2024	20.9	23		42.2	
9/12/2024					20.6
4/14/2025	22.6	28	78.7	49.6	23.1
9/10/2025			95.8	53.3	29.1

Time Series

Constituent: Manganese (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	0.205	0.0951	<0.01	0.0315	0.205
8/7/2017					0.139
8/9/2017	0.0766	0.139	<0.01	0.282	
4/11/2018	0.18	0.0476	<0.01	0.0244	0.194
8/27/2018	0.0399	1.6	<0.01	0.0361	0.298
3/18/2019					0.172
3/20/2019	0.196	0.164	0.0179	0.0184	
8/13/2019	0.694	0.52	0.0304	0.0387	0.993
4/7/2020	0.217	0.14	<0.01	0.0156	0.241
9/18/2020	0.492	0.335	<0.01	0.0311	0.271
4/5/2021	0.0882	0.0311	<0.01	<0.04	0.114
9/1/2021	0.539	0.578	<0.01	0.054	0.29
4/20/2022	0.125	0.0426	<0.01	<0.04	0.0422
9/14/2022			<0.01	0.026	0.131
4/19/2023	0.204	0.115	<0.01	0.0169	0.728
4/9/2024			<0.01		0.0612
4/10/2024	0.0309	0.0181		0.0148	
9/12/2024					0.385
4/14/2025	0.0486	0.0584	<0.01	0.0159	0.0545
9/10/2025			<0.01	0.0219	0.225

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	<0.002	<0.002	<0.002	<0.002	0.043
8/7/2017					0.00214
8/9/2017	<0.002	<0.002	<0.002	<0.002	
4/11/2018	<0.002	<0.002	<0.002	<0.002	0.00659
8/27/2018	<0.002	<0.002	<0.002	<0.002	0.032
3/18/2019					0.00291
3/20/2019	<0.002	<0.002	<0.002	<0.002	
8/13/2019	<0.002	<0.002	<0.002	<0.002	0.00379
4/7/2020	<0.002	<0.002	<0.002	<0.002	<0.002
9/18/2020	<0.002	<0.002	<0.002	0.00256	0.0876
4/5/2021	<0.002	<0.002	<0.002	<0.002	0.011
9/1/2021	0.00637	0.00252	<0.002	<0.002	0.00925
4/20/2022	<0.002	<0.002	<0.002	<0.002	0.00202
9/14/2022			<0.002	<0.002	0.00514
4/19/2023	<0.002	0.0281	<0.002	<0.002	0.0149
4/9/2024			<0.002		<0.002
4/10/2024	<0.002	<0.002		<0.002	
9/12/2024					0.00433
4/14/2025	<0.002	<0.002	0.00216	<0.002	0.00699
9/10/2025			<0.002	0.00772	0.0427

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Nickel (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	<0.005	<0.005	<0.005	<0.005	<0.005
8/7/2017					<0.005
8/9/2017	<0.005	<0.005	<0.005	<0.005	
4/11/2018	<0.005	<0.005	<0.005	<0.005	<0.005
8/27/2018	<0.005	<0.005	<0.005	<0.005	<0.005
3/18/2019					<0.005
3/20/2019	<0.005	<0.005	<0.005	<0.005	
8/13/2019	<0.005	<0.005	<0.005	<0.005	<0.005
4/7/2020	<0.005	<0.005	<0.005	<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005	<0.005
9/14/2022			<0.005	<0.005	<0.005
4/19/2023	<0.005	<0.005	<0.005	<0.005	<0.005
4/9/2024			<0.005		<0.005
4/10/2024	<0.005	<0.005		<0.005	
9/12/2024					<0.005
4/14/2025	<0.005	<0.005	<0.005	<0.005	<0.005
9/10/2025			<0.005	<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Selenium (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	<0.005	<0.005	<0.005	<0.005	<0.005
8/7/2017					<0.005
8/9/2017	<0.005	<0.005	<0.005	<0.005	
4/11/2018	<0.005	<0.005	<0.005	<0.005	<0.005
8/27/2018	<0.005	<0.005	<0.005	<0.005	<0.005
3/18/2019					<0.005
3/20/2019	<0.005	<0.005	<0.005	<0.005	
8/13/2019	<0.005	<0.005	<0.005	<0.005	<0.005
4/7/2020	<0.005	<0.005	<0.005	<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005	<0.005
9/14/2022			<0.005	<0.005	<0.005
4/19/2023	<0.005	<0.005	<0.005	<0.005	<0.005
4/9/2024			<0.005		<0.005
4/10/2024	<0.005	<0.005		<0.005	
9/12/2024					<0.005
4/14/2025	<0.005	<0.005	<0.005	<0.005	0.0375
9/10/2025			<0.005	<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Strontium (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	0.148	0.142	0.398	0.309	0.36
8/7/2017					0.113
8/9/2017	0.285	0.162	0.379	0.124	
4/11/2018	0.0998	0.138	0.378	0.29	0.164
8/27/2018	0.0842	0.236	0.356	0.238	0.418
3/18/2019					0.123
3/20/2019	0.12	0.131	0.541	0.322	
8/13/2019	0.129	0.264	0.444	0.346	0.158
4/7/2020	0.128	0.141	0.358	0.315	0.156
9/18/2020	0.125	0.23	0.335	0.288	0.759
4/5/2021	0.12	0.137	0.388	0.312	0.17
9/1/2021	0.147	0.19	0.347	0.101	0.174
4/20/2022	0.125	0.148	0.301	0.245	0.146
9/14/2022			0.326	0.218	0.156
4/19/2023	0.111	0.229	0.339	0.257	0.203
4/9/2024			0.448		0.146
4/10/2024	0.115	0.137		0.293	
9/12/2024					0.172
4/14/2025	0.103	0.128	0.271	0.206	0.402
9/10/2025			0.368	0.223	0.387

Time Series

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	73	37.7	676	438	200
8/7/2017					33.8
8/9/2017	554	58.1	712	16.9	
10/17/2017	213	63.7	698	101	82.5
4/11/2018	20.1	52	725	440	78.8
8/27/2018	13.2	251	620	355	355
3/18/2019					33.7
3/20/2019	20.4	42.2	832	313	
8/13/2019	10.1	175	694	618	46.3
4/7/2020	16.3	41.5	572	322	45.9
9/18/2020	21	218	583	456	828
4/5/2021	13.9	23.6	607	127	86.4
9/1/2021	14.3	54.3	533	222	85.9
4/20/2022	15.7	58.4	575	357	57.3
9/14/2022			588	387	81.4
4/19/2023	15.7	182	622	299	121
4/9/2024			676		43.8
4/10/2024	15.1	40.2		292	
9/12/2024					52.2
4/14/2025	15.7	34.9	129	69.3	45.5
9/10/2025			594	344	452

Time Series

Constituent: Vanadium (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	<0.005	<0.005	<0.005	<0.005	<0.005
8/7/2017					<0.005
8/9/2017	<0.005	<0.005	<0.005	<0.005	
4/11/2018	<0.005	<0.005	<0.005	<0.005	<0.005
8/27/2018	0.00549	<0.005	<0.005	<0.005	<0.005
3/18/2019					<0.005
3/20/2019	<0.005	<0.005	<0.005	<0.005	
8/13/2019	<0.005	<0.005	<0.005	<0.005	<0.005
4/7/2020	<0.005	<0.005	<0.005	<0.005	<0.005
9/18/2020	0.00516	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005	<0.005
9/1/2021	0.00682	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005	<0.005
9/14/2022			<0.005	<0.005	<0.005
4/19/2023	<0.005	<0.005	<0.005	<0.005	<0.005
4/9/2024			<0.005		<0.005
4/10/2024	<0.005	<0.005		<0.005	
9/12/2024					<0.005
4/14/2025	<0.005	<0.005	<0.005	<0.005	0.00637
9/10/2025			<0.005	<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Zinc (mg/L) Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

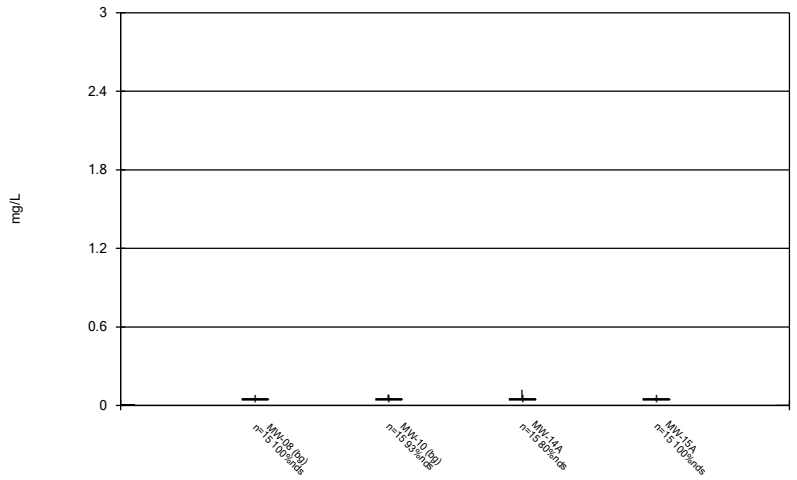
	SW-22 (bg)	SW-23	SW-24	SW-25	SW-26
10/12/2016	<0.02	<0.02	<0.02	<0.02	<0.02
8/7/2017					<0.02
8/9/2017	<0.02	<0.02	<0.02	<0.02	
4/11/2018	<0.02	<0.02	<0.02	<0.02	<0.02
8/27/2018	<0.02	<0.02	<0.02	<0.02	<0.02
3/18/2019					<0.02
3/20/2019	<0.02	<0.02	<0.02	<0.02	
8/13/2019	<0.02	<0.02	<0.02	<0.02	<0.02
4/7/2020	<0.02	<0.02	<0.02	<0.02	<0.02
9/18/2020	<0.02	<0.02	<0.02	<0.02	<0.02
4/5/2021	<0.02	<0.02	<0.02	<0.02	0.0314
9/1/2021	0.0312	<0.02	<0.02	<0.02	<0.02
4/20/2022	<0.02	<0.02	<0.02	<0.02	<0.02
9/14/2022			<0.02	<0.02	<0.02
4/19/2023	<0.02	<0.02	<0.02	<0.02	<0.02
4/9/2024			<0.02		<0.02
4/10/2024	<0.02	<0.02		<0.02	
9/12/2024					<0.02
4/14/2025	<0.02	<0.02	<0.02	<0.02	0.0207
9/10/2025			<0.02	<0.02	<0.02

ND substitution: RL or RL/2 if <15% NDs.

FIGURE B.

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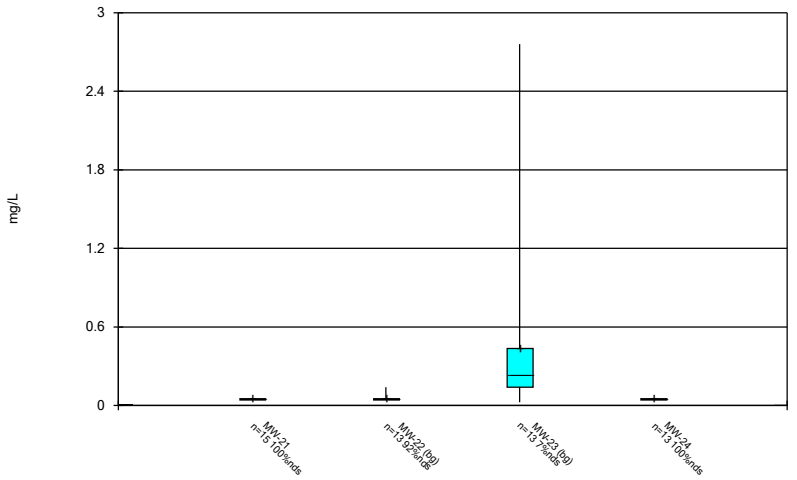
Box & Whiskers Plot



Constituent: Aluminum Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

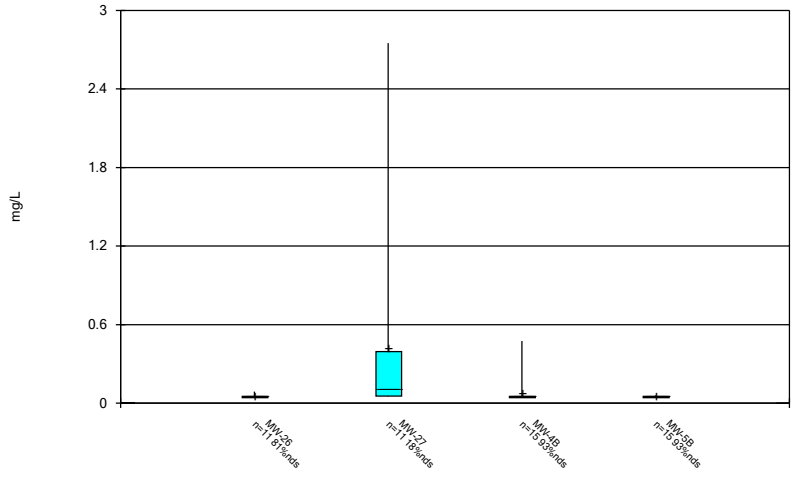
Box & Whiskers Plot



Constituent: Aluminum Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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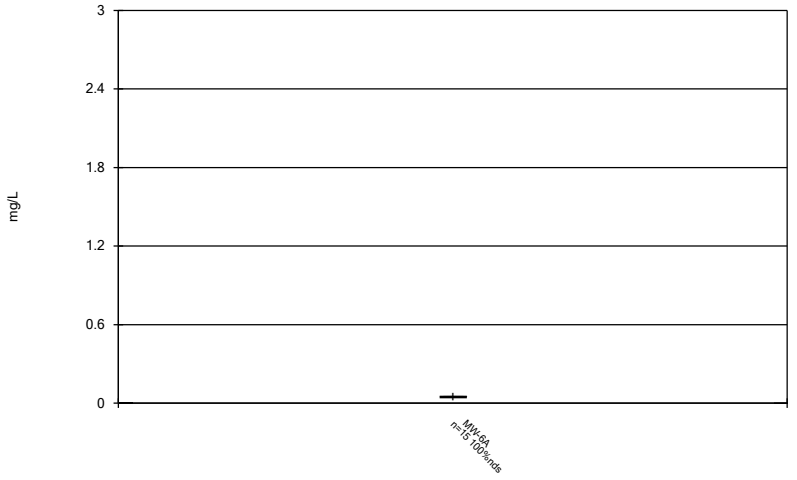
Box & Whiskers Plot



Constituent: Aluminum Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

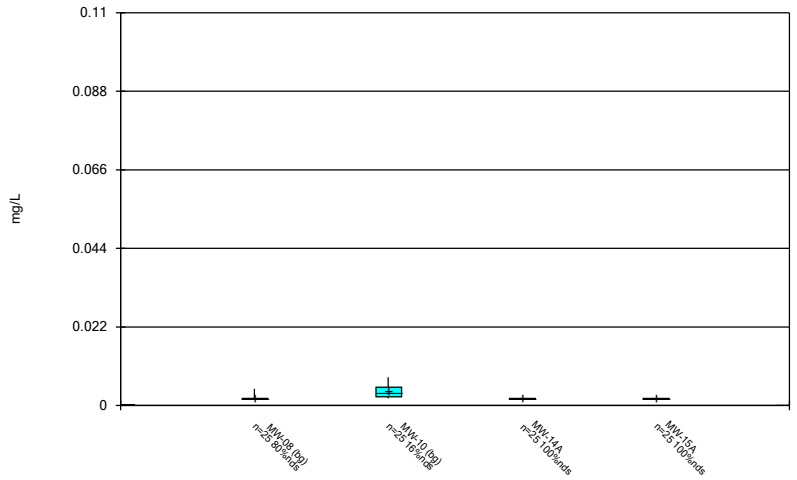
Box & Whiskers Plot



Constituent: Aluminum Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

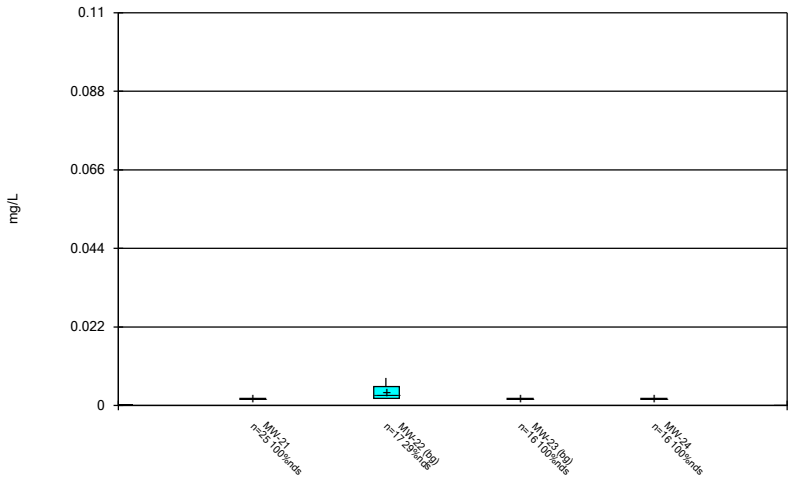
Box & Whiskers Plot



Constituent: Arsenic Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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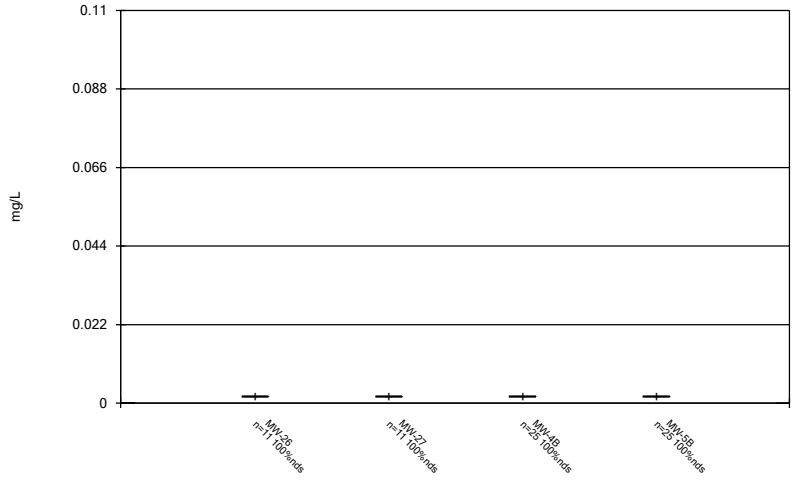
Box & Whiskers Plot



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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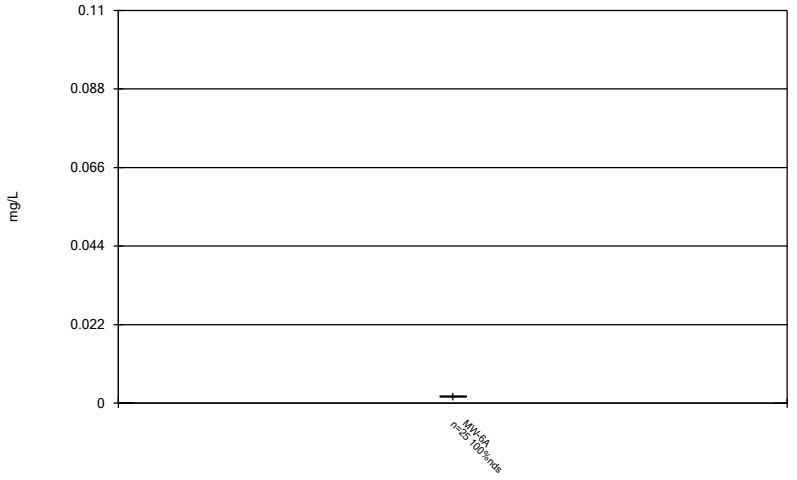
Box & Whiskers Plot



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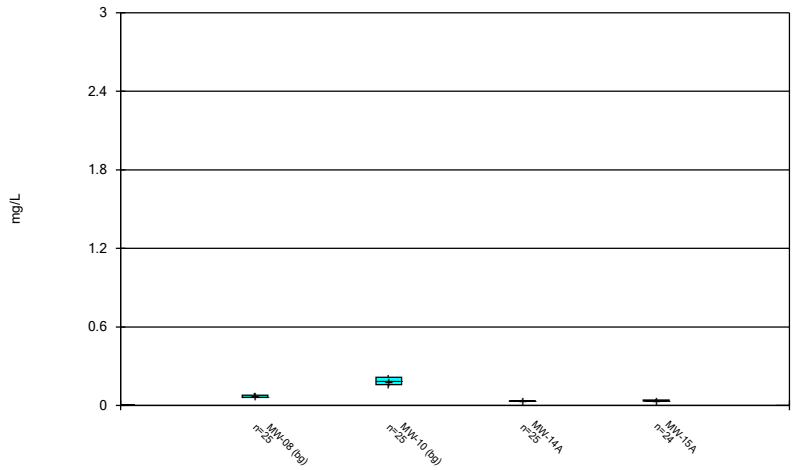
Box & Whiskers Plot



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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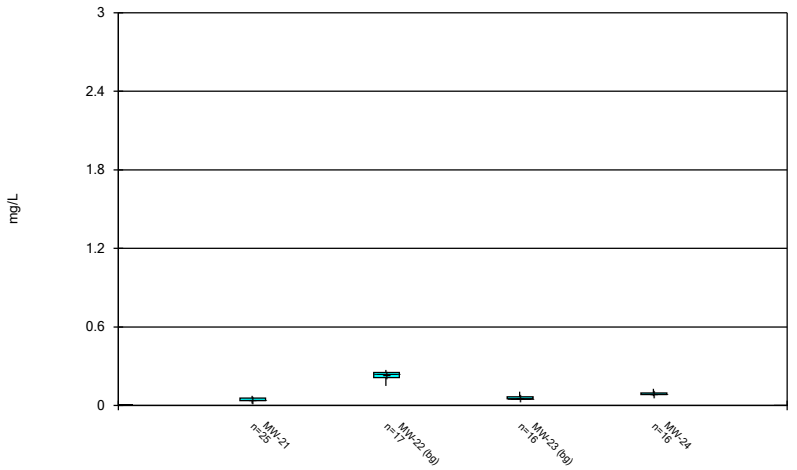
Box & Whiskers Plot



Constituent: Barium Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
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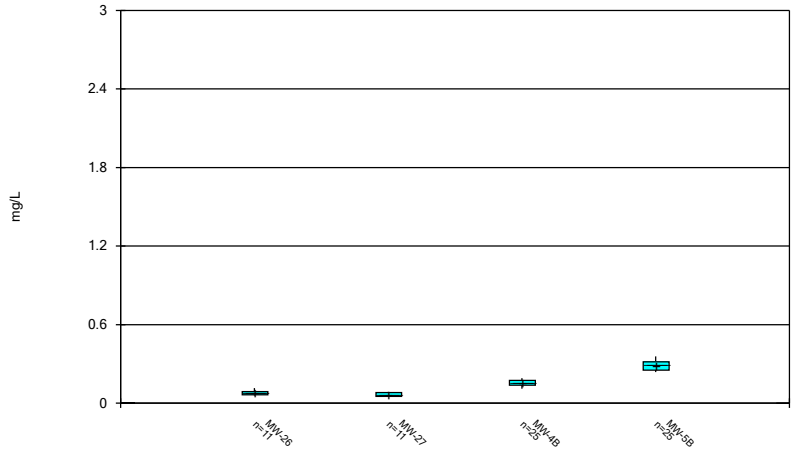
Box & Whiskers Plot



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Box & Whiskers Plot



Constituent: Barium Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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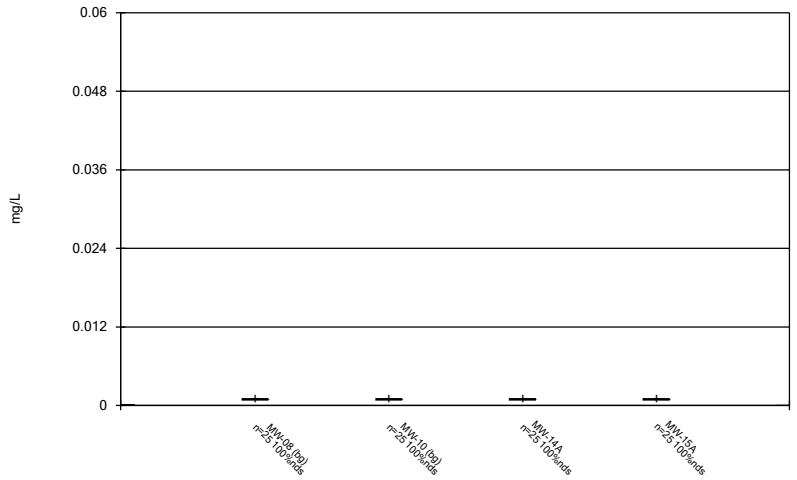
Box & Whiskers Plot



Constituent: Barium Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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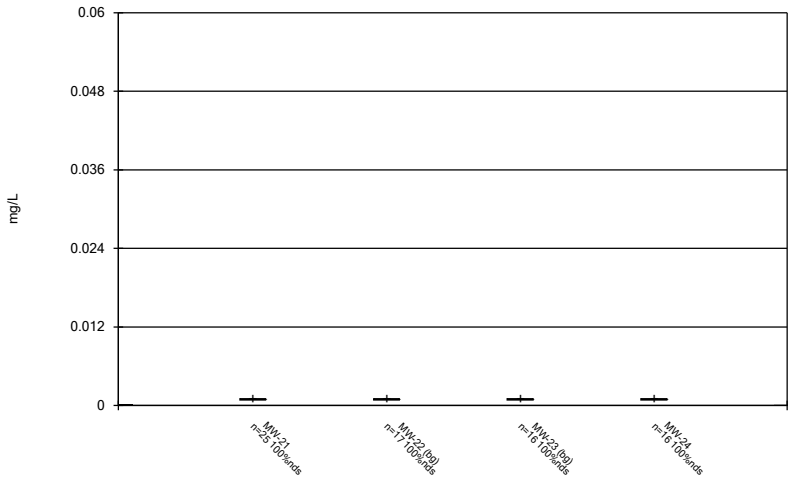
Box & Whiskers Plot



Constituent: Beryllium Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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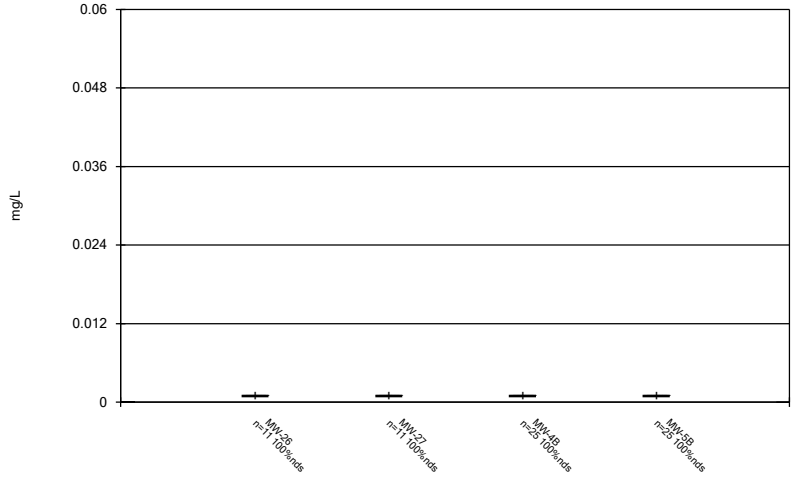
Box & Whiskers Plot



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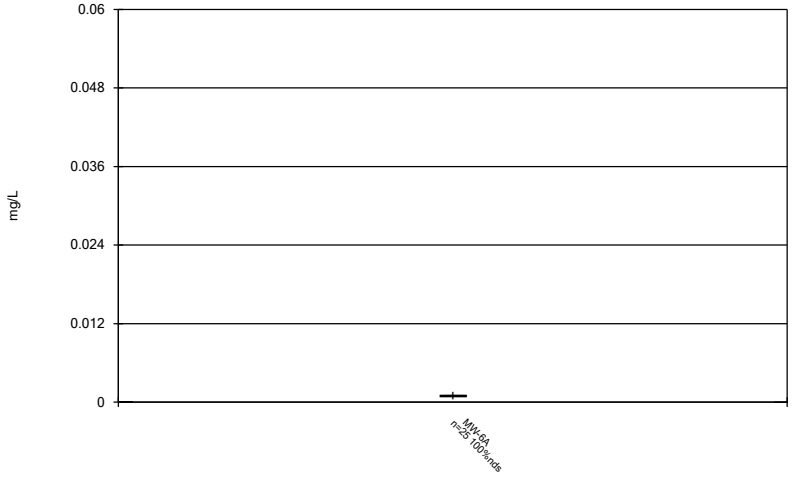
Box & Whiskers Plot



Constituent: Beryllium Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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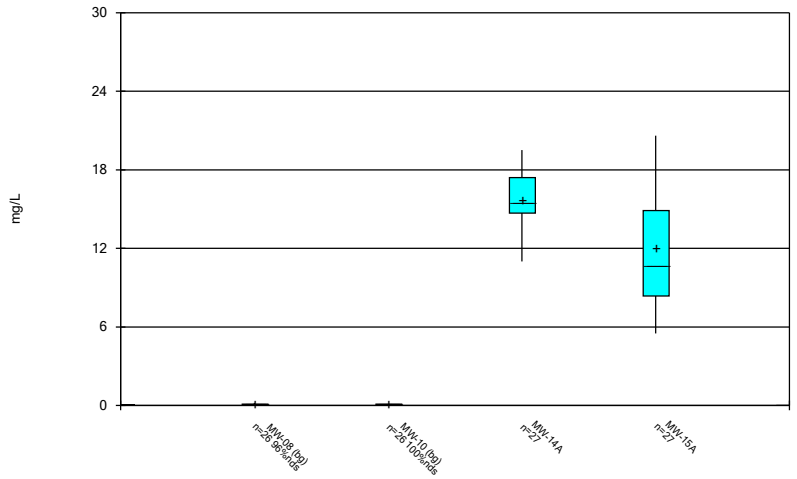
Box & Whiskers Plot



Constituent: Beryllium Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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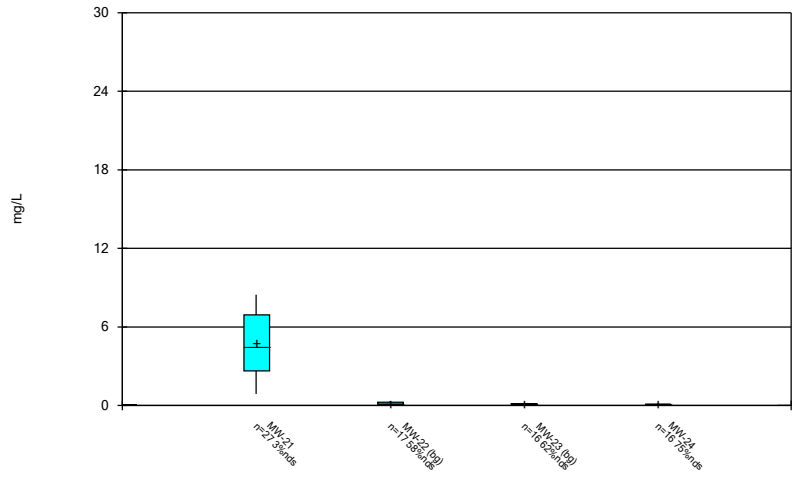
Box & Whiskers Plot



Constituent: Boron Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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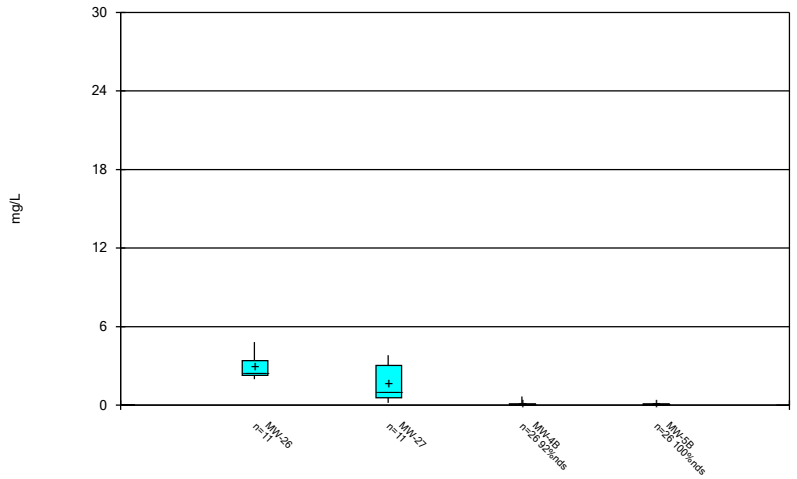
Box & Whiskers Plot



Constituent: Boron Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

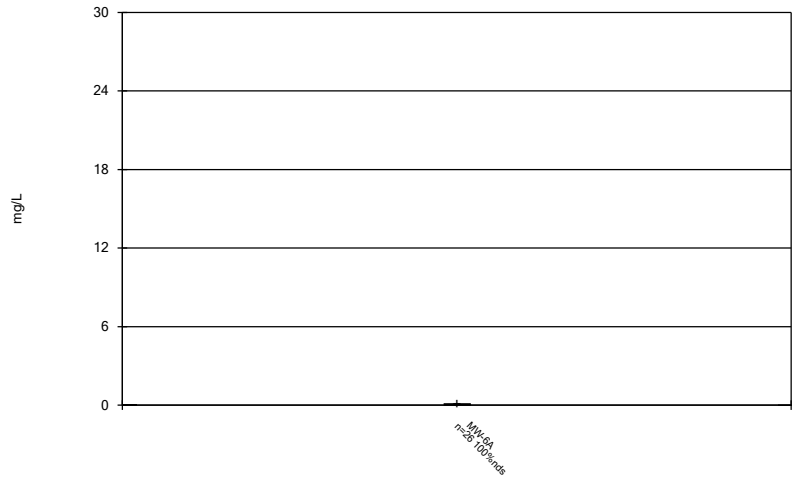
Box & Whiskers Plot



Constituent: Boron Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

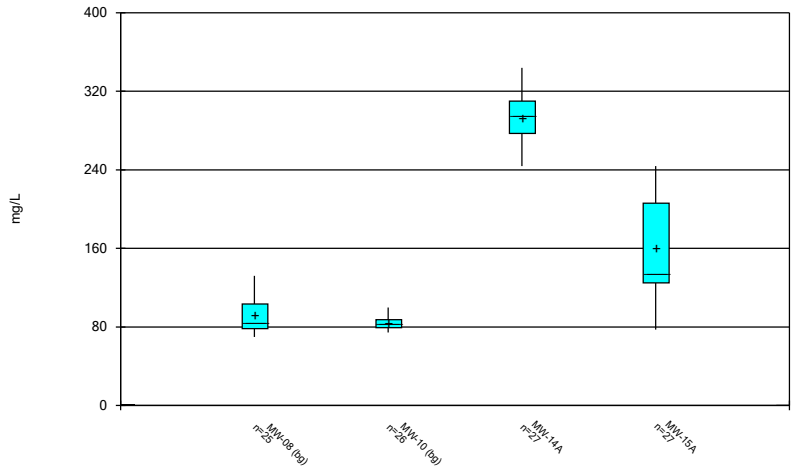
Box & Whiskers Plot



Constituent: Boron Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

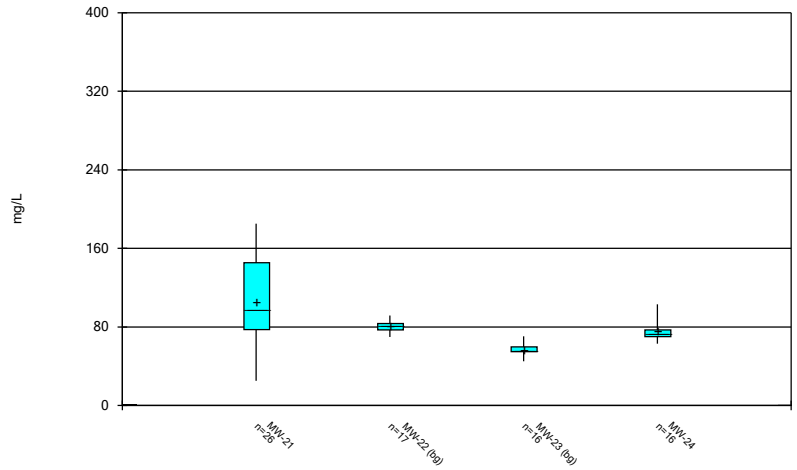
Box & Whiskers Plot



Constituent: Calcium Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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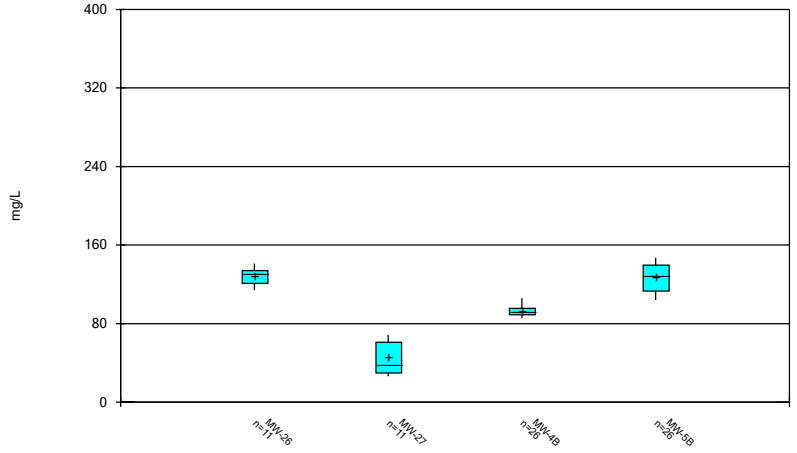
Box & Whiskers Plot



Constituent: Calcium Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

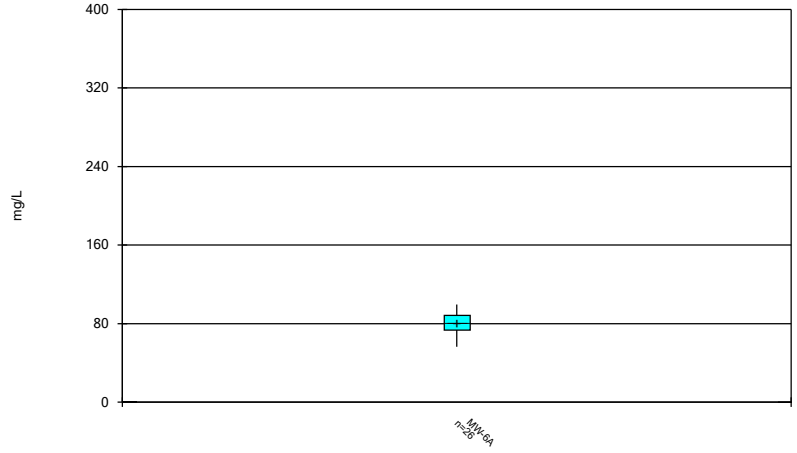
Box & Whiskers Plot



Constituent: Calcium Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

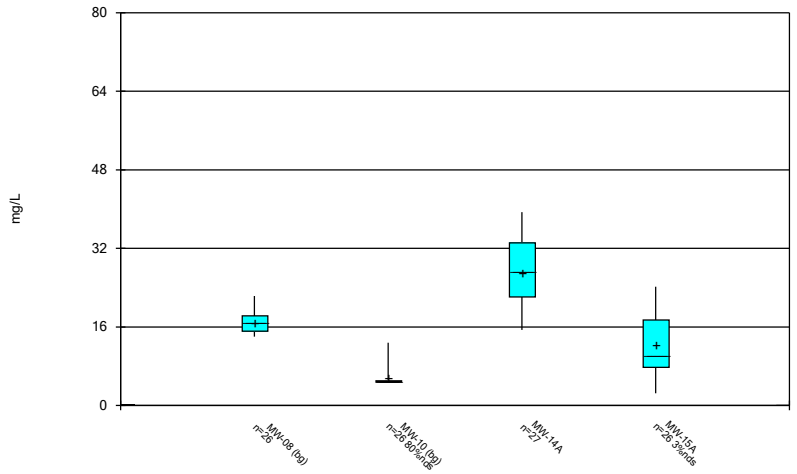
Box & Whiskers Plot



Constituent: Calcium Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

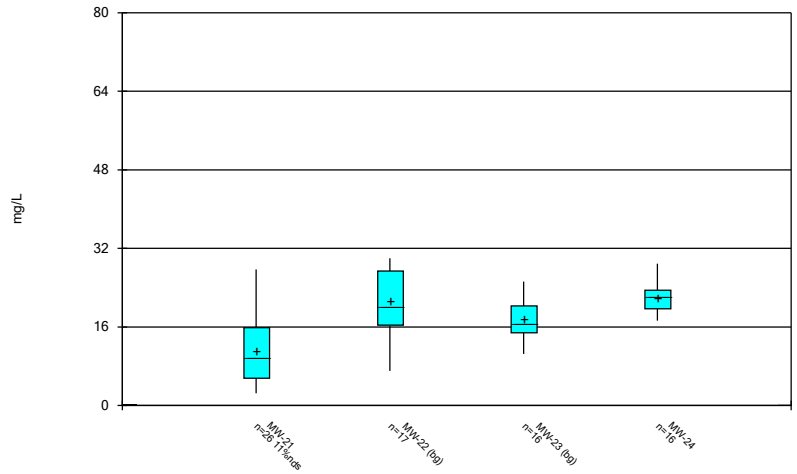
Box & Whiskers Plot



Constituent: Chloride Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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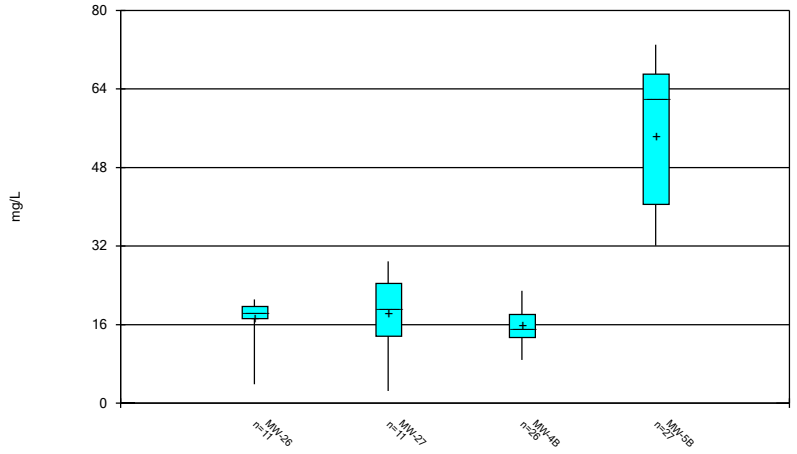
Box & Whiskers Plot



Constituent: Chloride Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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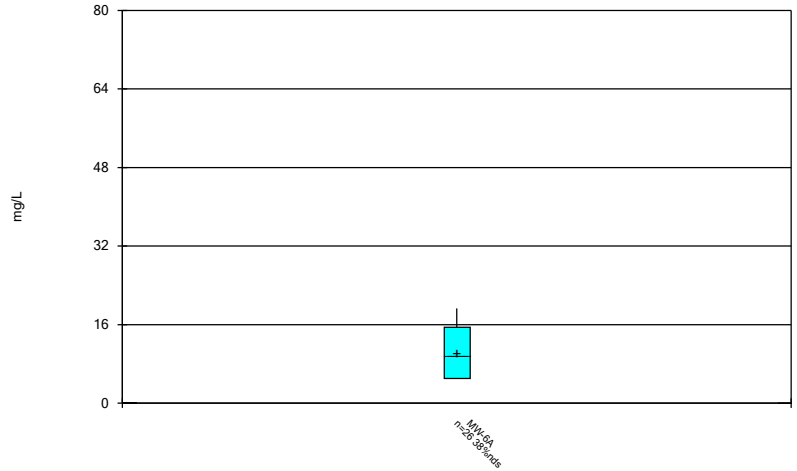
Box & Whiskers Plot



Constituent: Chloride Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

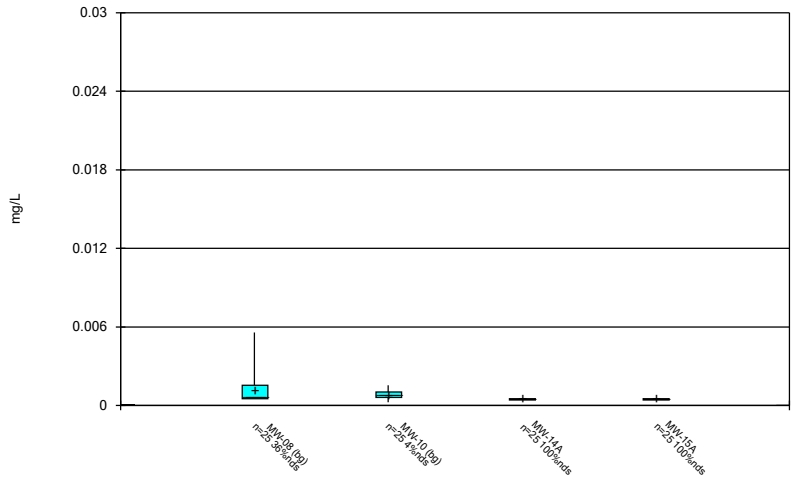
Box & Whiskers Plot



Constituent: Chloride Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

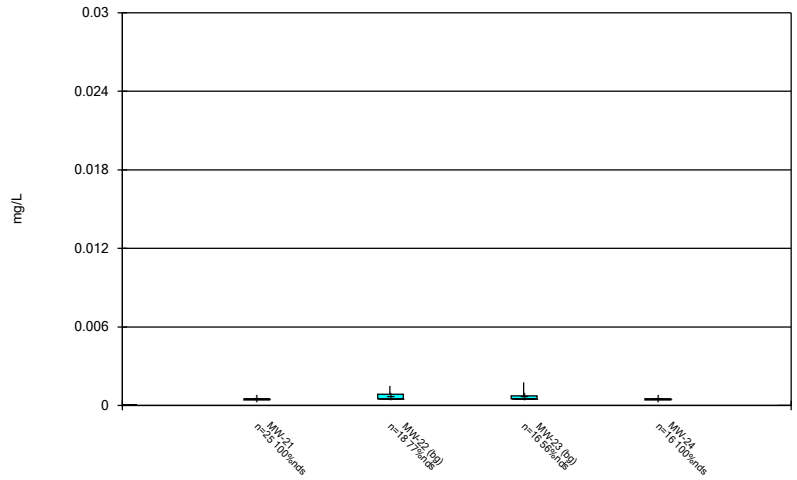
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

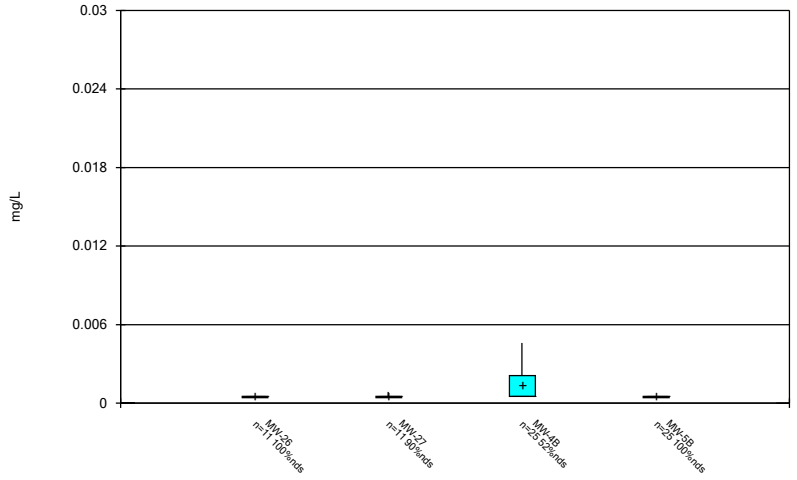
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

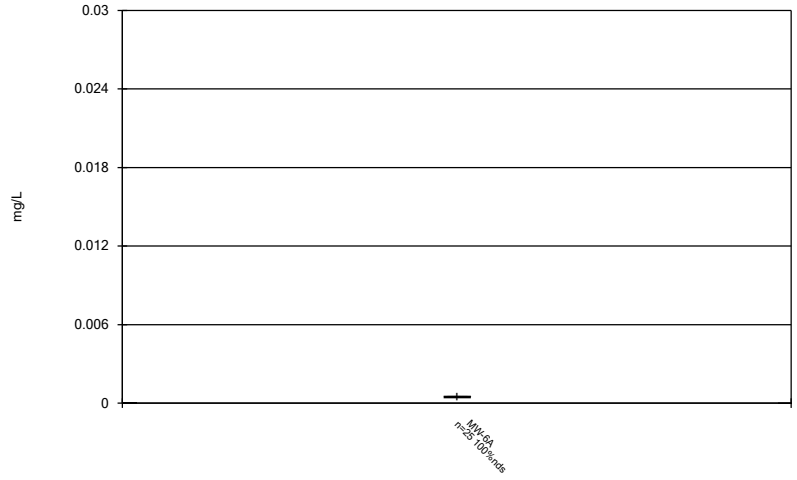
Box & Whiskers Plot



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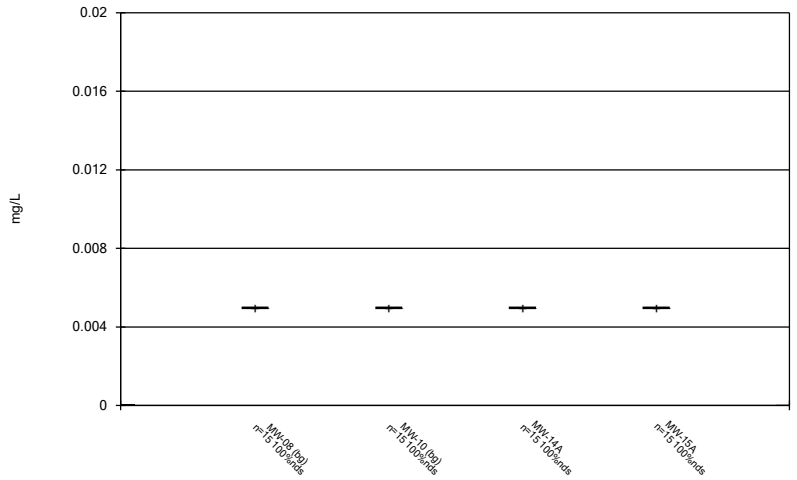
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

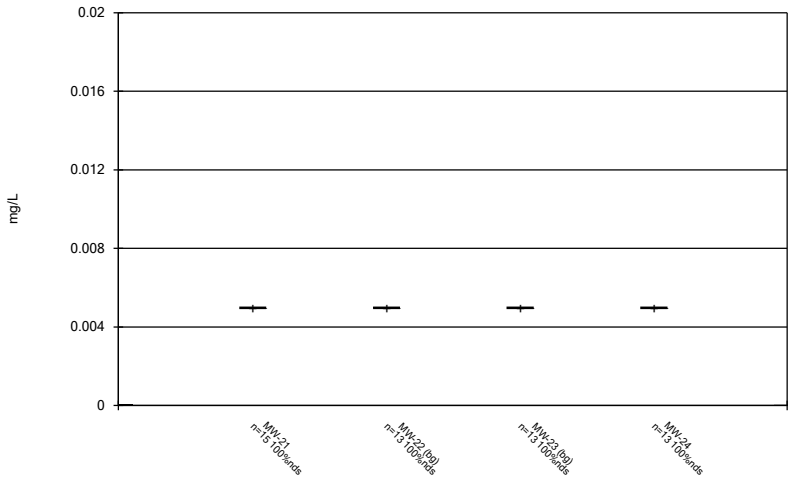
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

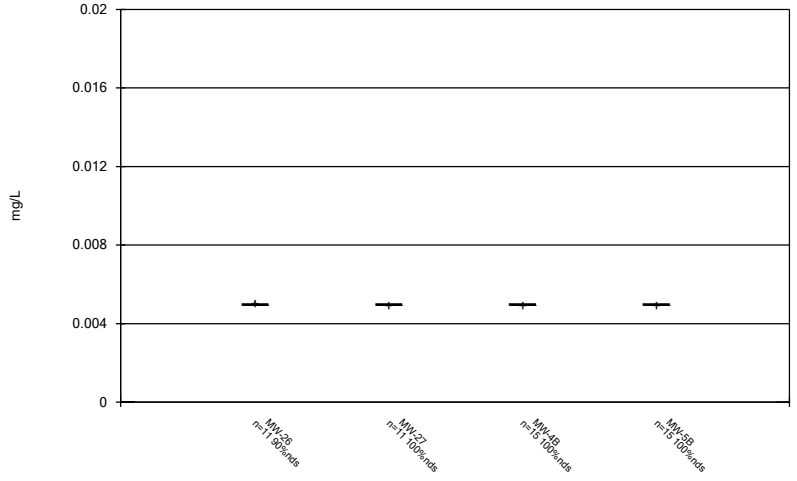
Box & Whiskers Plot



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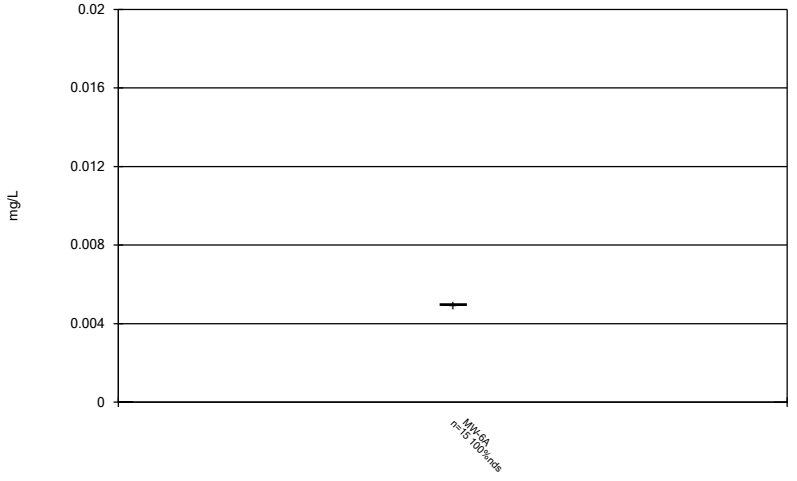
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

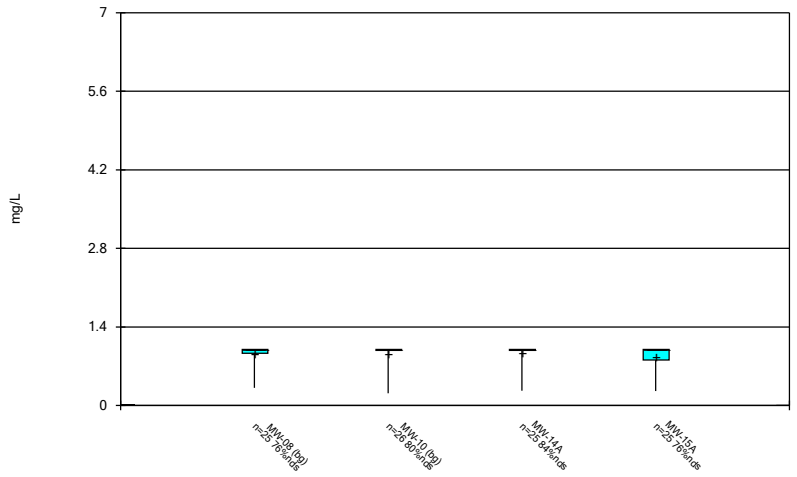
Box & Whiskers Plot



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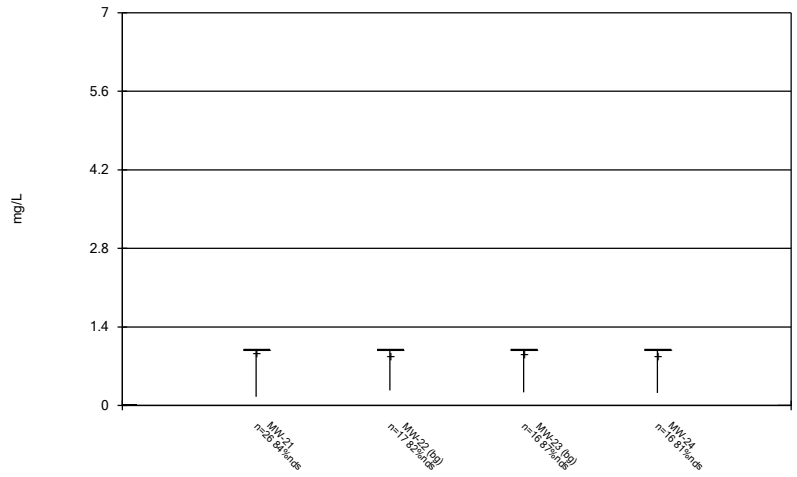
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

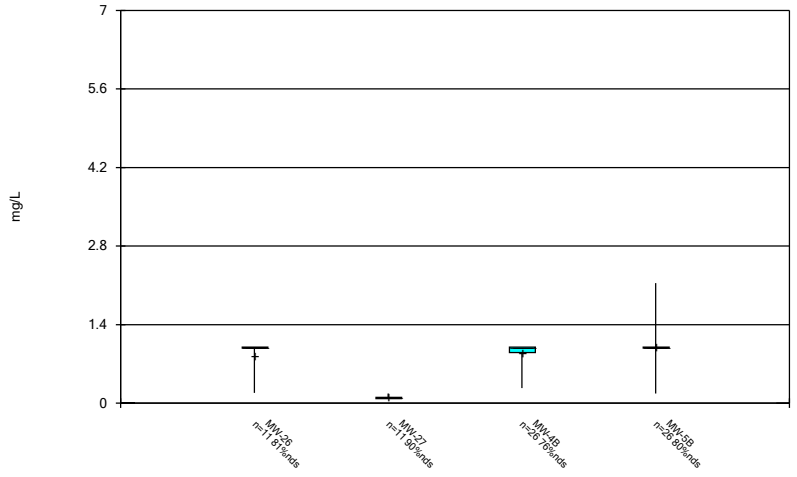
Box & Whiskers Plot



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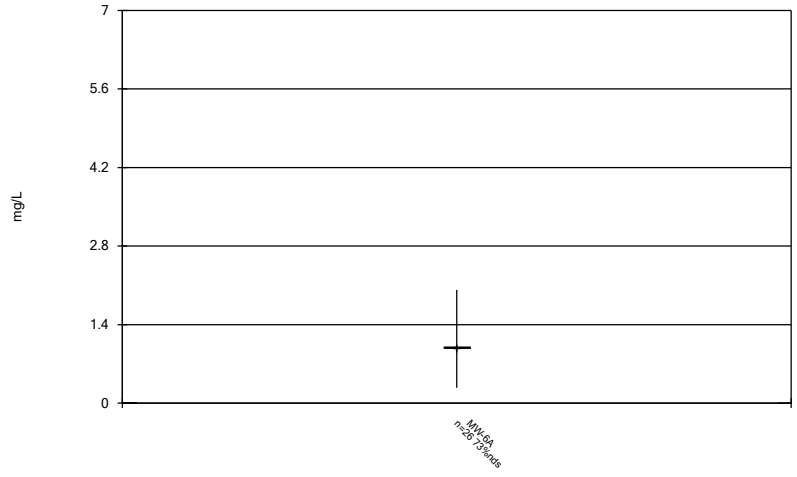
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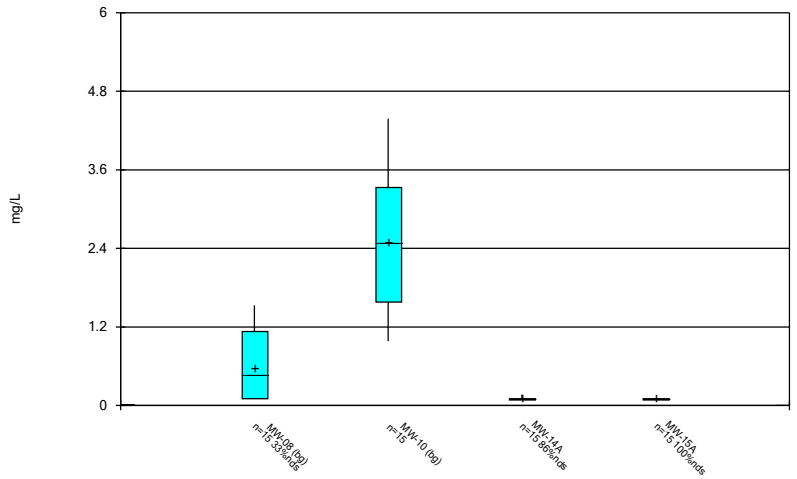
Box & Whiskers Plot



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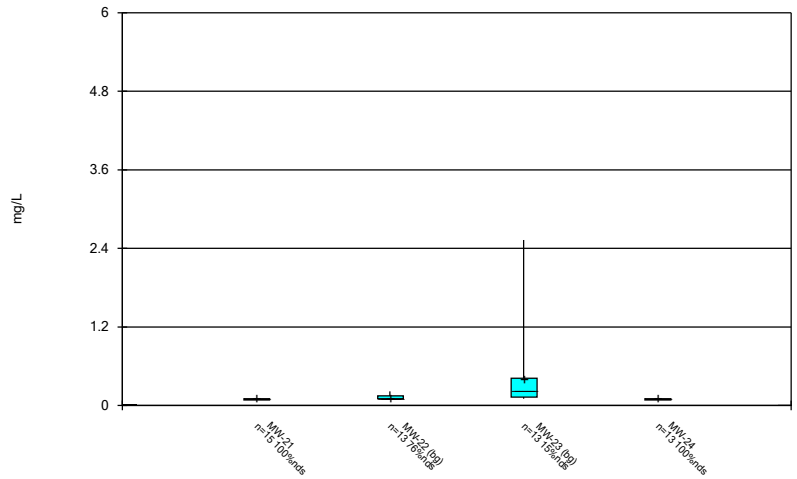
Box & Whiskers Plot



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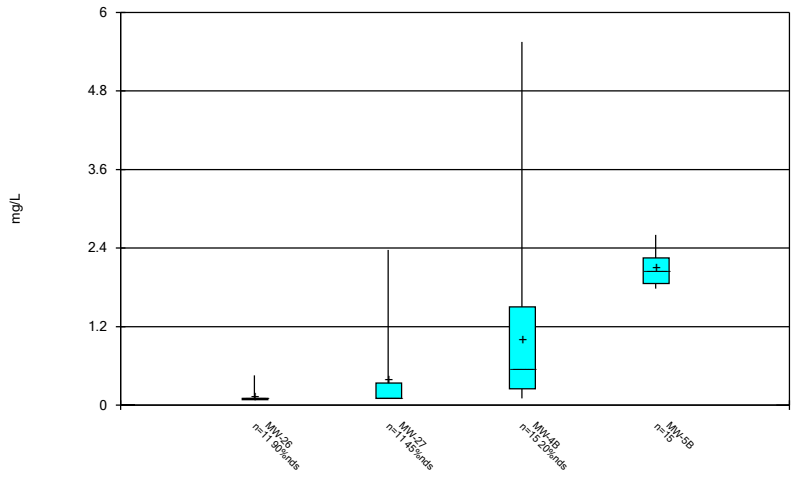
Box & Whiskers Plot



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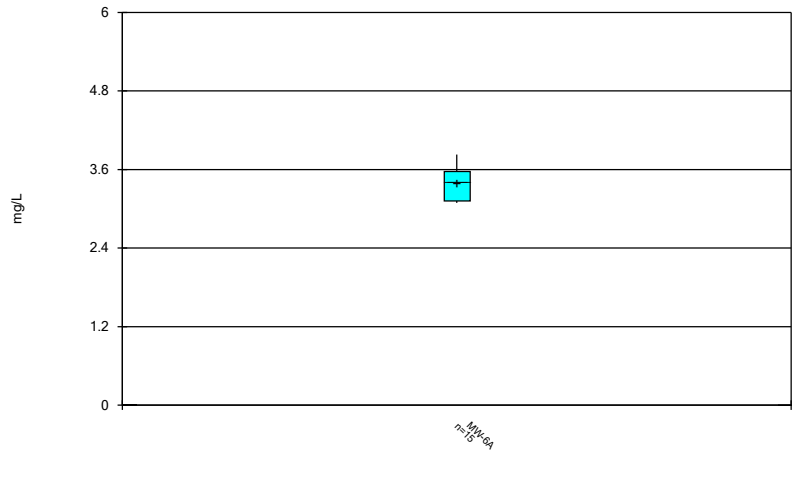
Box & Whiskers Plot



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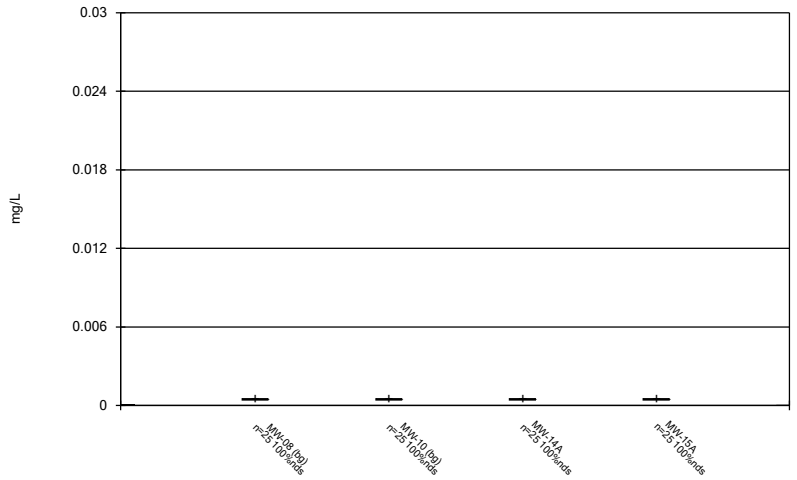
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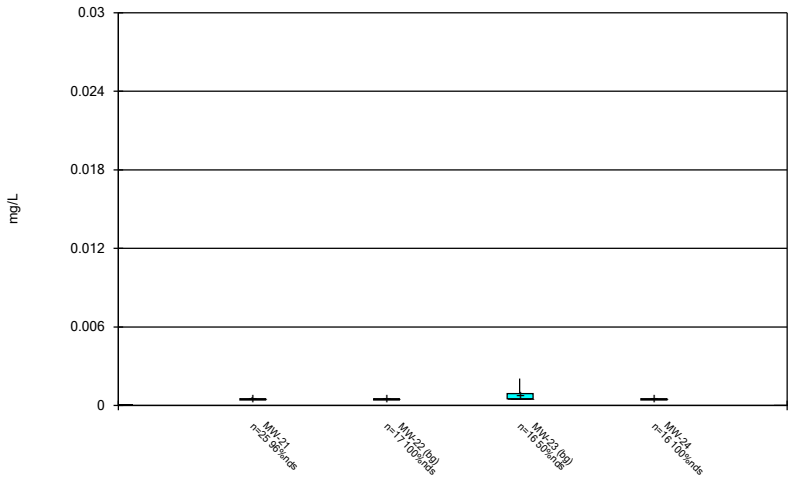
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

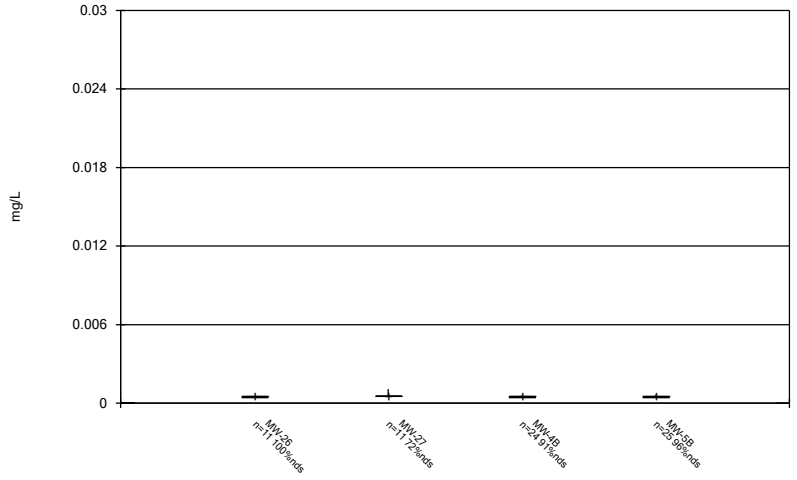
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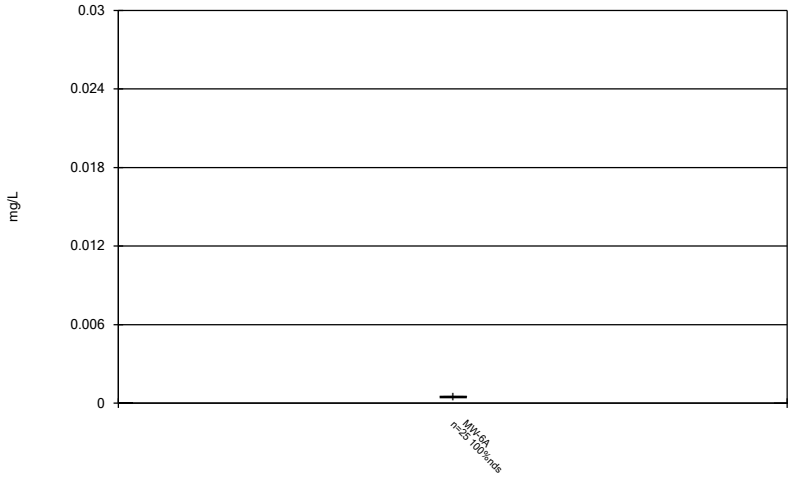
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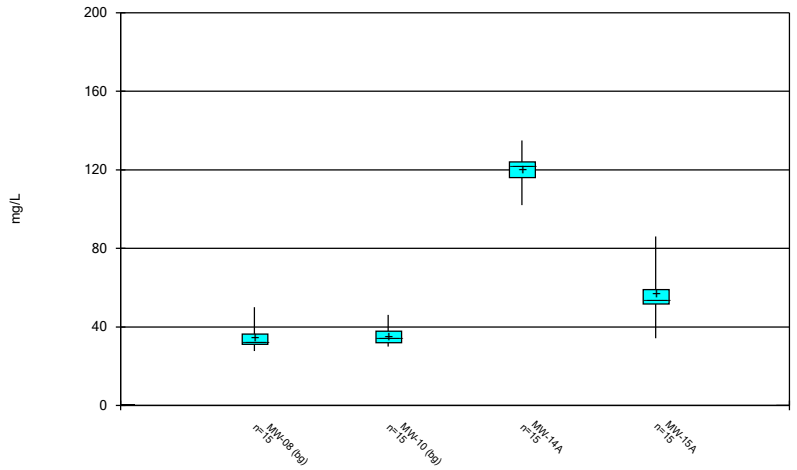
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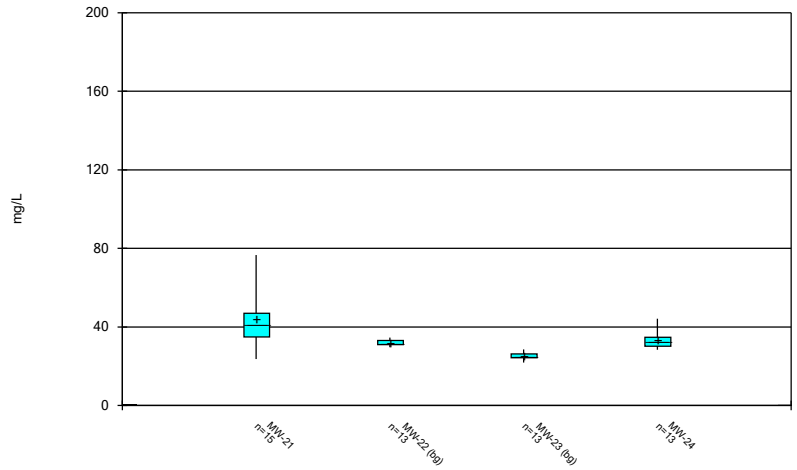
Box & Whiskers Plot



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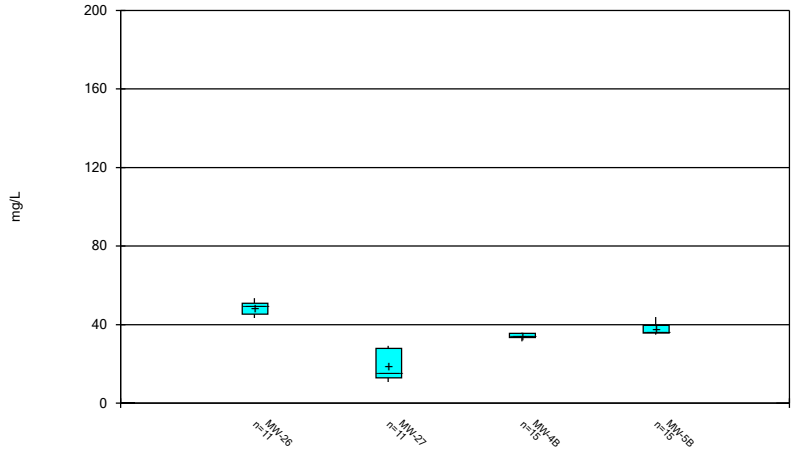
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

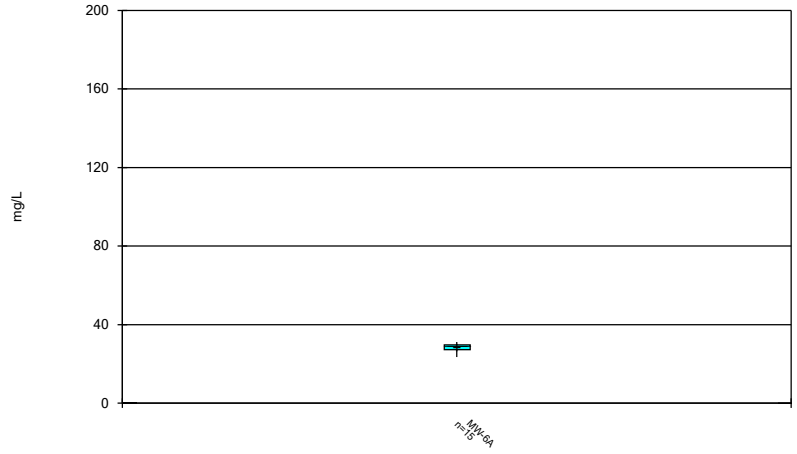
Box & Whiskers Plot



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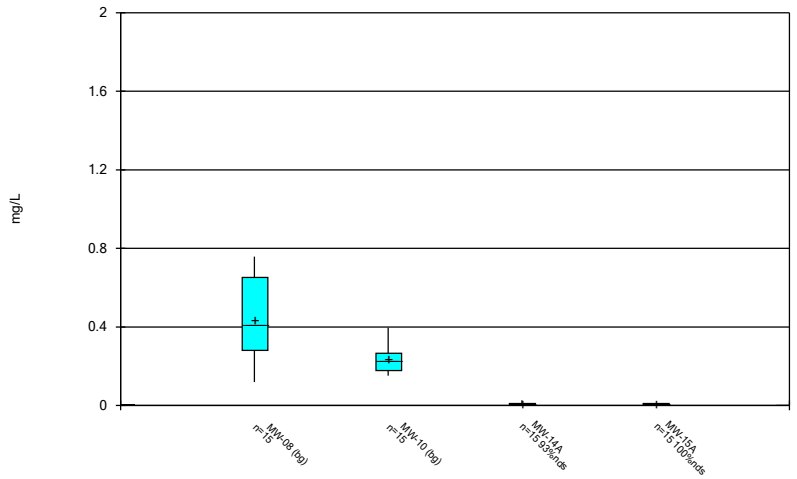
Box & Whiskers Plot



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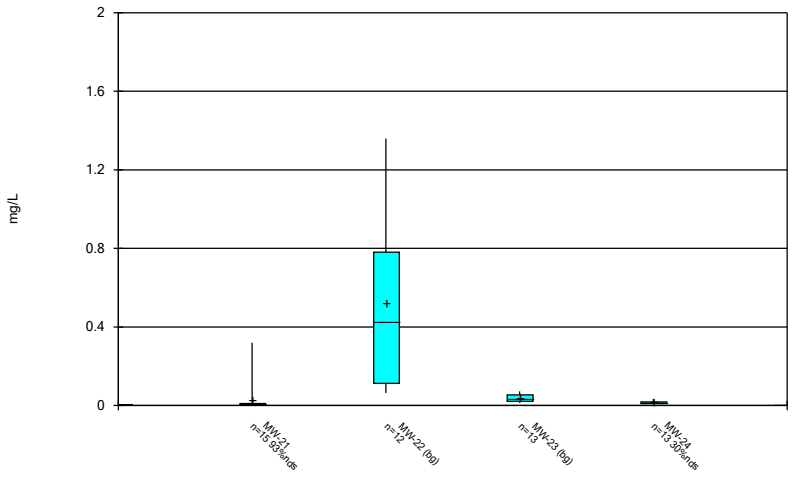
Box & Whiskers Plot



Constituent: Manganese Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
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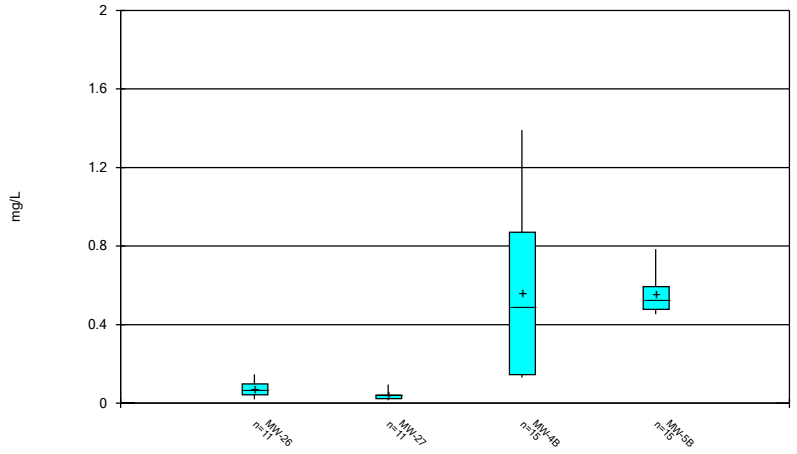
Box & Whiskers Plot



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Box & Whiskers Plot



Constituent: Manganese Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
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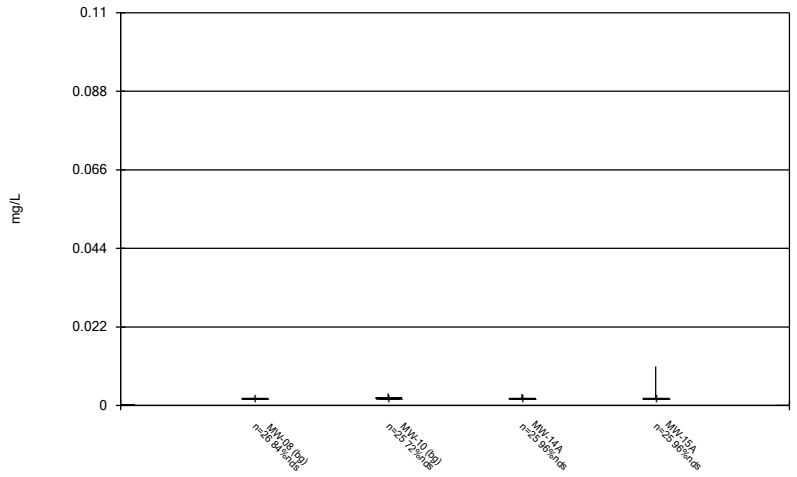
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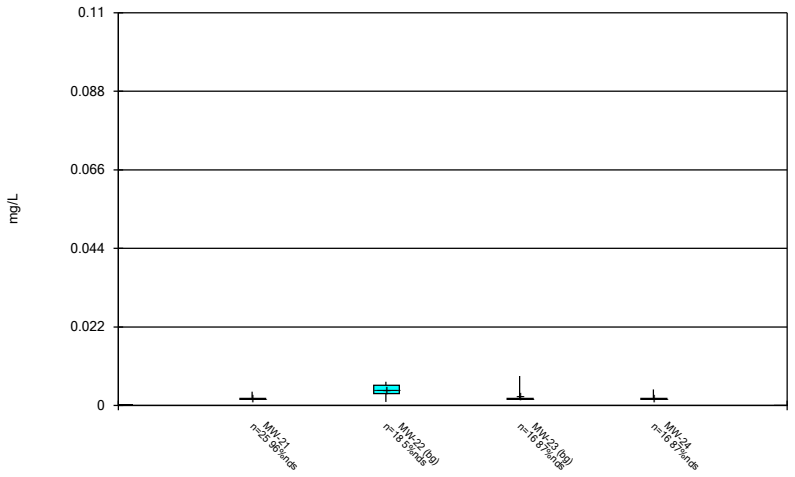
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

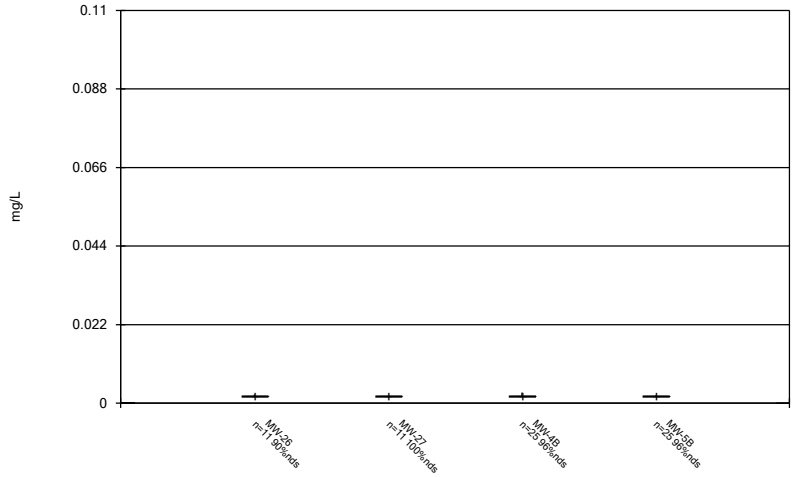
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

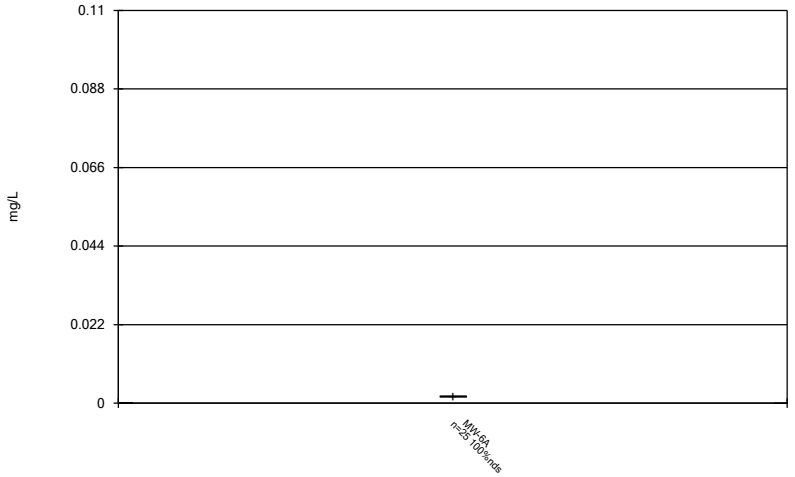
Box & Whiskers Plot



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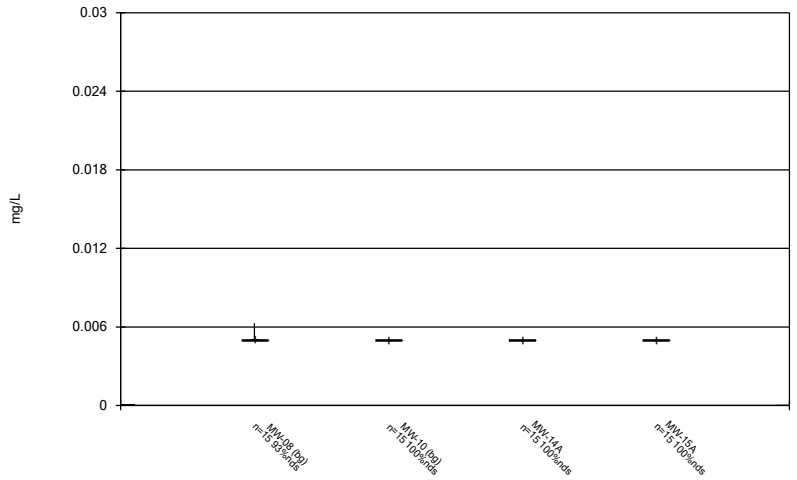
Box & Whiskers Plot



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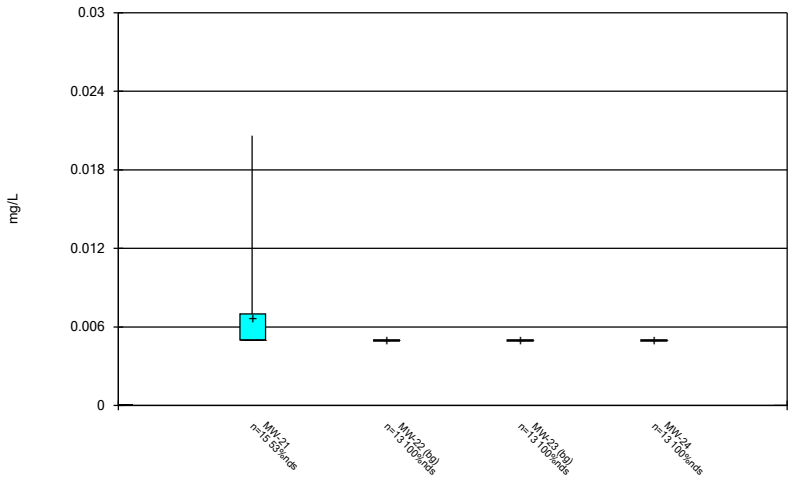
Box & Whiskers Plot



Constituent: Nickel Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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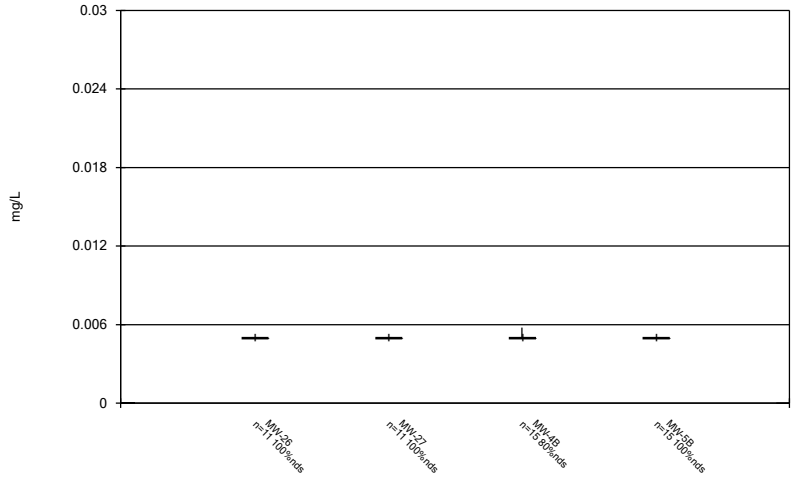
Box & Whiskers Plot



Constituent: Nickel Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

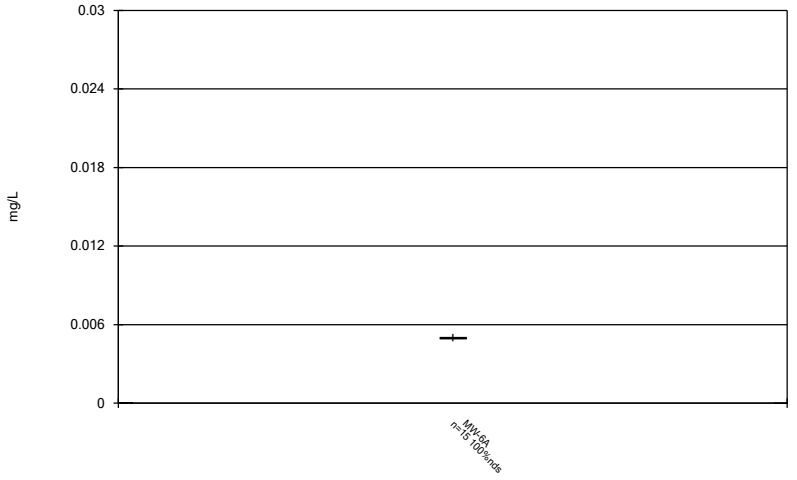
Box & Whiskers Plot



Constituent: Nickel Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

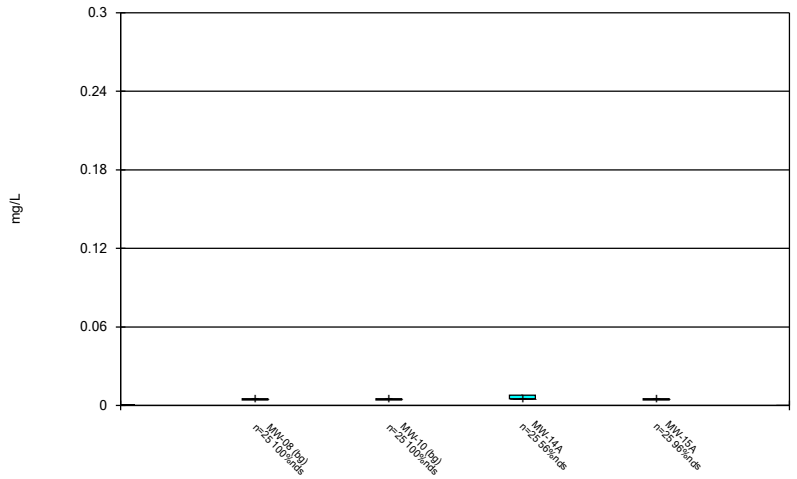
Box & Whiskers Plot



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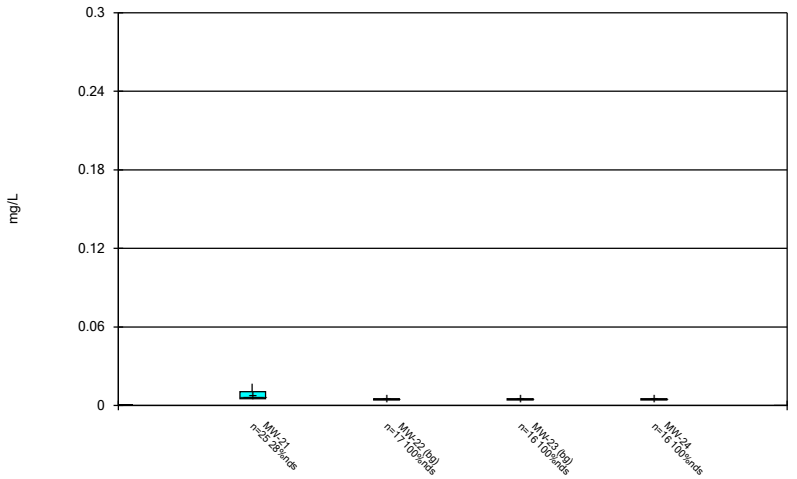
Box & Whiskers Plot



Constituent: Selenium Analysis Run 12/15/2025 3:57 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

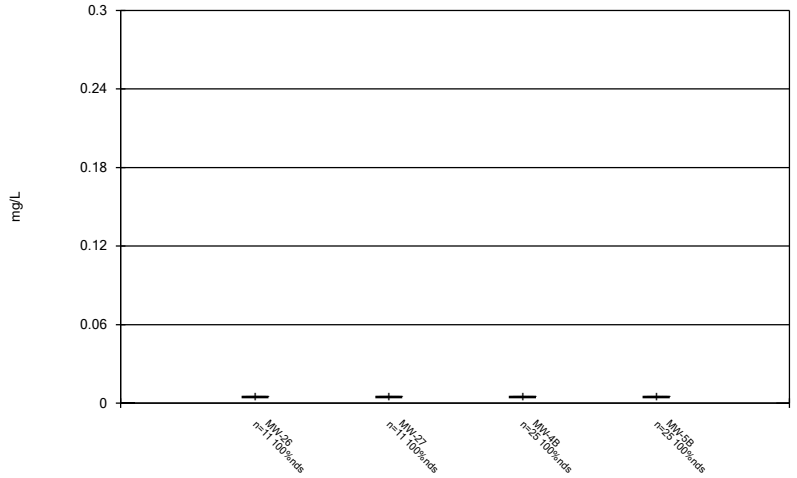
Box & Whiskers Plot



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

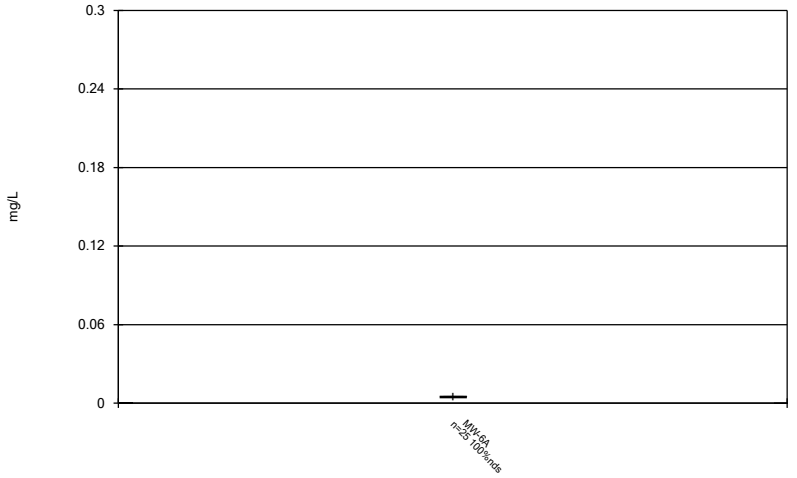
Box & Whiskers Plot



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

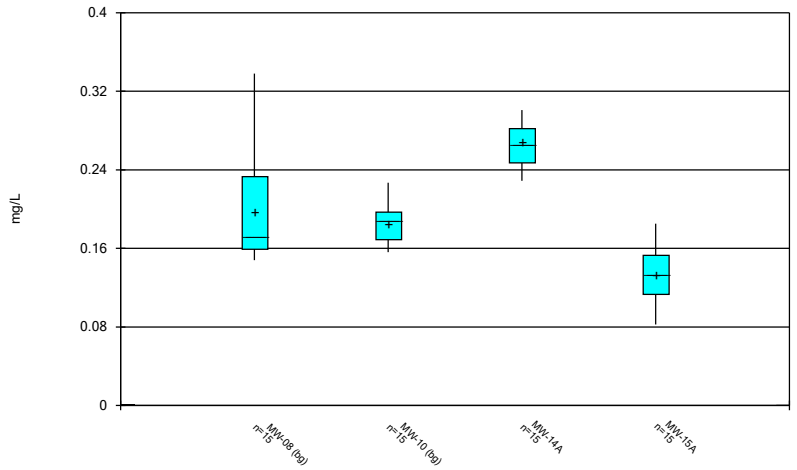
Box & Whiskers Plot



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

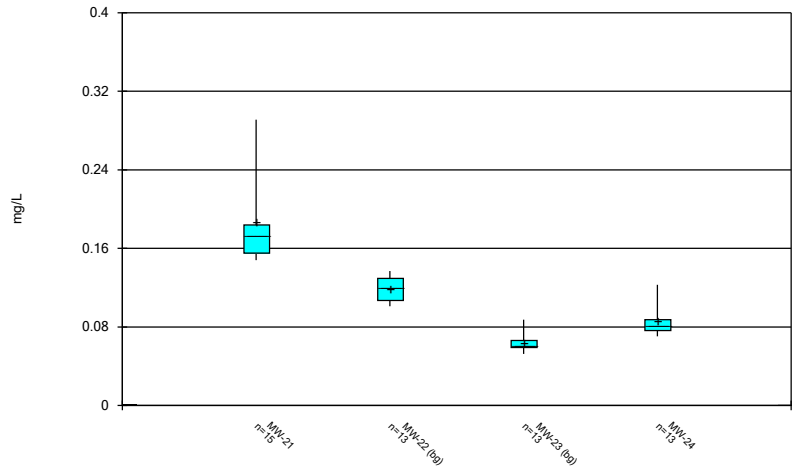
Box & Whiskers Plot



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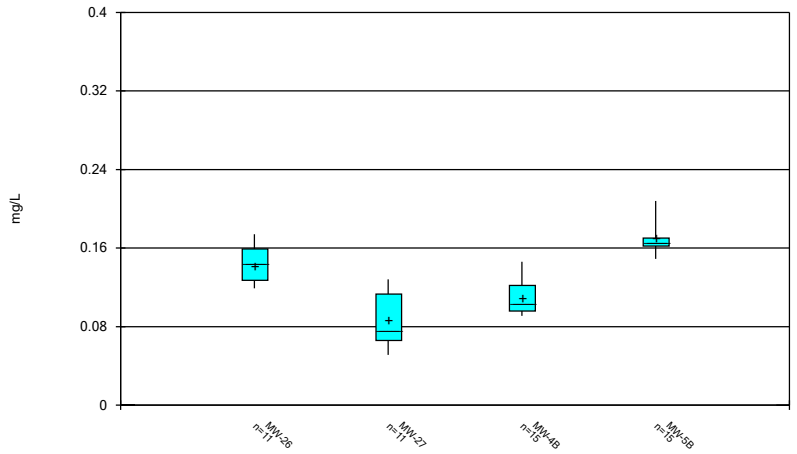
Box & Whiskers Plot



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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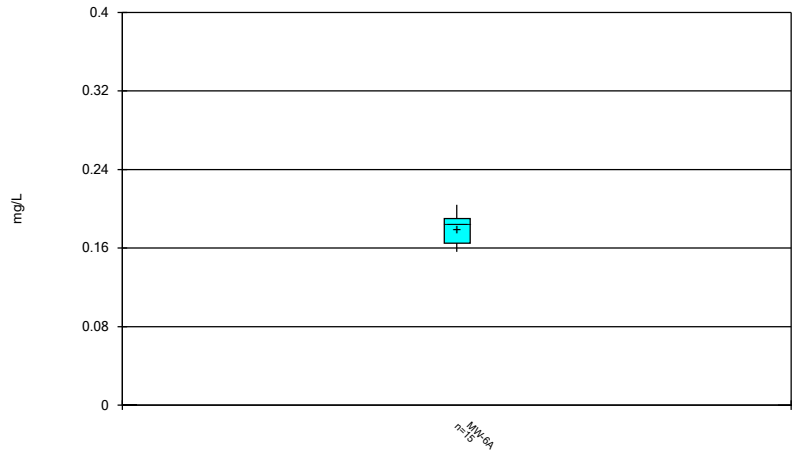
Box & Whiskers Plot



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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

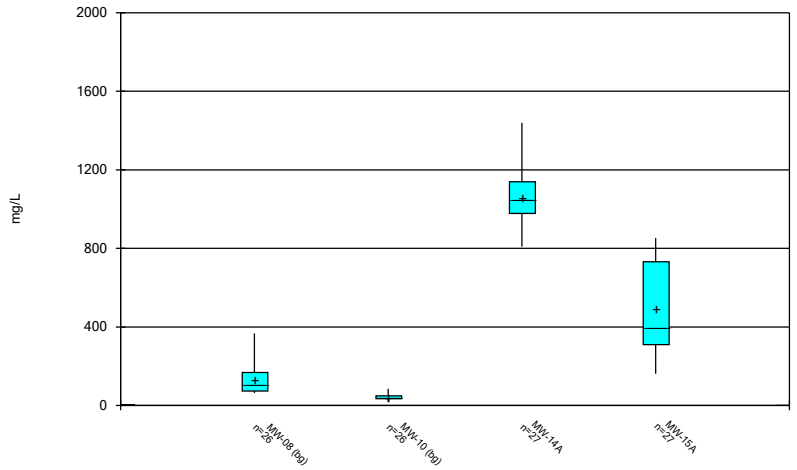
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

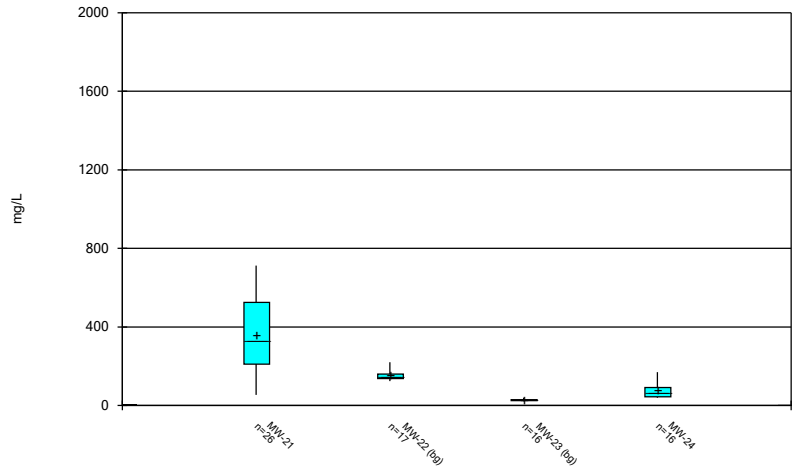
Box & Whiskers Plot



Constituent: Sulfate Analysis Run 12/15/2025 3:58 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

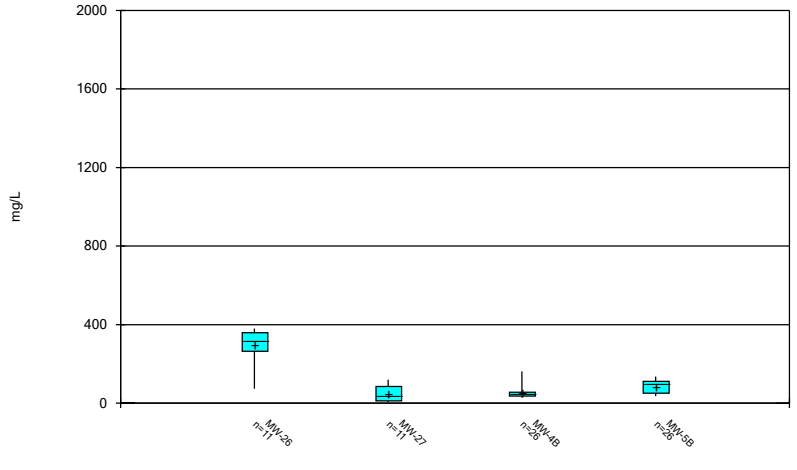
Box & Whiskers Plot



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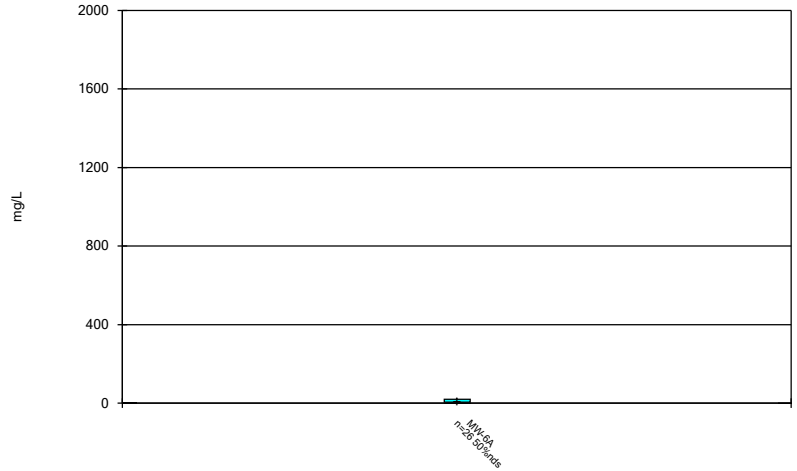
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

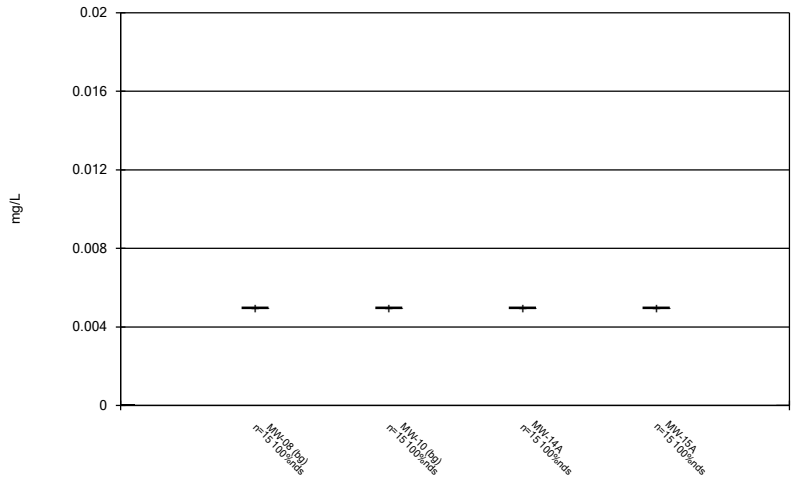
Box & Whiskers Plot



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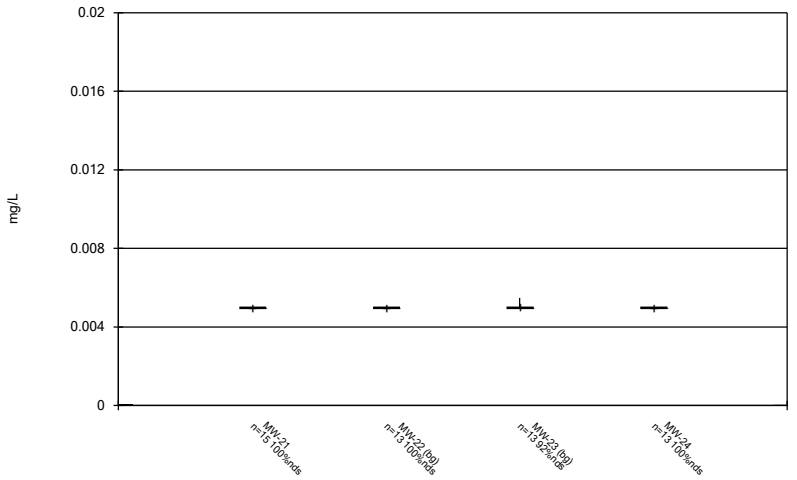
Box & Whiskers Plot



Constituent: Vanadium Analysis Run 12/15/2025 3:58 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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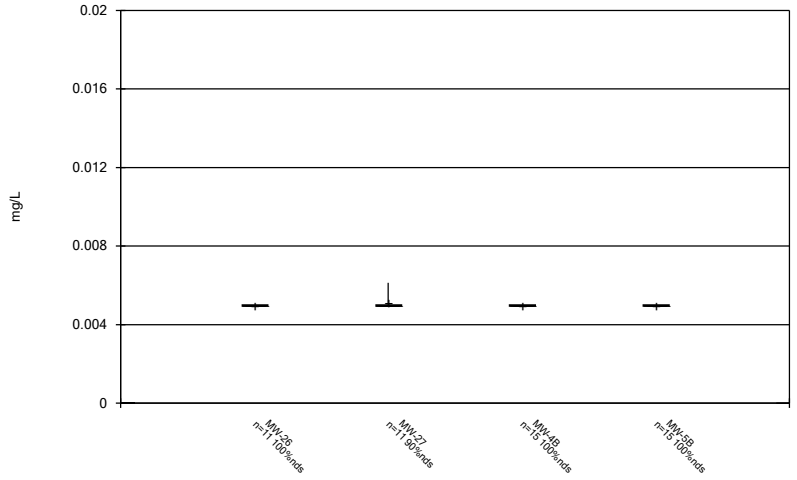
Box & Whiskers Plot



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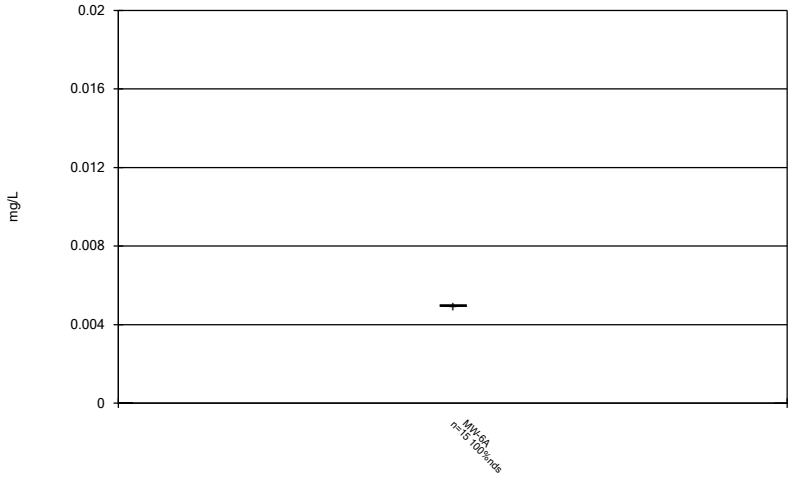
Box & Whiskers Plot



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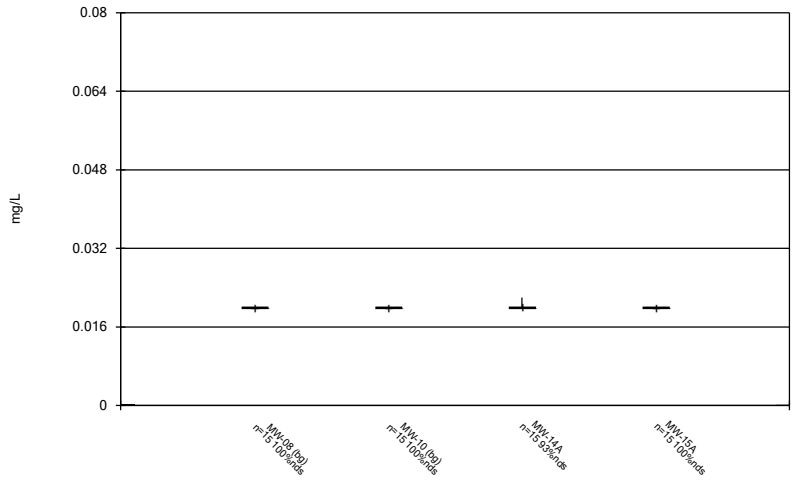
Box & Whiskers Plot



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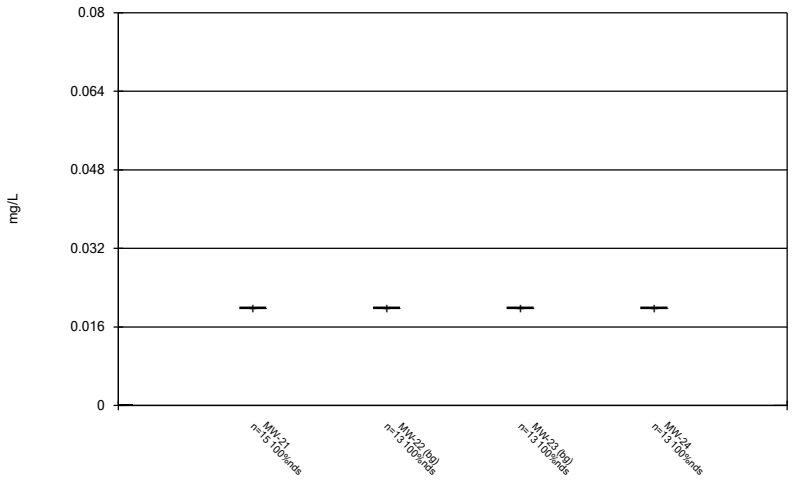
Box & Whiskers Plot



Constituent: Zinc Analysis Run 12/15/2025 3:58 PM View: State Wells Descriptive
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

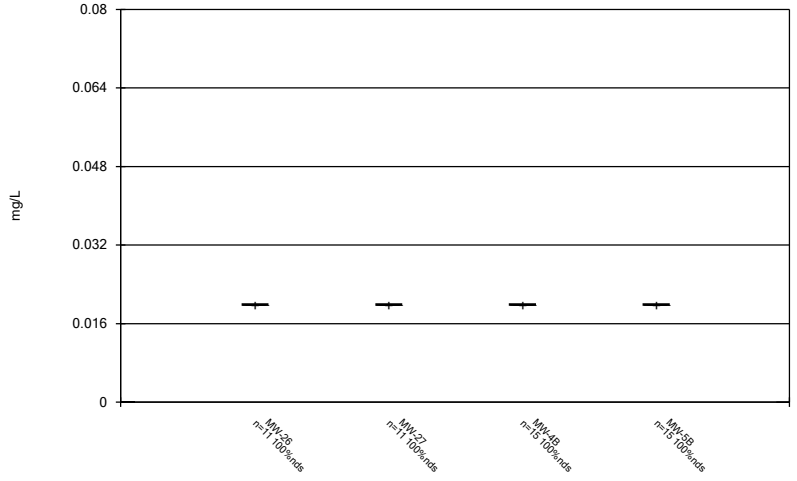
Box & Whiskers Plot



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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

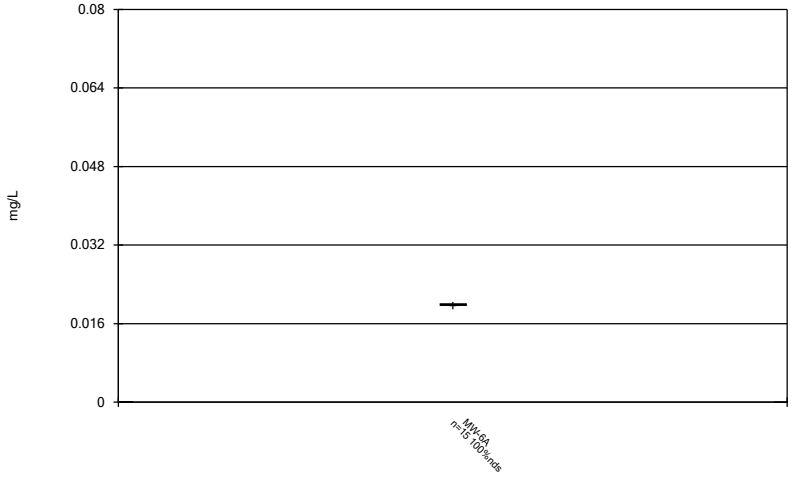
Box & Whiskers Plot



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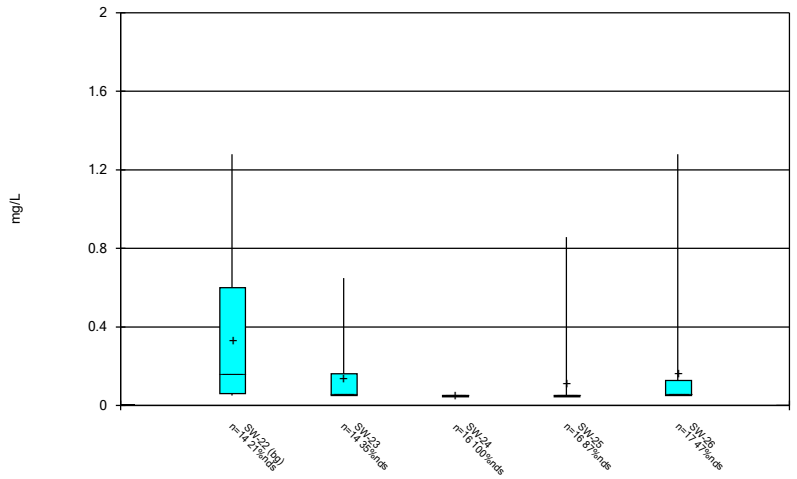
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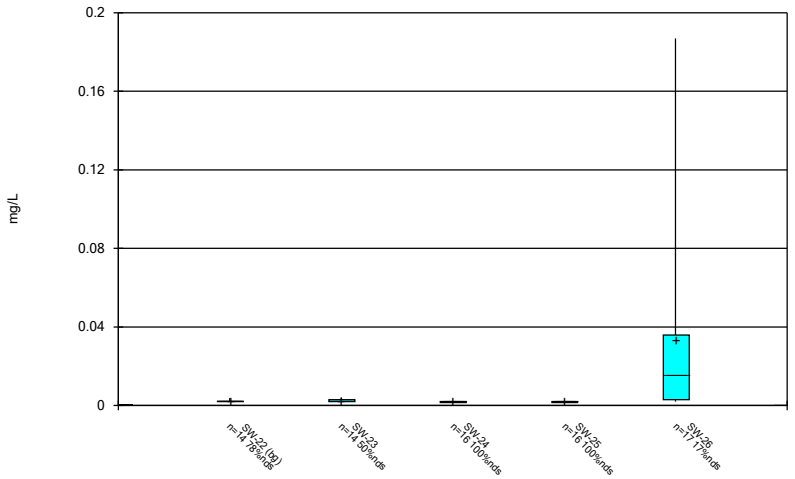
Box & Whiskers Plot



Constituent: Aluminum Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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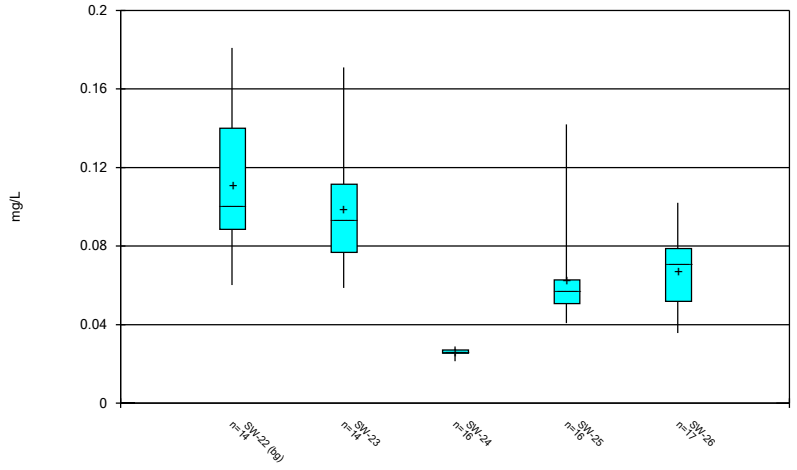
Box & Whiskers Plot



Constituent: Arsenic Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

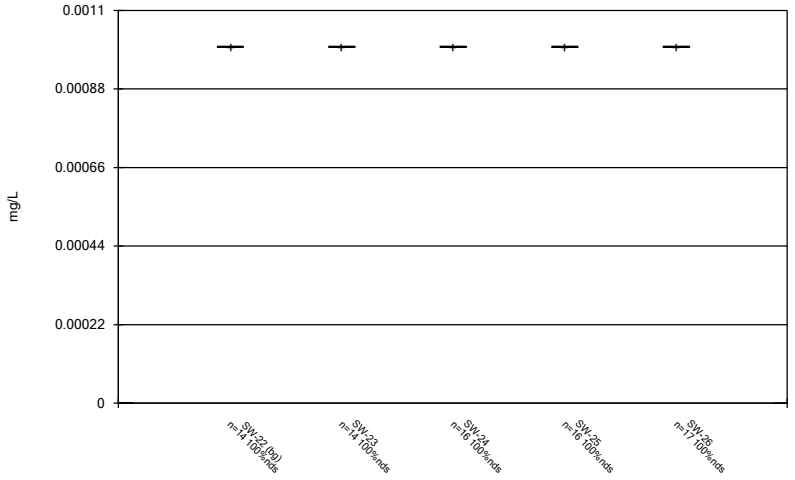
Box & Whiskers Plot



Constituent: Barium Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

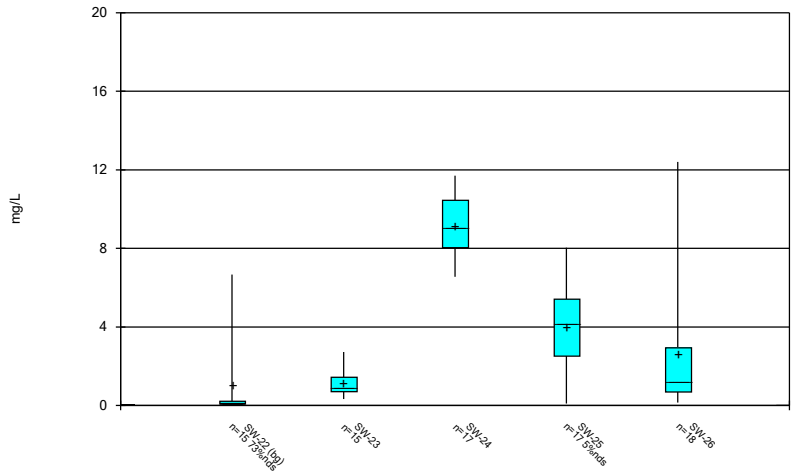
Box & Whiskers Plot



Constituent: Beryllium Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

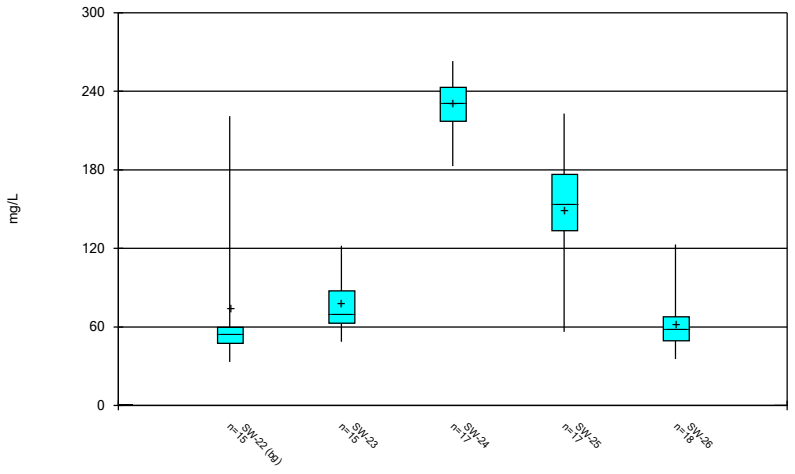
Box & Whiskers Plot



Constituent: Boron Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

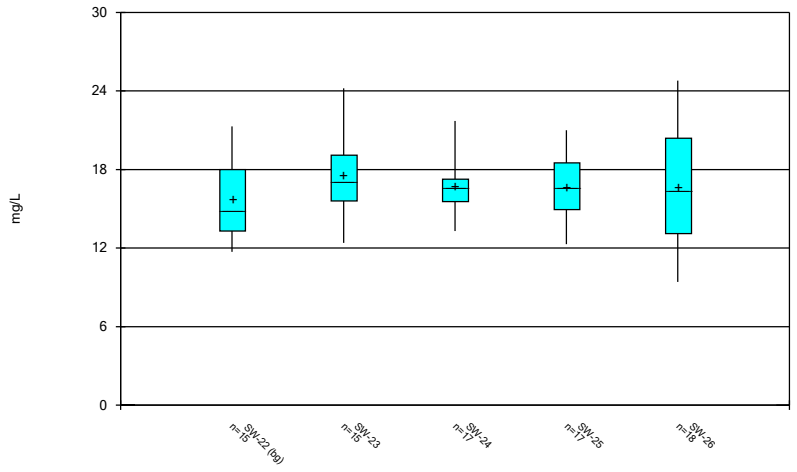
Box & Whiskers Plot



Constituent: Calcium Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
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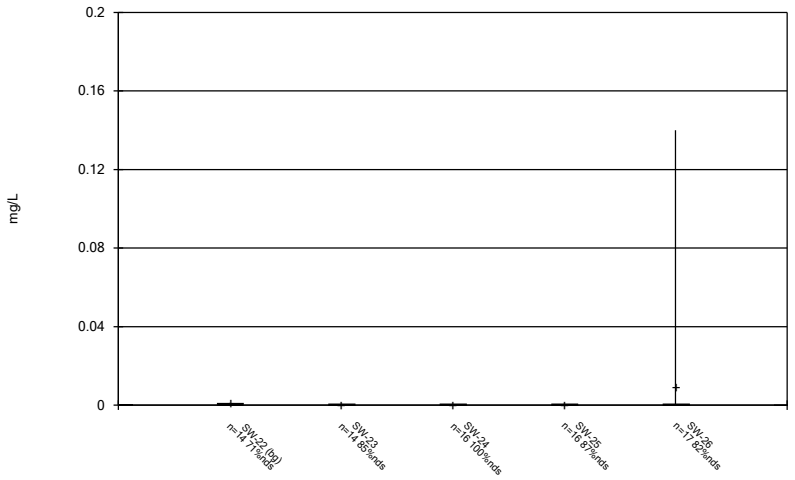
Box & Whiskers Plot



Constituent: Chloride Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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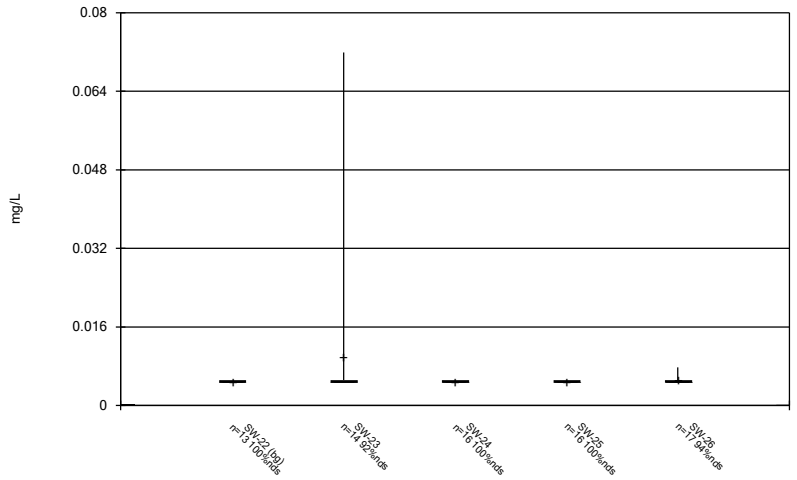
Box & Whiskers Plot



Constituent: Cobalt Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

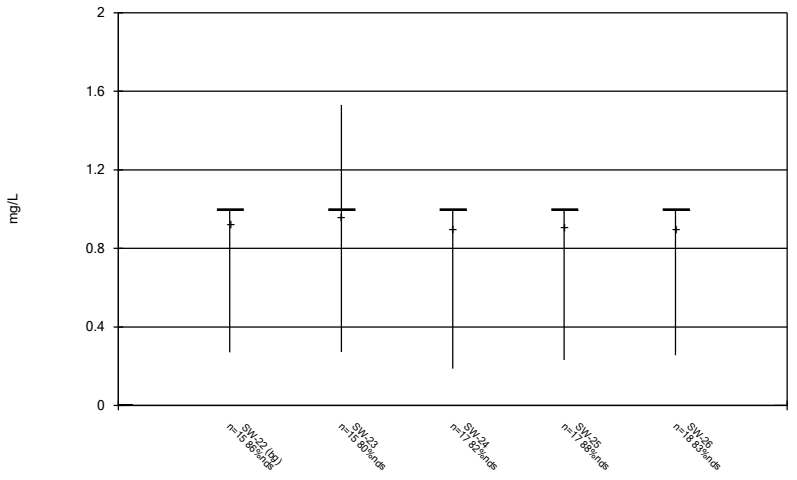
Box & Whiskers Plot



Constituent: Copper Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
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Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

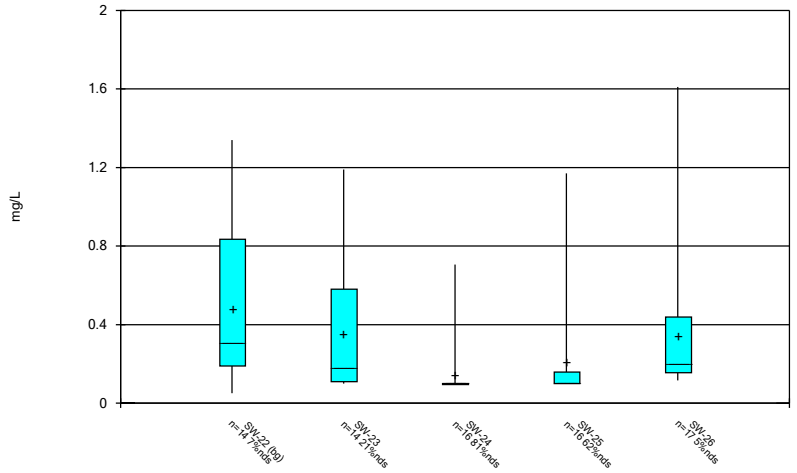
Box & Whiskers Plot



Constituent: Fluoride Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
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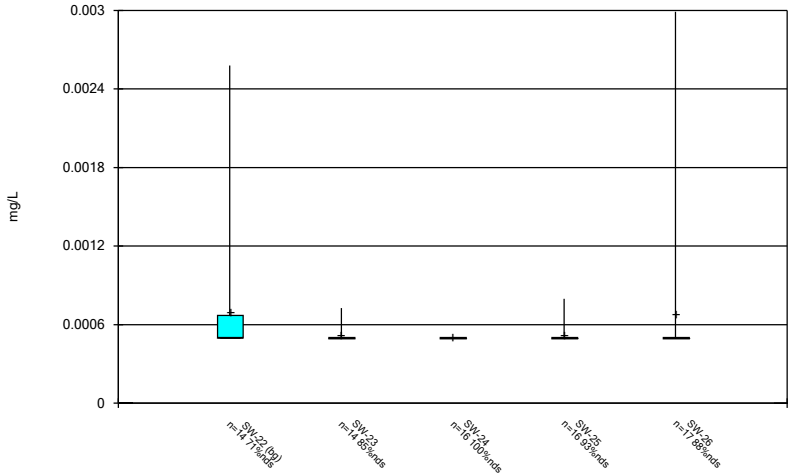
Box & Whiskers Plot



Constituent: Iron Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
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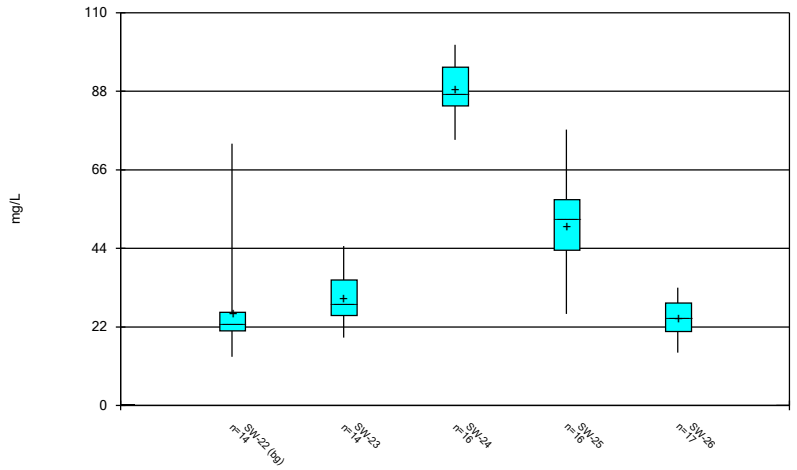
Box & Whiskers Plot



Constituent: Lead Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
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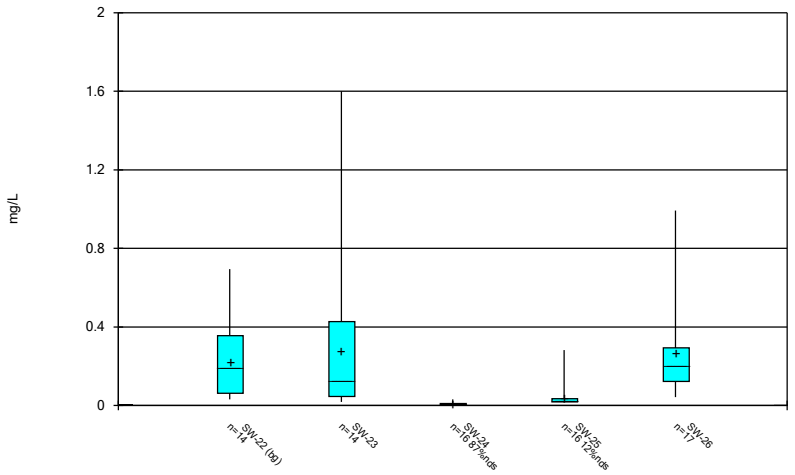
Box & Whiskers Plot



Constituent: Magnesium Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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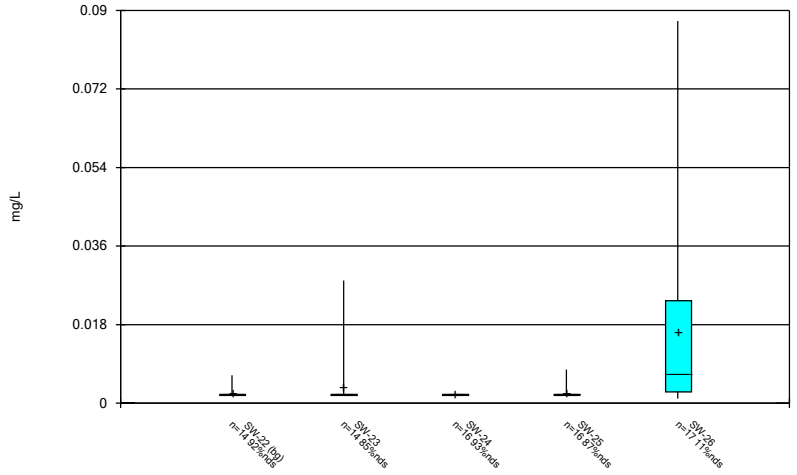
Box & Whiskers Plot



Constituent: Manganese Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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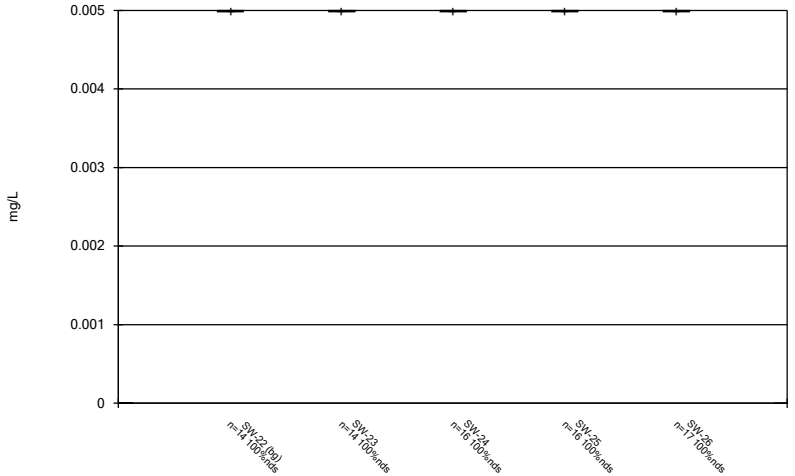
Box & Whiskers Plot



Constituent: Molybdenum Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
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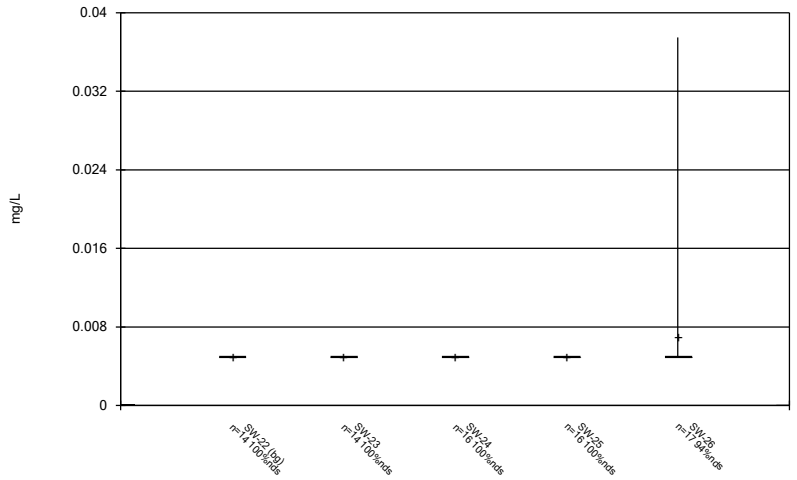
Box & Whiskers Plot



Constituent: Nickel Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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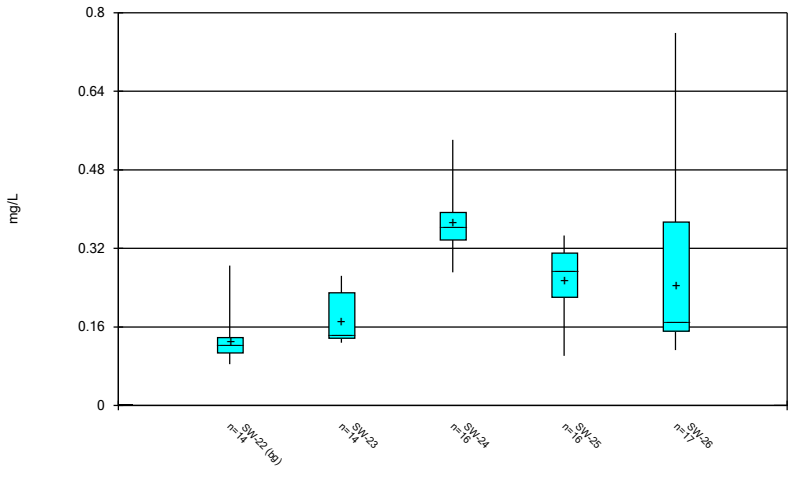
Box & Whiskers Plot



Constituent: Selenium Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
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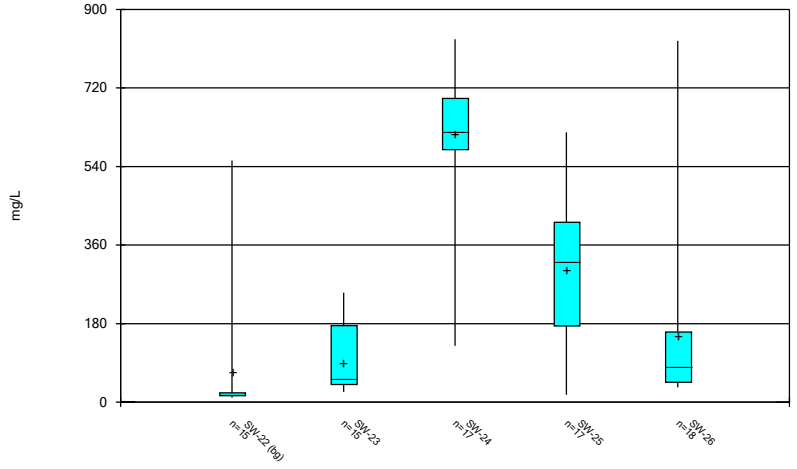
Box & Whiskers Plot



Constituent: Strontium Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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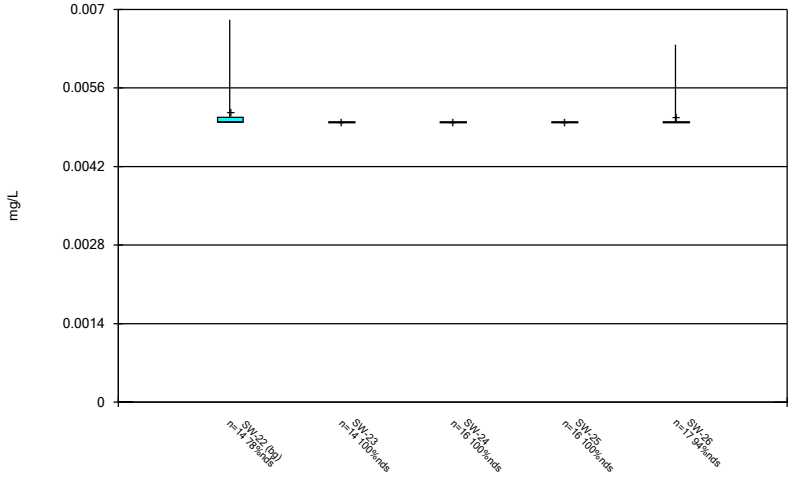
Box & Whiskers Plot



Constituent: Sulfate Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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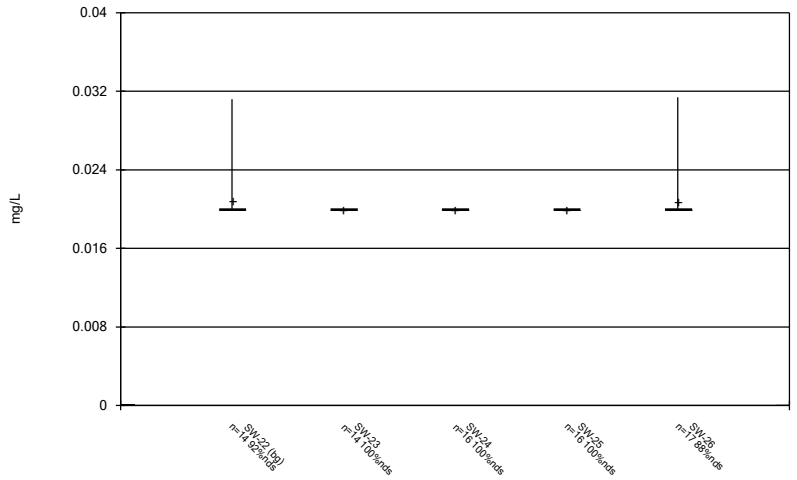
Box & Whiskers Plot



Constituent: Vanadium Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Box & Whiskers Plot



Constituent: Zinc Analysis Run 12/15/2025 3:56 PM View: State Wells Descriptive
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

FIGURE C.

Outlier Summary - Monitoring Wells

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 4:00 PM

	MW-15A Barium (mg/L)	MW-08 Calcium (mg/L)	MW-15A Chloride (mg/L)	MW-08 Fluoride (mg/L)	MW-14A Fluoride (mg/L)	MW-15A Fluoride (mg/L)	MW-4B Lead (mg/L)	MW-22 Manganese (mg/L)
6/6/2016	2.13 (o)							
6/7/2016		152 (o)					0.00147 (o)	
4/17/2017			47.4 (o)	1.69 (o)	1.93 (o)	6.7 (o)		
8/6/2019								1.74 (o)

Tukey's Outlier Test - Upgradient Monitoring Wells - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 2:47 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Aluminum (mg/L)	**MW-08,MW-10,MW-22...**	**Yes**	**0.139,0.253,0.552,0.39,0.478,0.14...**	**NP**	**NaN**	**56**	**0.1427**	**0.3716**	**ln(x)**	**ShapiroFrancia**
Calcium (mg/L)	**MW-08,MW-10,MW-22...**	**Yes**	**152,44.9**	**NP**	**NaN**	**85**	**81.25**	**17.47**	**ln(x)**	**ShapiroFrancia**
Molybdenum (mg/L)	**MW-08,MW-10,MW-22...**	**Yes**	**0.00341,0.00568,0.00385,0.00423,0...**	**NP**	**NaN**	**85**	**0.002665**	**0.00134**	**ln(x)**	**ShapiroFrancia**

Tukey's Outlier Test - Upgradient Monitoring Wells - All Results

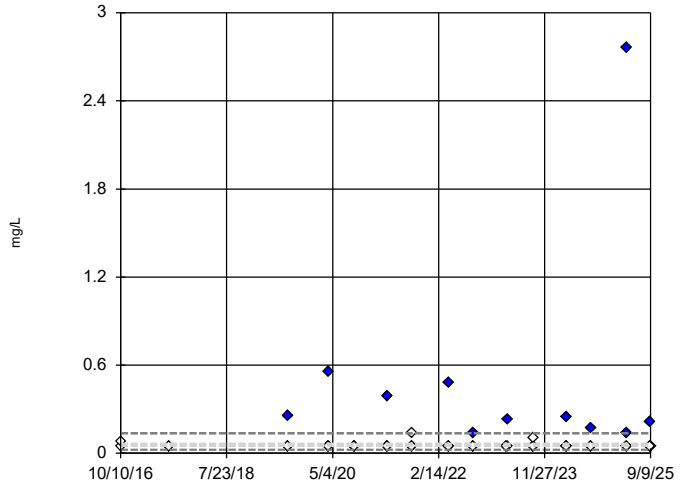
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 2:47 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Aluminum (mg/L)	**MW-08,MW-10,MW-22...**	**Yes**	**0.139,0.253,0.552,0.39,0.478,0.14...**	**NP**	**NaN**	**56**	**0.1427**	**0.3716**	**ln(x)**	**ShapiroFrancia**
Arsenic (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	83	0.003071	0.001671	ln(x)	ShapiroFrancia
Barium (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	83	0.136	0.07383	ln(x)	ShapiroFrancia
Beryllium (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	83	0.001	0	normal	ShapiroFrancia
Boron (mg/L)	MW-08,MW-10,MW-22...	n/a	n/a	NP	NaN	85	0.117	0.04631	unknown	ShapiroFrancia
Calcium (mg/L)	**MW-08,MW-10,MW-22...**	**Yes**	**152,44.9**	**NP**	**NaN**	**85**	**81.25**	**17.47**	**ln(x)**	**ShapiroFrancia**
Chloride (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	85	14.55	7.135	normal	ShapiroFrancia
Cobalt (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	84	0.0008752	0.0006689	ln(x)	ShapiroFrancia
Copper (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	56	0.005	0	normal	ShapiroFrancia
Fluoride (mg/L)	MW-08,MW-10,MW-22...	n/a	n/a	NP	NaN	85	0.9123	0.2397	unknown	ShapiroFrancia
Iron (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	56	0.9451	1.172	ln(x)	ShapiroFrancia
Lead (mg/L)	MW-08,MW-10,MW-22...	n/a	n/a	NP	NaN	83	0.0005526	0.0002232	unknown	ShapiroFrancia
Magnesium (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	56	31.93	5.524	ln(x)	ShapiroFrancia
Manganese (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	56	0.3313	0.3508	x^(1/3)	ShapiroFrancia
Molybdenum (mg/L)	**MW-08,MW-10,MW-22...**	**Yes**	**0.00341,0.00568,0.00385,0.00423,0...**	**NP**	**NaN**	**85**	**0.002665**	**0.00134**	**ln(x)**	**ShapiroFrancia**
Nickel (mg/L)	MW-08,MW-10,MW-22...	n/a	n/a	NP	NaN	56	0.005023	0.000171	unknown	ShapiroFrancia
Selenium (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	83	0.005	0	normal	ShapiroFrancia
Strontium (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	56	0.1445	0.06342	sqrt(x)	ShapiroFrancia
Sulfate (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	85	88.51	67.27	ln(x)	ShapiroFrancia
Vanadium (mg/L)	MW-08,MW-10,MW-22...	n/a	n/a	NP	NaN	56	0.005008	0.00006281	unknown	ShapiroFrancia
Zinc (mg/L)	MW-08,MW-10,MW-22...	No	n/a	NP	NaN	56	0.02	0	normal	ShapiroFrancia

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 56

Outliers are drawn as solid.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

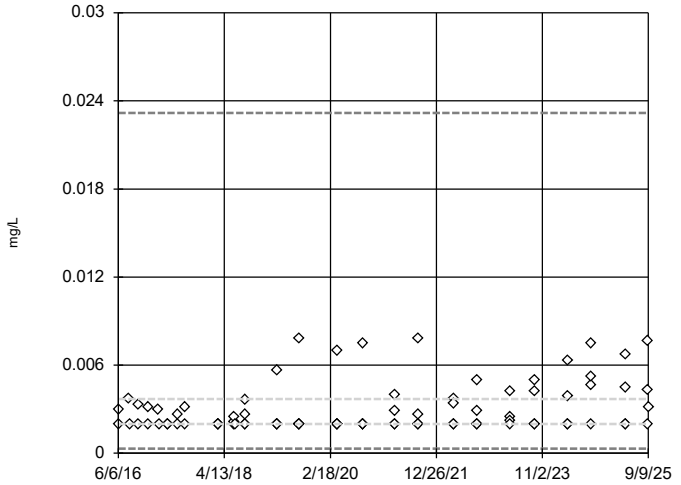
High cutoff = 0.1365, low cutoff = 0.02355, based on IQR multiplier of 3.

Constituent: Aluminum Analysis Run 12/15/2025 2:40 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 83

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

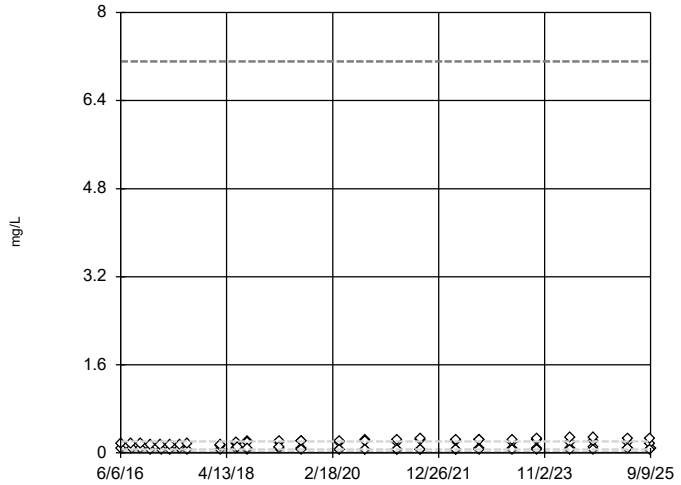
High cutoff = 0.02317, low cutoff = 0.0003184, based on IQR multiplier of 3.

Constituent: Arsenic Analysis Run 12/15/2025 2:40 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 83

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

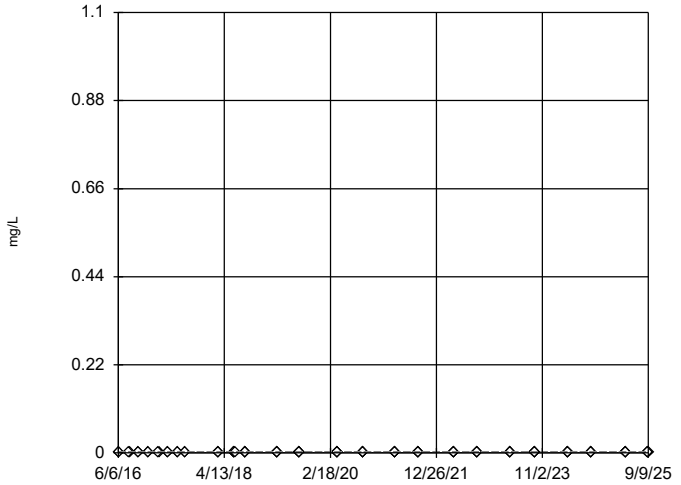
High cutoff = 7.111, low cutoff = 0.001896, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 12/15/2025 2:40 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 83

No outliers found.
Tukey's method selected by user.

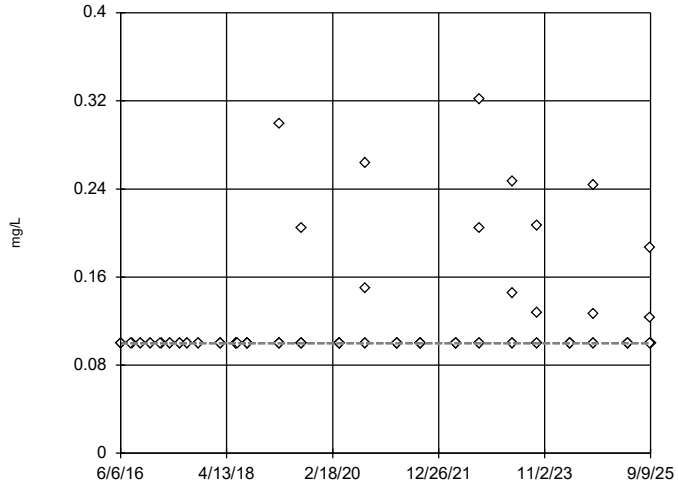
All values are the same.

Constituent: Beryllium Analysis Run 12/15/2025 2:40 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 85

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

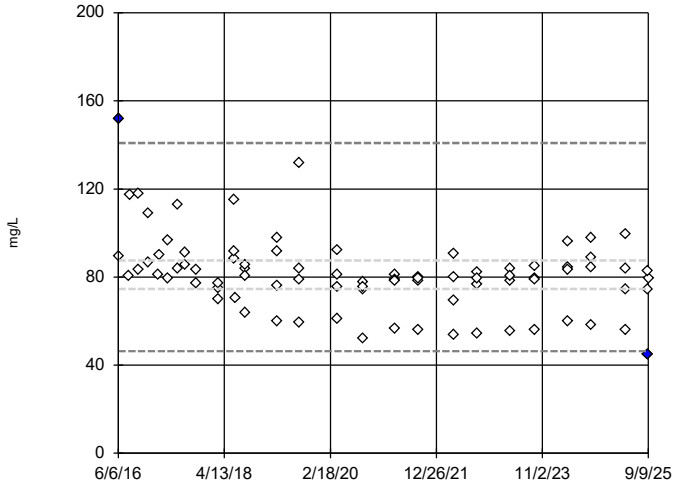
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Boron Analysis Run 12/15/2025 2:40 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 85

Outliers are drawn as solid.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

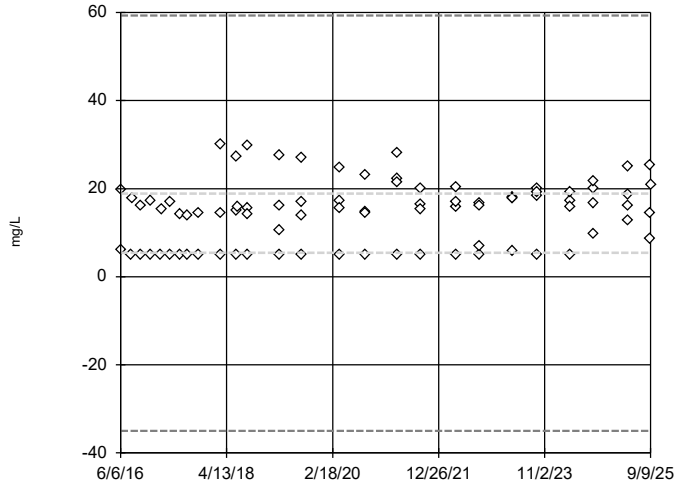
High cutoff = 140.9, low cutoff = 46.36, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 12/15/2025 2:40 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 85

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

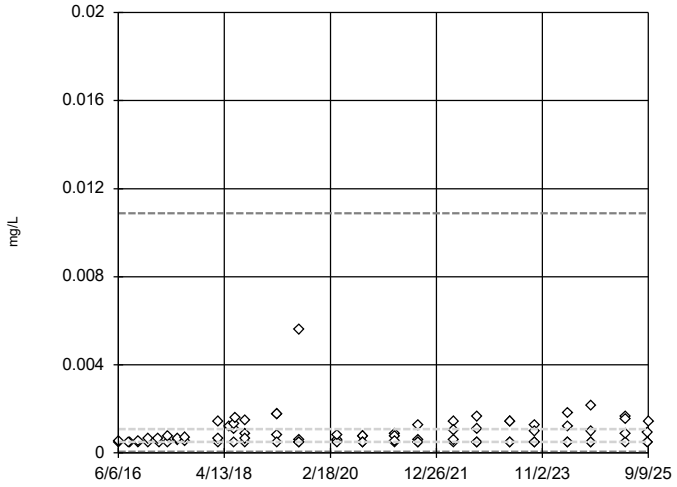
High cutoff = 59.31, low cutoff = -34.98, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 12/15/2025 2:40 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 84

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

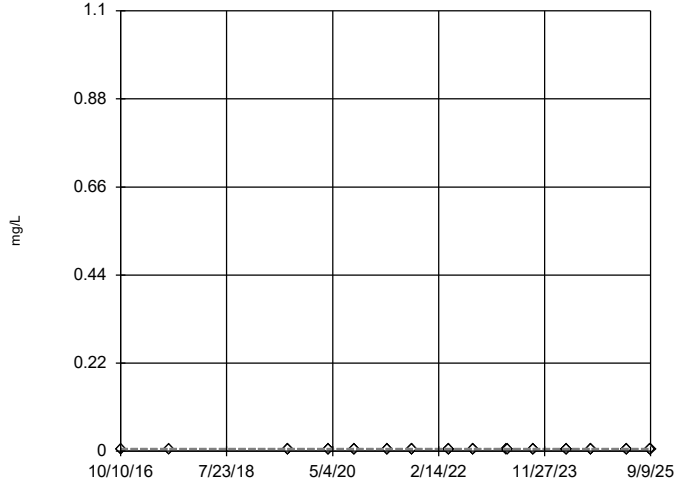
High cutoff = 0.01088, low cutoff = 0.00004962, based on IQR multiplier of 3.

Constituent: Cobalt Analysis Run 12/15/2025 2:40 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 56

No outliers found. Tukey's method selected by user.

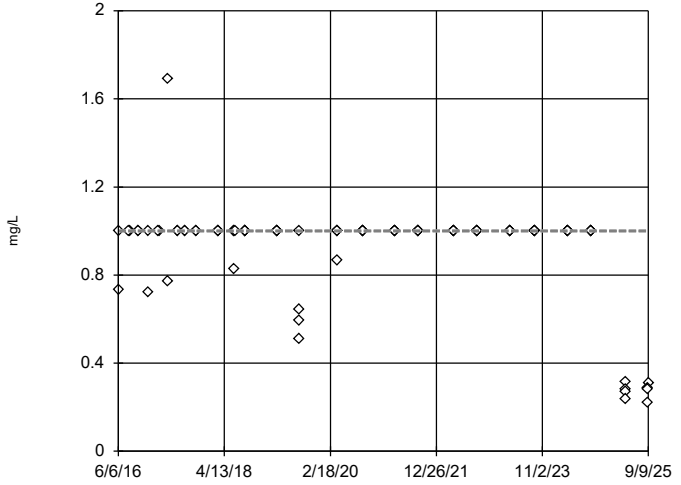
All values are the same.

Constituent: Copper Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 85

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

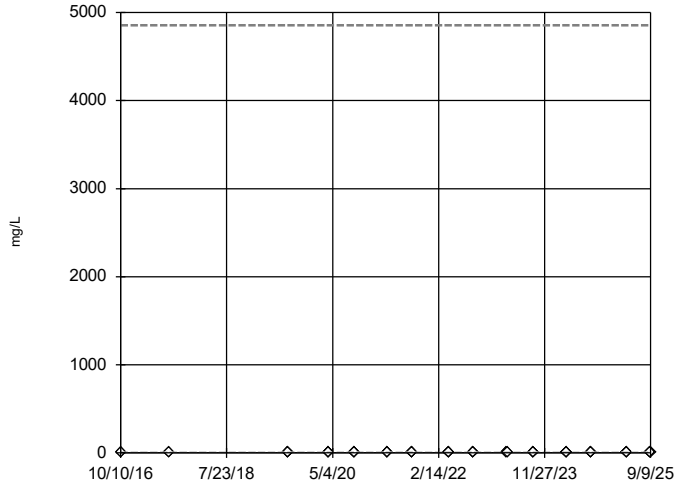
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Fluoride Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 56

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

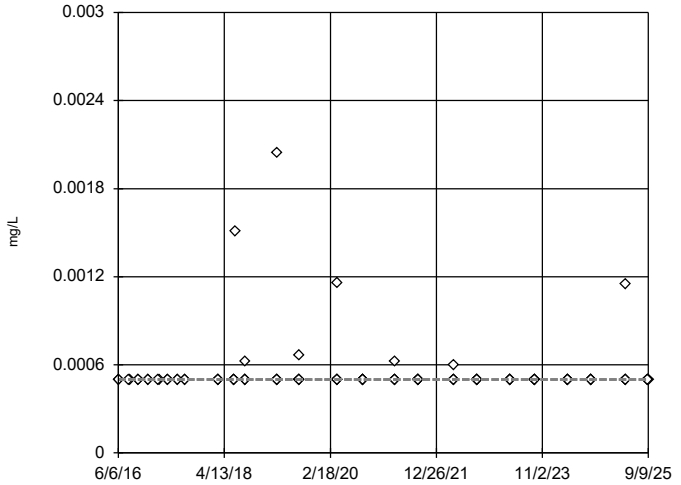
High cutoff = 4854, low cutoff = 0.00003058, based on IQR multiplier of 3.

Constituent: Iron Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 83

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

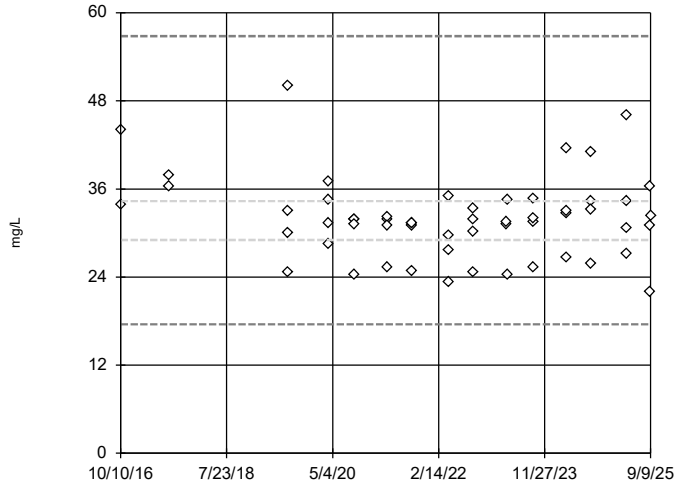
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Lead Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 56

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

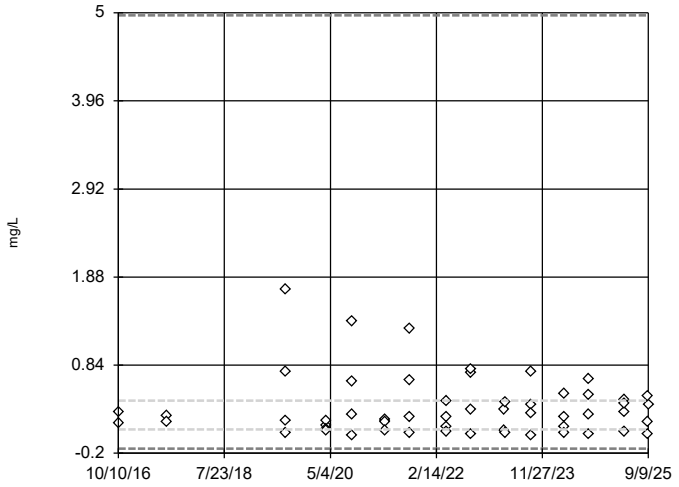
High cutoff = 56.82, low cutoff = 17.56, based on IQR multiplier of 3.

Constituent: Magnesium Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 56

No outliers found.
Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

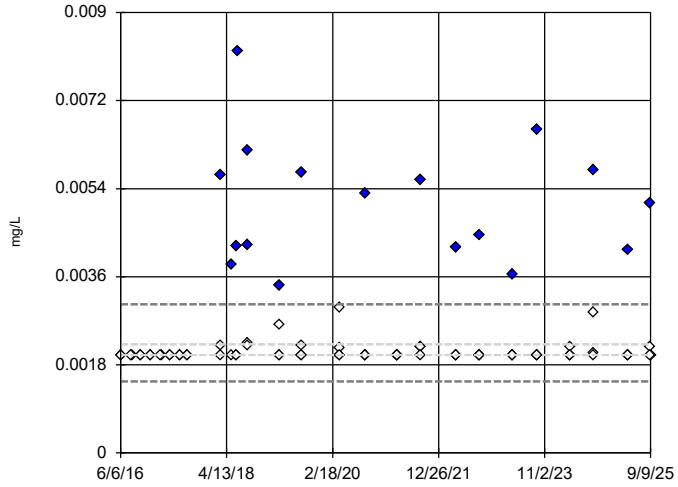
High cutoff = 4.97, low cutoff = -0.1445, based on IQR multiplier of 3.

Constituent: Manganese Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 85

Outliers are drawn as solid.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

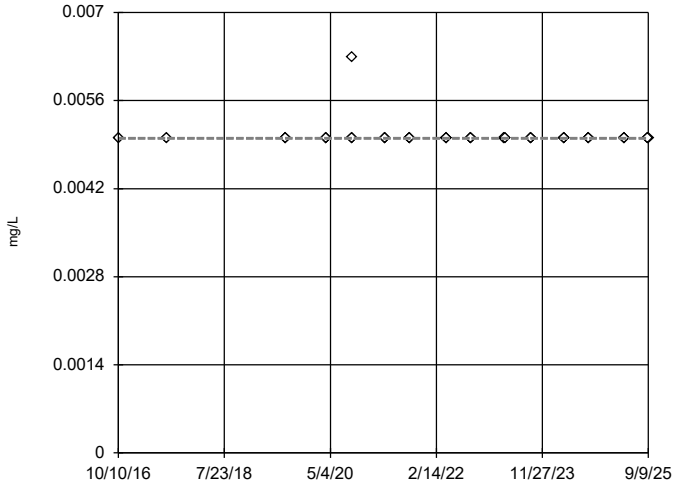
High cutoff = 0.003036, low cutoff = 0.001463, based on IQR multiplier of 3.

Constituent: Molybdenum Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 56

No outliers found.
Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

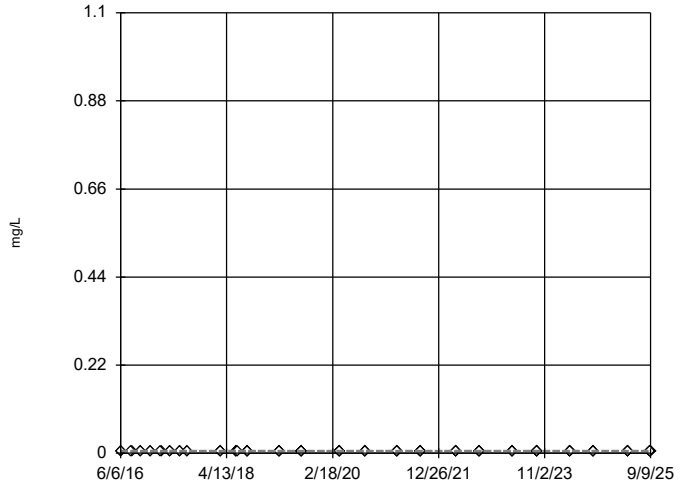
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Nickel Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 83

No outliers found. Tukey's method selected by user.

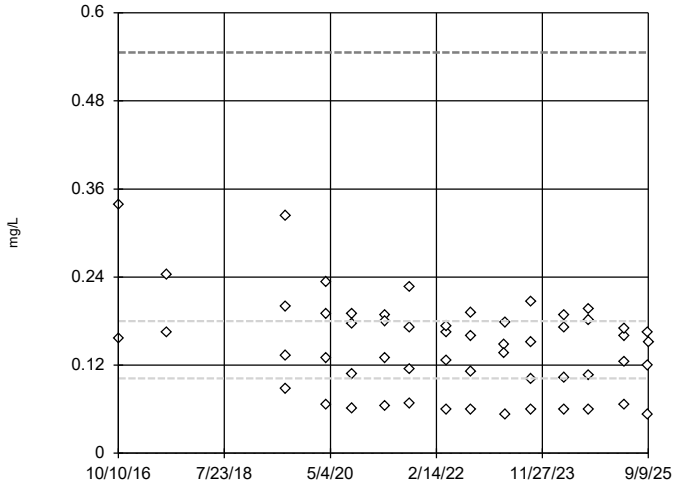
All values are the same.

Constituent: Selenium Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 56

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

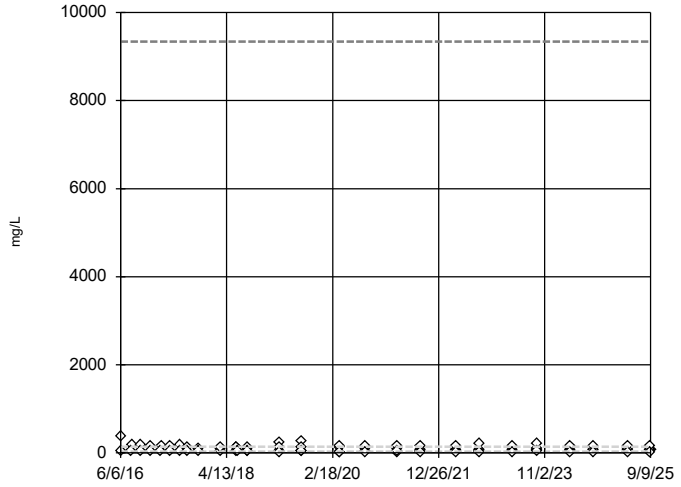
High cutoff = 0.546, low cutoff = 0.00002204, based on IQR multiplier of 3.

Constituent: Strontium Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 85

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

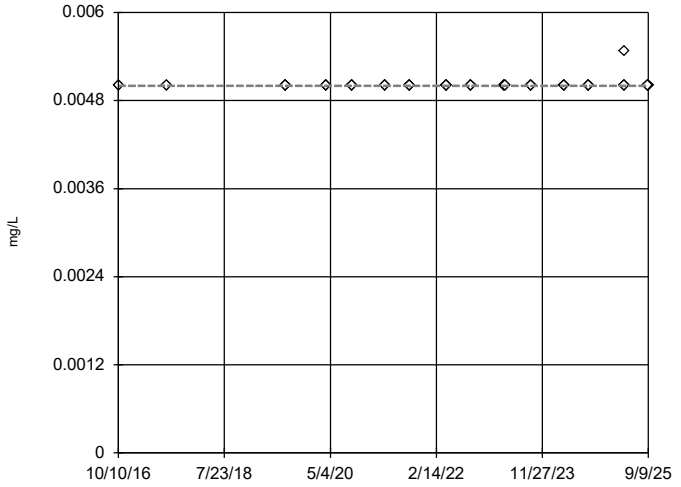
High cutoff = 9338, low cutoff = 0.5261, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 56

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

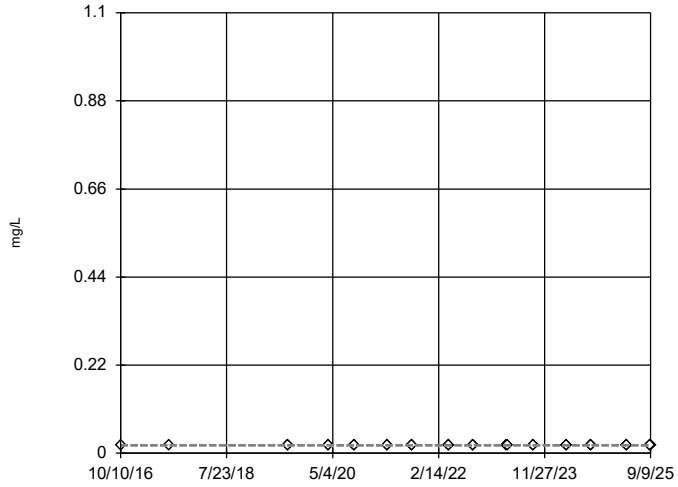
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Vanadium Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening, Pooled Background

MW-08,MW-10,MW-22,MW-23



n = 56

No outliers found.
Tukey's method select-
ed by user.

All values are the same.

Constituent: Zinc Analysis Run 12/15/2025 2:41 PM View: State Wells Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Outlier Summary - Surface Water Locations

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 4:01 PM

	SW-22 Copper (mg/L)
9/1/2021	0.0358 (o)

Tukey's Outlier Test - Upgradient Surface Water Locations - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 2:50 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Arsenic (mg/L)	**SW-22 (bg)**	**Yes**	**0.00342,0.00367**	**NP**	**NaN**	**14**	**0.002233**	**0.0005599**	**ln(x)**	**ShapiroWilk**
Boron (mg/L)	**SW-22 (bg)**	**Yes**	**5.95,6.67**	**NP**	**NaN**	**15**	**1.012**	**2.175**	**ln(x)**	**ShapiroWilk**
Calcium (mg/L)	**SW-22 (bg)**	**Yes**	**221,204**	**NP**	**NaN**	**15**	**74.11**	**57.06**	**ln(x)**	**ShapiroWilk**
Lead (mg/L)	**SW-22 (bg)**	**Yes**	**0.00258**	**NP**	**NaN**	**14**	**0.0006963**	**0.0005517**	**ln(x)**	**ShapiroWilk**
Magnesium (mg/L)	**SW-22 (bg)**	**Yes**	**73.3**	**NP**	**NaN**	**14**	**26.04**	**14.12**	**ln(x)**	**ShapiroWilk**
Sulfate (mg/L)	**SW-22 (bg)**	**Yes**	**73,554,213**	**NP**	**NaN**	**15**	**68.77**	**143.9**	**ln(x)**	**ShapiroWilk**
Vanadium (mg/L)	**SW-22 (bg)**	**Yes**	**0.00549,0.00682**	**NP**	**NaN**	**14**	**0.005176**	**0.0004916**	**ln(x)**	**ShapiroWilk**

Tukey's Outlier Test - Upgradient Surface Water Locations - All Results

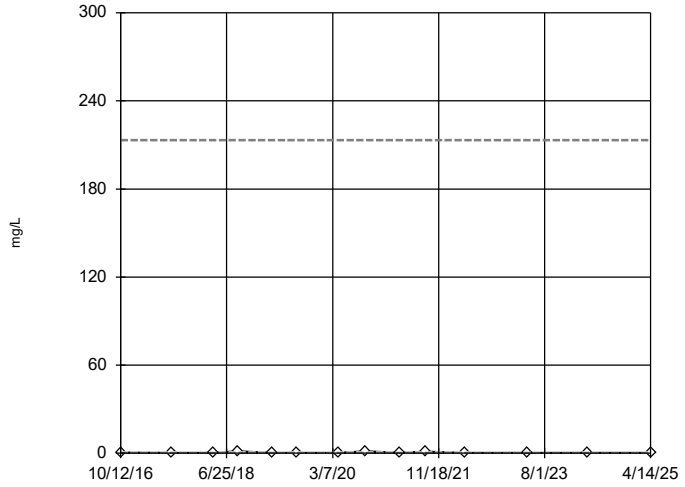
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 2:50 PM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Aluminum (mg/L)	SW-22 (bg)	No	n/a	NP	NaN	14	0.3329	0.4331	ln(x)	ShapiroWilk
Arsenic (mg/L)	**SW-22 (bg)**	**Yes**	**0.00342,0.00367**	**NP**	**NaN**	**14**	**0.002233**	**0.0005599**	**ln(x)**	**ShapiroWilk**
Barium (mg/L)	SW-22 (bg)	No	n/a	NP	NaN	14	0.1112	0.03622	ln(x)	ShapiroWilk
Beryllium (mg/L)	SW-22 (bg)	No	n/a	NP	NaN	14	0.001	0	normal	ShapiroWilk
Boron (mg/L)	**SW-22 (bg)**	**Yes**	**5.95,6.67**	**NP**	**NaN**	**15**	**1.012**	**2.175**	**ln(x)**	**ShapiroWilk**
Calcium (mg/L)	**SW-22 (bg)**	**Yes**	**221,204**	**NP**	**NaN**	**15**	**74.11**	**57.06**	**ln(x)**	**ShapiroWilk**
Chloride (mg/L)	SW-22 (bg)	No	n/a	NP	NaN	15	15.73	2.984	ln(x)	ShapiroWilk
Cobalt (mg/L)	SW-22 (bg)	No	n/a	NP	NaN	14	0.0006254	0.0002277	ln(x)	ShapiroWilk
Copper (mg/L)	SW-22 (bg)	n/a	n/a	NP	NaN	14	0.0072	0.008232	unknown	ShapiroWilk
Fluoride (mg/L)	SW-22 (bg)	n/a	n/a	NP	NaN	15	0.9247	0.2081	unknown	ShapiroWilk
Iron (mg/L)	SW-22 (bg)	No	n/a	NP	NaN	14	0.4789	0.4234	ln(x)	ShapiroWilk
Lead (mg/L)	**SW-22 (bg)**	**Yes**	**0.00258**	**NP**	**NaN**	**14**	**0.0006963**	**0.0005517**	**ln(x)**	**ShapiroWilk**
Magnesium (mg/L)	**SW-22 (bg)**	**Yes**	**73.3**	**NP**	**NaN**	**14**	**26.04**	**14.12**	**ln(x)**	**ShapiroWilk**
Manganese (mg/L)	SW-22 (bg)	No	n/a	NP	NaN	14	0.224	0.2052	ln(x)	ShapiroWilk
Molybdenum (mg/L)	SW-22 (bg)	n/a	n/a	NP	NaN	14	0.002312	0.001168	unknown	ShapiroWilk
Nickel (mg/L)	SW-22 (bg)	No	n/a	NP	NaN	14	0.005	0	normal	ShapiroWilk
Selenium (mg/L)	SW-22 (bg)	No	n/a	NP	NaN	14	0.005	0	normal	ShapiroWilk
Strontium (mg/L)	SW-22 (bg)	No	n/a	NP	NaN	14	0.1314	0.04738	ln(x)	ShapiroWilk
Sulfate (mg/L)	**SW-22 (bg)**	**Yes**	**73,554,213**	**NP**	**NaN**	**15**	**68.77**	**143.9**	**ln(x)**	**ShapiroWilk**
Vanadium (mg/L)	**SW-22 (bg)**	**Yes**	**0.00549,0.00682**	**NP**	**NaN**	**14**	**0.005176**	**0.0004916**	**ln(x)**	**ShapiroWilk**
Zinc (mg/L)	SW-22 (bg)	n/a	n/a	NP	NaN	14	0.0208	0.002993	unknown	ShapiroWilk

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

No outliers found.
Tukey's method select-ed by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

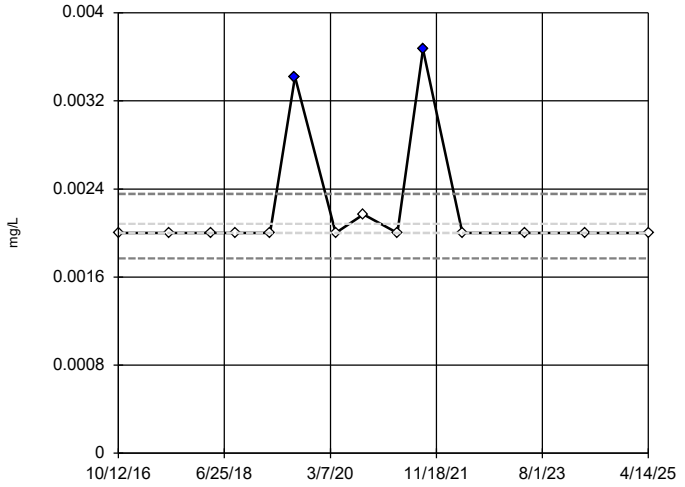
High cutoff = 213.3, low cutoff = 0.0001292, based on IQR multiplier of 3.

Constituent: Aluminum Analysis Run 12/15/2025 2:48 PM View: State Surface Water Upgradient Outlier T
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

Outliers are drawn as solid.
Tukey's method select-ed by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

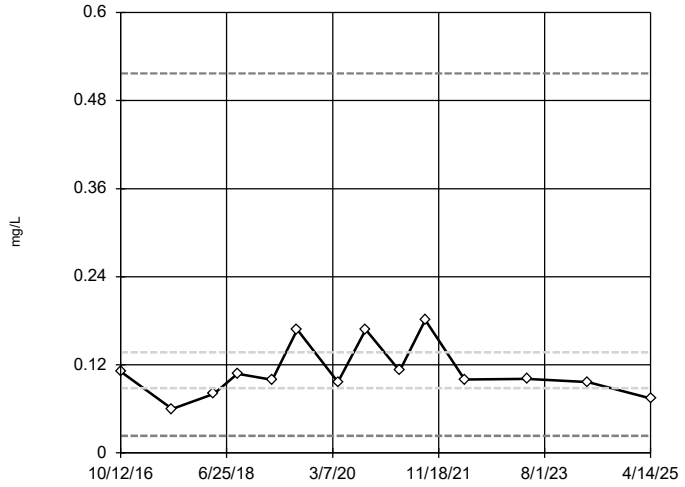
High cutoff = 0.002354, low cutoff = 0.00177, based on IQR multiplier of 3.

Constituent: Arsenic Analysis Run 12/15/2025 2:48 PM View: State Surface Water Upgradient Outlier Test
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

No outliers found.
Tukey's method select-ed by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

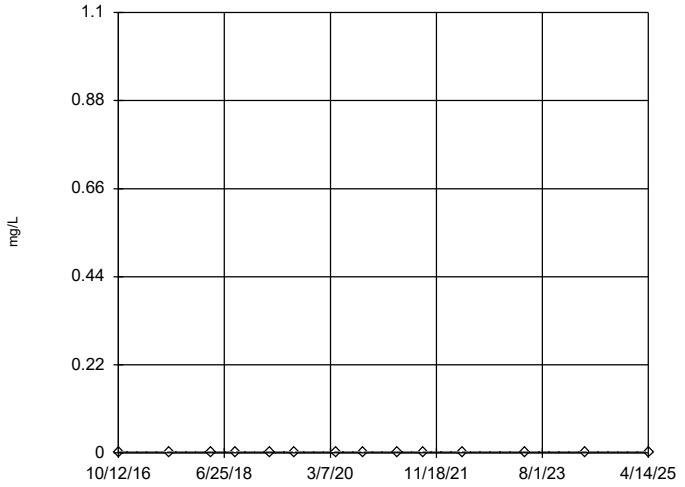
High cutoff = 0.5169, low cutoff = 0.02339, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 12/15/2025 2:48 PM View: State Surface Water Upgradient Outlier Testi
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

No outliers found.
Tukey's method select-ed by user.

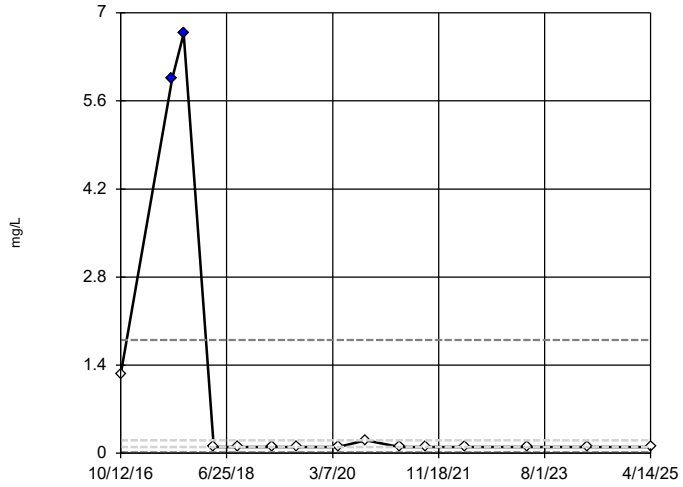
All values are the same.

Constituent: Beryllium Analysis Run 12/15/2025 2:48 PM View: State Surface Water Upgradient Outlier Te
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 15

Outliers are drawn as solid.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

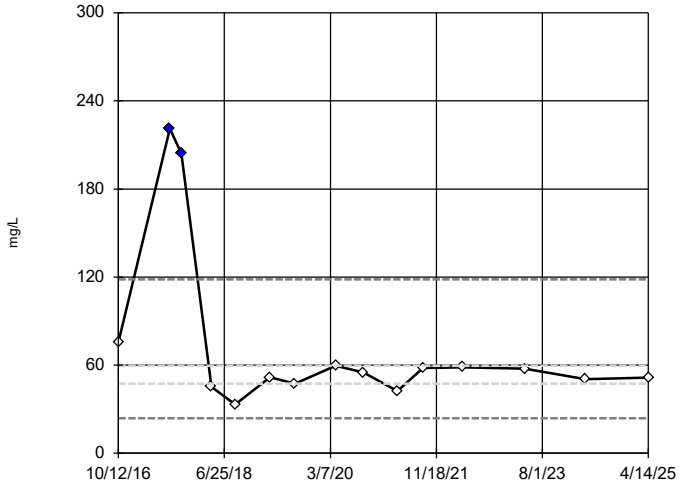
High cutoff = 1.801, low cutoff = 0.01144, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 12/15/2025 2:48 PM View: State Surface Water Upgradient Outlier Testi
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 15

Outliers are drawn as solid.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

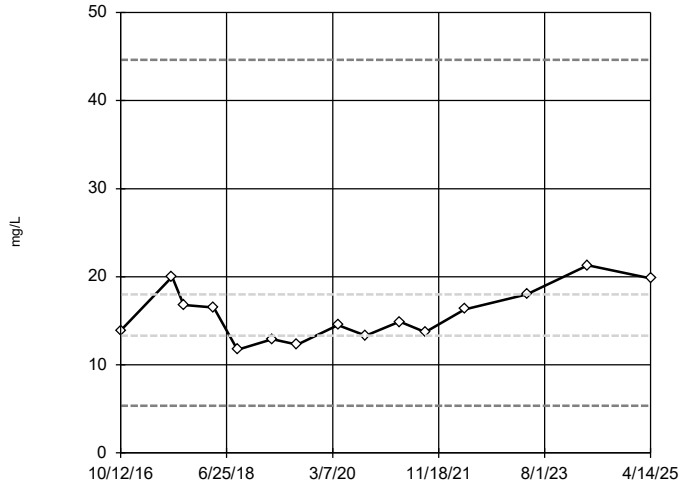
High cutoff = 118.5, low cutoff = 23.84, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 12/15/2025 2:48 PM View: State Surface Water Upgradient Outlier Tes
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 15

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

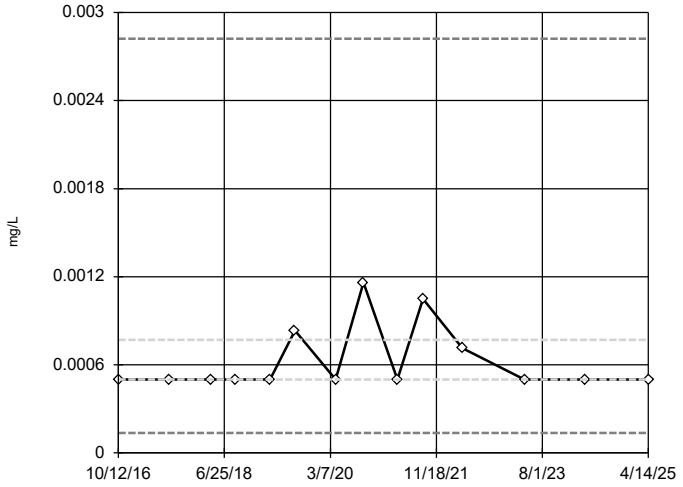
High cutoff = 44.62, low cutoff = 5.365, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 12/15/2025 2:48 PM View: State Surface Water Upgradient Outlier Te
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

No outliers found.
Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

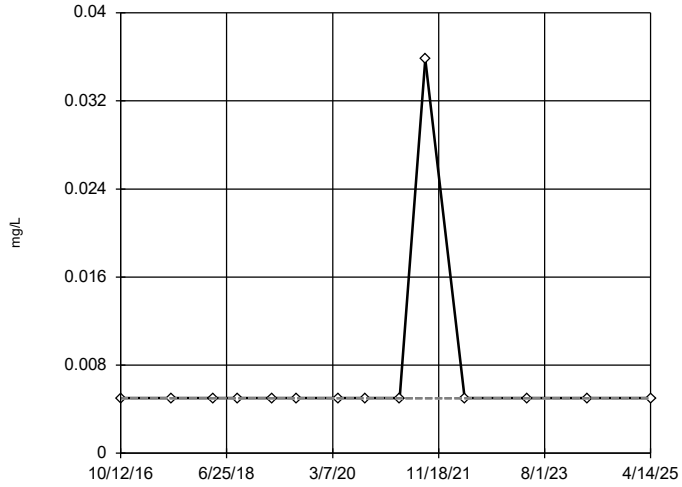
High cutoff = 0.002822, low cutoff = 0.0001365, based on IQR multiplier of 3.

Constituent: Cobalt Analysis Run 12/15/2025 2:48 PM View: State Surface Water Upgradient Outlier Testi
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

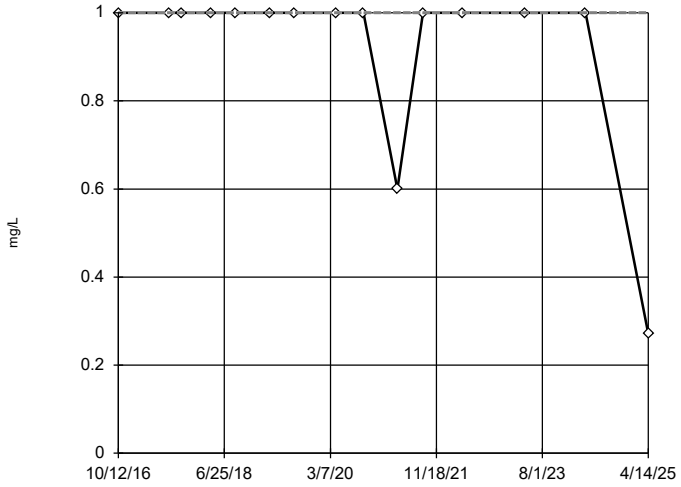
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Copper Analysis Run 12/15/2025 2:48 PM View: State Surface Water Upgradient Outlier Test
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 15

No outliers found. Tukey's method selected by user.

Data were square transformed to achieve best W statistic (graph shown in original units).

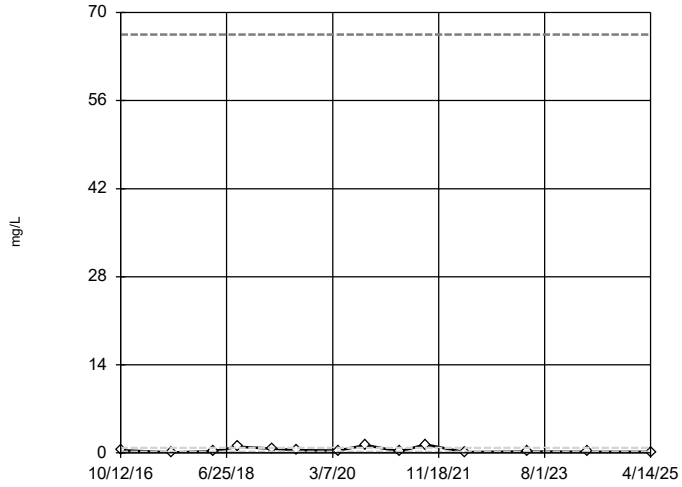
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Fluoride Analysis Run 12/15/2025 2:48 PM View: State Surface Water Upgradient Outlier Tes
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

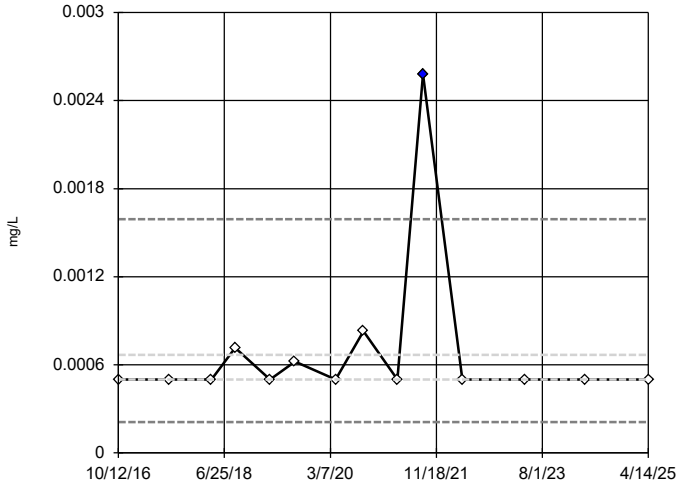
High cutoff = 66.5, low cutoff = 0.002312, based on IQR multiplier of 3.

Constituent: Iron Analysis Run 12/15/2025 2:48 PM View: State Surface Water Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

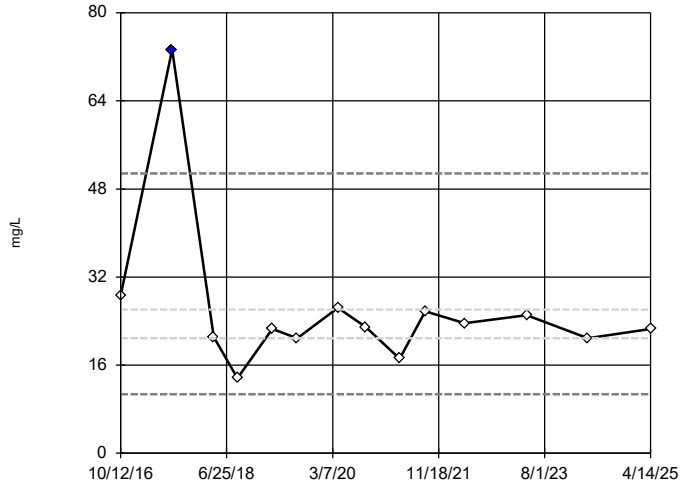
High cutoff = 0.001592, low cutoff = 0.0002098, based on IQR multiplier of 3.

Constituent: Lead Analysis Run 12/15/2025 2:48 PM View: State Surface Water Upgradient Outlier Testin
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

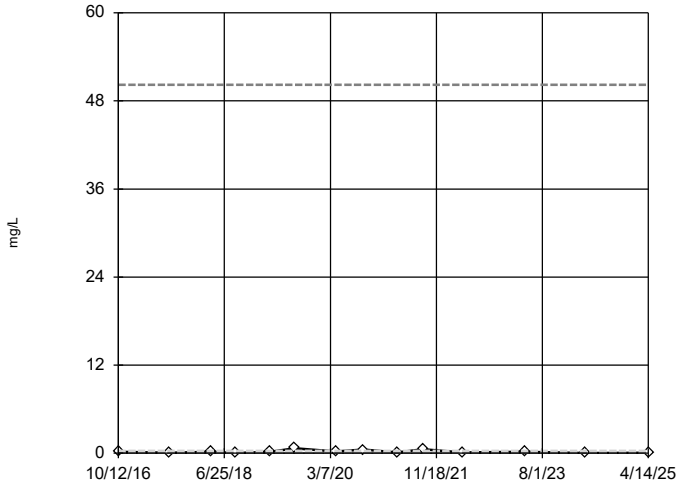
High cutoff = 50.82, low cutoff = 10.73, based on IQR multiplier of 3.

Constituent: Magnesium Analysis Run 12/15/2025 2:49 PM View: State Surface Water Upgradient Outlier
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

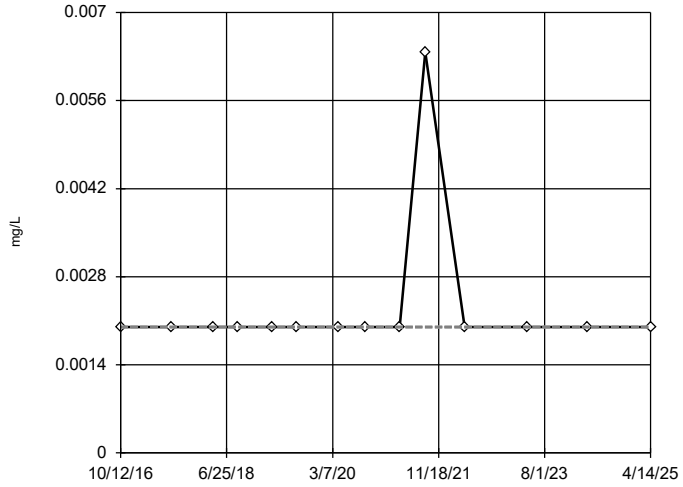
High cutoff = 50.18, low cutoff = 0.0003973, based on IQR multiplier of 3.

Constituent: Manganese Analysis Run 12/15/2025 2:49 PM View: State Surface Water Upgradient Outlier
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

No outliers found. Tukey's method selected by user.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

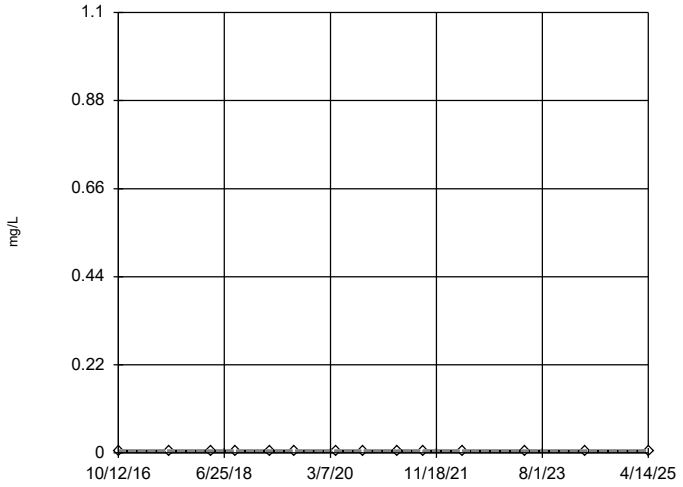
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Molybdenum Analysis Run 12/15/2025 2:49 PM View: State Surface Water Upgradient Outlie
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

No outliers found. Tukey's method selected by user.

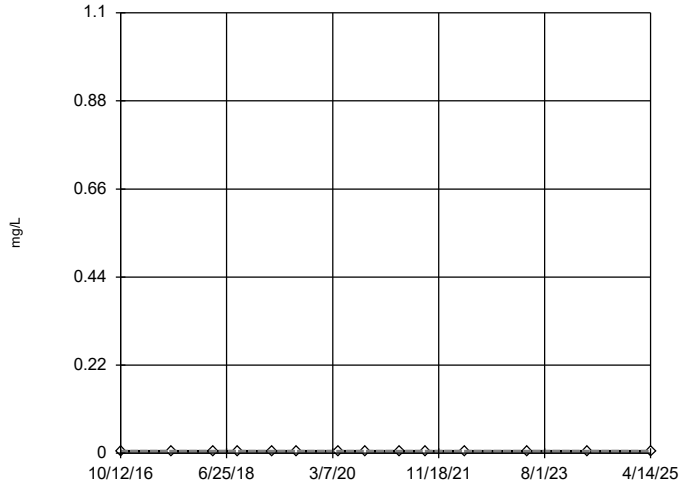
All values are the same.

Constituent: Nickel Analysis Run 12/15/2025 2:49 PM View: State Surface Water Upgradient Outlier Testi
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

No outliers found.
Tukey's method select-ed by user.

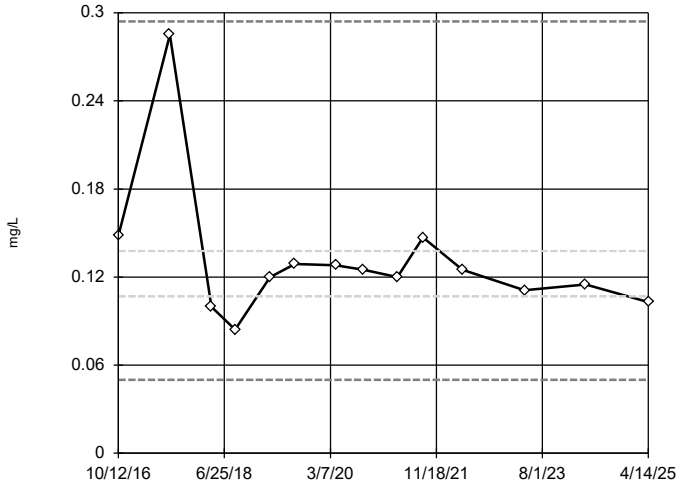
All values are the same.

Constituent: Selenium Analysis Run 12/15/2025 2:49 PM View: State Surface Water Upgradient Outlier Te
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Tukey's Outlier Screening

SW-22 (bg)



n = 14

No outliers found.
Tukey's method select-ed by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

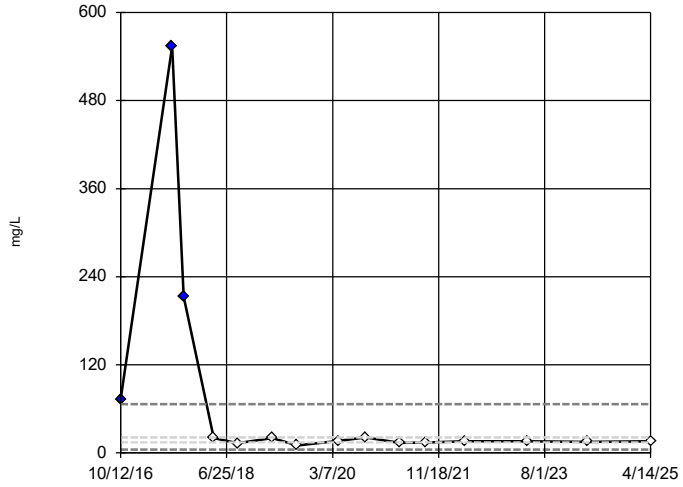
High cutoff = 0.2942, low cutoff = 0.05006, based on IQR multiplier of 3.

Constituent: Strontium Analysis Run 12/15/2025 2:49 PM View: State Surface Water Upgradient Outlier T
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 15

Outliers are drawn as solid.
Tukey's method select-ed by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

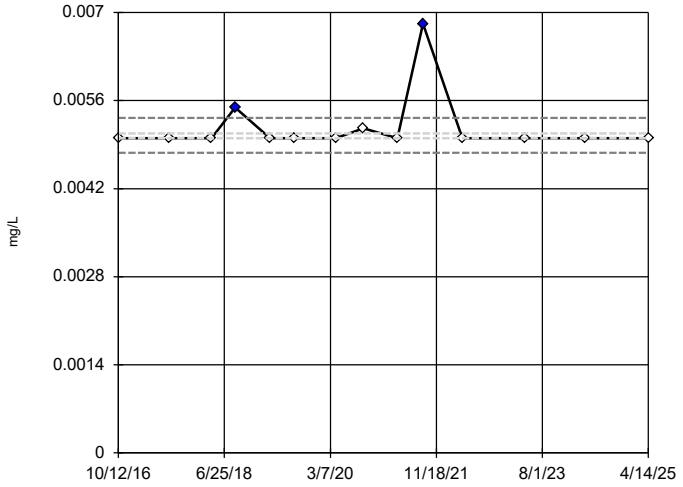
High cutoff = 66.51, low cutoff = 4.515, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 12/15/2025 2:49 PM View: State Surface Water Upgradient Outlier Testi
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

Outliers are drawn as solid.
Tukey's method select-ed by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

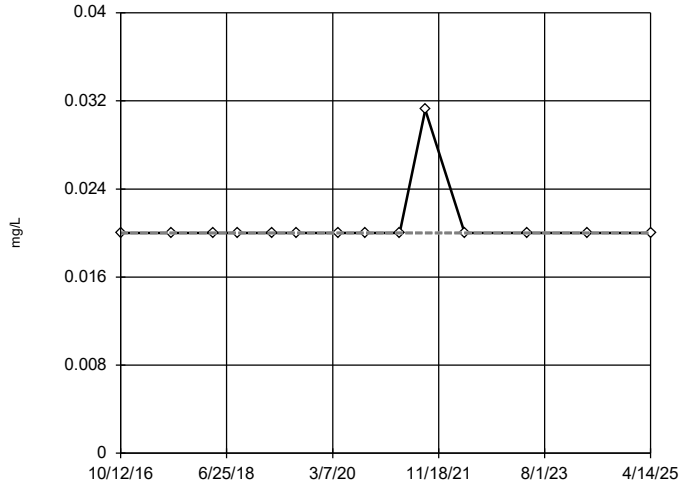
High cutoff = 0.005325, low cutoff = 0.004769, based on IQR multiplier of 3.

Constituent: Vanadium Analysis Run 12/15/2025 2:49 PM View: State Surface Water Upgradient Outlier T
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Tukey's Outlier Screening

SW-22 (bg)



n = 14

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Zinc Analysis Run 12/15/2025 2:49 PM View: State Surface Water Upgradient Outlier Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

FIGURE D.

Trend Tests - Upgradient Wells - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 2:58 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Arsenic (mg/L)	**MW-22 (bg)**	**0.0006658**	**101**	**63**	**Yes**	**17**	**29.41**	**n/a**	**n/a**	**0.01**	**NP**
Barium (mg/L)	**MW-10 (bg)**	**0.006419**	**120**	**111**	**Yes**	**25**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Barium (mg/L)	**MW-22 (bg)**	**0.01142**	**106**	**63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-22 (bg)**	**-2.056**	**-102**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-23 (bg)**	**1.516**	**85**	**58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Cobalt (mg/L)	**MW-08 (bg)**	**0.0001305**	**176**	**111**	**Yes**	**25**	**36**	**n/a**	**n/a**	**0.01**	**NP**
Cobalt (mg/L)	**MW-10 (bg)**	**0.00007216**	**158**	**111**	**Yes**	**25**	**4**	**n/a**	**n/a**	**0.01**	**NP**
Iron (mg/L)	**MW-08 (bg)**	**0.1718**	**79**	**53**	**Yes**	**15**	**33.33**	**n/a**	**n/a**	**0.01**	**NP**
Strontium (mg/L)	**MW-08 (bg)**	**-0.01488**	**-69**	**-53**	**Yes**	**15**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-08 (bg)**	**-12.86**	**-221**	**-118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-22 (bg)**	**4.734**	**77**	**63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-23 (bg)**	**-0.8498**	**-65**	**-58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Trend Tests - Upgradient Wells - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 2:58 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Aluminum (mg/L)	MW-08 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Aluminum (mg/L)	MW-10 (bg)	0	-14	-53	No	15	93.33	n/a	n/a	0.01	NP
Aluminum (mg/L)	MW-22 (bg)	0	10	43	No	13	92.31	n/a	n/a	0.01	NP
Aluminum (mg/L)	MW-23 (bg)	0.002312	0	43	No	13	7.692	n/a	n/a	0.01	NP
Aluminum (mg/L)	SW-22 (bg)	-0.005289	-12	-48	No	14	21.43	n/a	n/a	0.01	NP
Arsenic (mg/L)	MW-08 (bg)	0	100	111	No	25	80	n/a	n/a	0.01	NP
Arsenic (mg/L)	MW-10 (bg)	0.0001361	45	111	No	25	16	n/a	n/a	0.01	NP
Arsenic (mg/L)	**MW-22 (bg)**	**0.0006658**	**101**	**63**	**Yes**	**17**	**29.41**	**n/a**	**n/a**	**0.01**	**NP**
Arsenic (mg/L)	MW-23 (bg)	0	0	58	No	16	100	n/a	n/a	0.01	NP
Arsenic (mg/L)	SW-22 (bg)	0	4	48	No	14	78.57	n/a	n/a	0.01	NP
Barium (mg/L)	MW-08 (bg)	0.001261	67	111	No	25	0	n/a	n/a	0.01	NP
Barium (mg/L)	**MW-10 (bg)**	**0.006419**	**120**	**111**	**Yes**	**25**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Barium (mg/L)	**MW-22 (bg)**	**0.01142**	**106**	**63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Barium (mg/L)	MW-23 (bg)	-0.003443	-50	-58	No	16	0	n/a	n/a	0.01	NP
Barium (mg/L)	SW-22 (bg)	0	0	48	No	14	0	n/a	n/a	0.01	NP
Beryllium (mg/L)	MW-08 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Beryllium (mg/L)	MW-10 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Beryllium (mg/L)	MW-22 (bg)	0	0	63	No	17	100	n/a	n/a	0.01	NP
Beryllium (mg/L)	MW-23 (bg)	0	0	58	No	16	100	n/a	n/a	0.01	NP
Beryllium (mg/L)	SW-22 (bg)	0	0	48	No	14	100	n/a	n/a	0.01	NP
Boron (mg/L)	MW-08 (bg)	0	1	118	No	26	96.15	n/a	n/a	0.01	NP
Boron (mg/L)	MW-10 (bg)	0	0	118	No	26	100	n/a	n/a	0.01	NP
Boron (mg/L)	MW-22 (bg)	0	17	63	No	17	58.82	n/a	n/a	0.01	NP
Boron (mg/L)	MW-23 (bg)	0	23	58	No	16	62.5	n/a	n/a	0.01	NP
Boron (mg/L)	SW-22 (bg)	0	-34	-53	No	15	73.33	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-08 (bg)	-2.922	-102	-111	No	25	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-10 (bg)	0.5172	40	118	No	26	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-22 (bg)	-0.4821	-22	-63	No	17	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-23 (bg)	-1.457	-52	-58	No	16	0	n/a	n/a	0.01	NP
Calcium (mg/L)	SW-22 (bg)	-1.292	-19	-53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-08 (bg)	0.3471	107	118	No	26	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-10 (bg)	0	63	118	No	26	80.77	n/a	n/a	0.01	NP
Chloride (mg/L)	**MW-22 (bg)**	**-2.056**	**-102**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-23 (bg)**	**1.516**	**85**	**58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	SW-22 (bg)	0.6288	27	53	No	15	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	**MW-08 (bg)**	**0.0001305**	**176**	**111**	**Yes**	**25**	**36**	**n/a**	**n/a**	**0.01**	**NP**
Cobalt (mg/L)	**MW-10 (bg)**	**0.00007216**	**158**	**111**	**Yes**	**25**	**4**	**n/a**	**n/a**	**0.01**	**NP**
Cobalt (mg/L)	MW-22 (bg)	0	-54	-68	No	18	77.78	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-23 (bg)	-0.000005289	-40	-58	No	16	56.25	n/a	n/a	0.01	NP
Cobalt (mg/L)	SW-22 (bg)	0	8	48	No	14	71.43	n/a	n/a	0.01	NP
Copper (mg/L)	MW-08 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Copper (mg/L)	MW-10 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Copper (mg/L)	MW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Copper (mg/L)	MW-23 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Copper (mg/L)	SW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Fluoride (mg/L)	MW-08 (bg)	0	-31	-111	No	25	76	n/a	n/a	0.01	NP
Fluoride (mg/L)	MW-10 (bg)	0	-17	-118	No	26	80.77	n/a	n/a	0.01	NP
Fluoride (mg/L)	MW-22 (bg)	0	-23	-63	No	17	82.35	n/a	n/a	0.01	NP
Fluoride (mg/L)	MW-23 (bg)	0	-27	-58	No	16	87.5	n/a	n/a	0.01	NP
Fluoride (mg/L)	SW-22 (bg)	0	-19	-53	No	15	86.67	n/a	n/a	0.01	NP
Iron (mg/L)	**MW-08 (bg)**	**0.1718**	**79**	**53**	**Yes**	**15**	**33.33**	**n/a**	**n/a**	**0.01**	**NP**
Iron (mg/L)	MW-10 (bg)	-0.09218	-15	-53	No	15	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-22 (bg)	0	31	43	No	13	76.92	n/a	n/a	0.01	NP
Iron (mg/L)	MW-23 (bg)	0.0008538	1	43	No	13	15.38	n/a	n/a	0.01	NP
Iron (mg/L)	SW-22 (bg)	-0.02684	-19	-48	No	14	7.143	n/a	n/a	0.01	NP
Lead (mg/L)	MW-08 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Lead (mg/L)	MW-10 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Lead (mg/L)	MW-22 (bg)	0	0	63	No	17	100	n/a	n/a	0.01	NP
Lead (mg/L)	MW-23 (bg)	-0.00002816	-54	-58	No	16	50	n/a	n/a	0.01	NP
Lead (mg/L)	SW-22 (bg)	0	0	48	No	14	71.43	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-08 (bg)	-0.5535	-20	-53	No	15	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-10 (bg)	1.038	53	53	No	15	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-22 (bg)	-0.04727	-4	-43	No	13	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-23 (bg)	0.09952	6	43	No	13	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	SW-22 (bg)	-0.3358	-11	-48	No	14	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-08 (bg)	0.01268	9	53	No	15	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-10 (bg)	0.01382	51	53	No	15	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-22 (bg)	-0.02329	-4	-38	No	12	0	n/a	n/a	0.01	NP

Trend Tests - Upgradient Wells - All Results

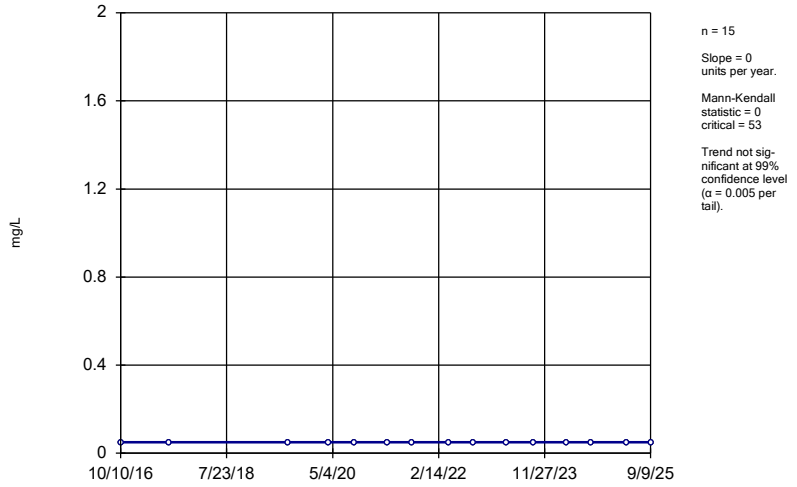
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 2:58 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Manganese (mg/L)	MW-23 (bg)	-0.004444	-22	-43	No	13	0	n/a	n/a	0.01	NP
Manganese (mg/L)	SW-22 (bg)	-0.004286	-9	-48	No	14	0	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-08 (bg)	0	14	118	No	26	84.62	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-10 (bg)	0	41	111	No	25	72	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-22 (bg)	0.00004331	7	68	No	18	5.556	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-23 (bg)	0	-29	-58	No	16	87.5	n/a	n/a	0.01	NP
Molybdenum (mg/L)	SW-22 (bg)	0	5	48	No	14	92.86	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-08 (bg)	0	-6	-53	No	15	93.33	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-10 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-23 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Nickel (mg/L)	SW-22 (bg)	0	0	48	No	14	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-08 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-10 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-22 (bg)	0	0	63	No	17	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-23 (bg)	0	0	58	No	16	100	n/a	n/a	0.01	NP
Selenium (mg/L)	SW-22 (bg)	0	0	48	No	14	100	n/a	n/a	0.01	NP
Strontium (mg/L)	**MW-08 (bg)**	**-0.01488**	**-69**	**-53**	**Yes**	**15**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Strontium (mg/L)	MW-10 (bg)	0	0	53	No	15	0	n/a	n/a	0.01	NP
Strontium (mg/L)	MW-22 (bg)	-0.002315	-22	-43	No	13	0	n/a	n/a	0.01	NP
Strontium (mg/L)	MW-23 (bg)	-0.001906	-34	-43	No	13	0	n/a	n/a	0.01	NP
Strontium (mg/L)	SW-22 (bg)	-0.003632	-25	-48	No	14	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**MW-08 (bg)**	**-12.86**	**-221**	**-118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	MW-10 (bg)	1.617	71	118	No	26	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**MW-22 (bg)**	**4.734**	**77**	**63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-23 (bg)**	**-0.8498**	**-65**	**-58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	SW-22 (bg)	-1.657	-36	-53	No	15	0	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-08 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-10 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-23 (bg)	0	10	43	No	13	92.31	n/a	n/a	0.01	NP
Vanadium (mg/L)	SW-22 (bg)	0	0	48	No	14	78.57	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-08 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-10 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-23 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Zinc (mg/L)	SW-22 (bg)	0	5	48	No	14	92.86	n/a	n/a	0.01	NP

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)

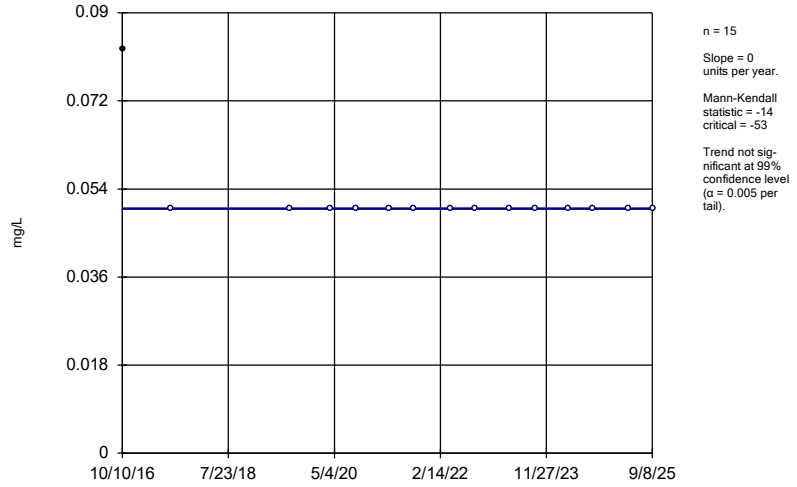


Constituent: Aluminum Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)

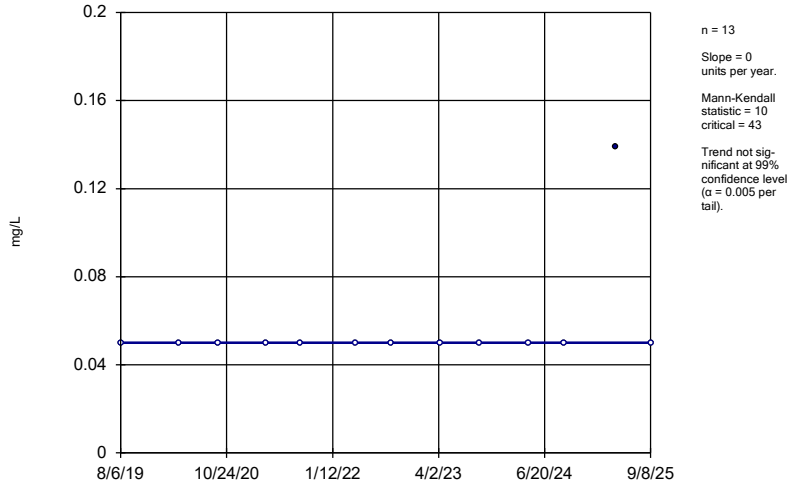


Constituent: Aluminum Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)

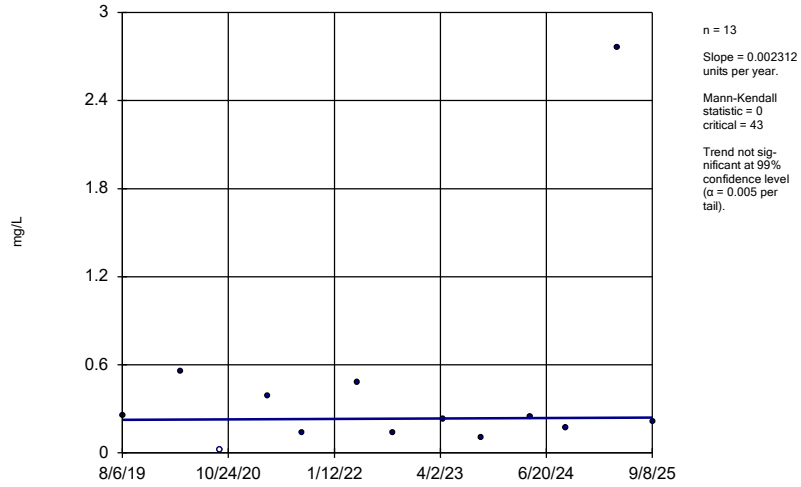


Constituent: Aluminum Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)

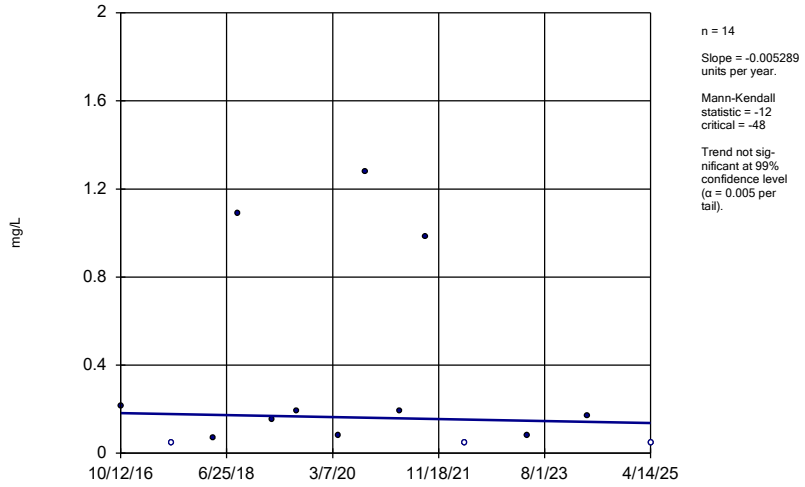


Constituent: Aluminum Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = -0.005289 units per year.

Mann-Kendall statistic = -12
critical = -48

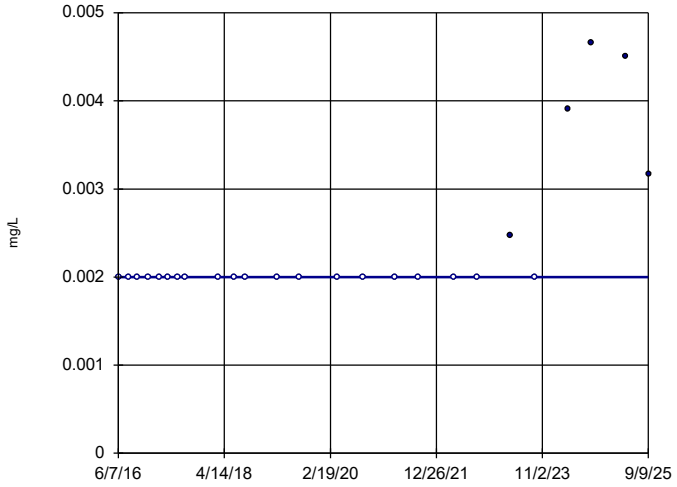
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Aluminum Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 25

Slope = 0 units per year.

Mann-Kendall statistic = 100
critical = 111

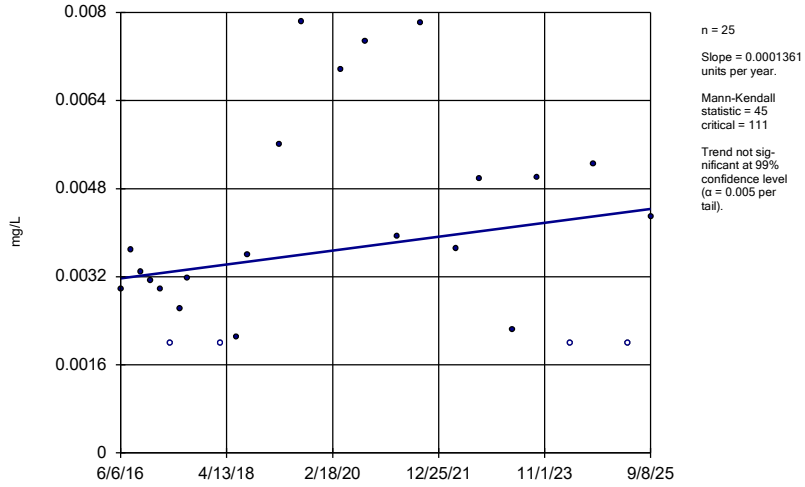
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 25

Slope = 0.0001361 units per year.

Mann-Kendall statistic = 45
critical = 111

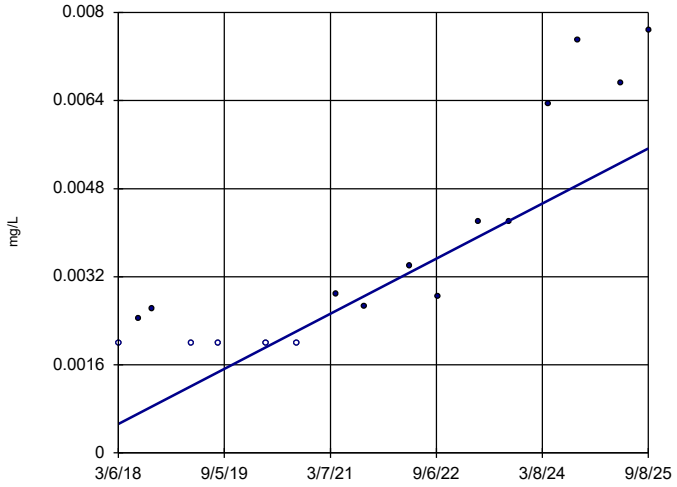
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = 0.0006658 units per year.

Mann-Kendall statistic = 101
critical = 63

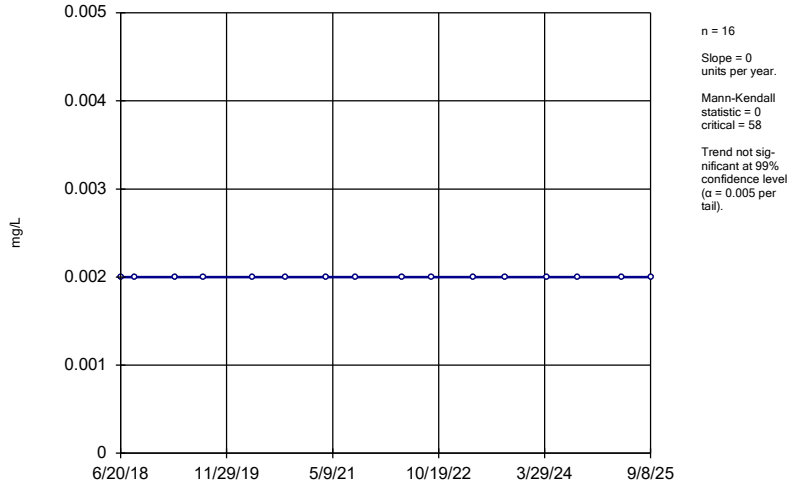
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)

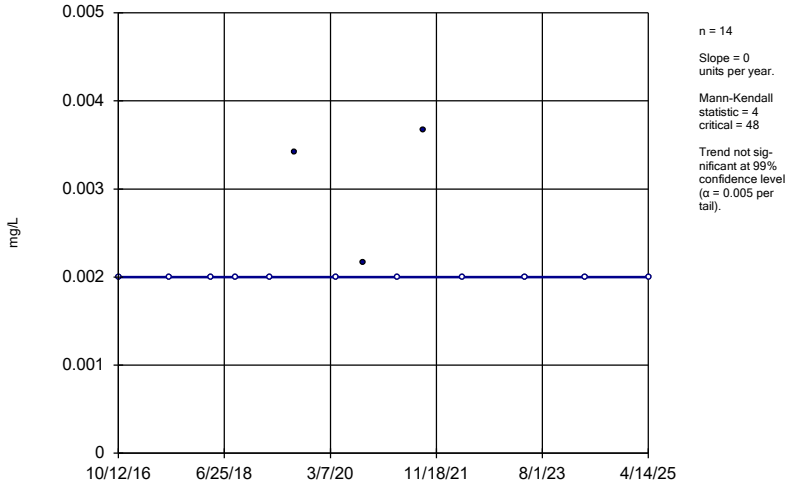


Constituent: Arsenic Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)

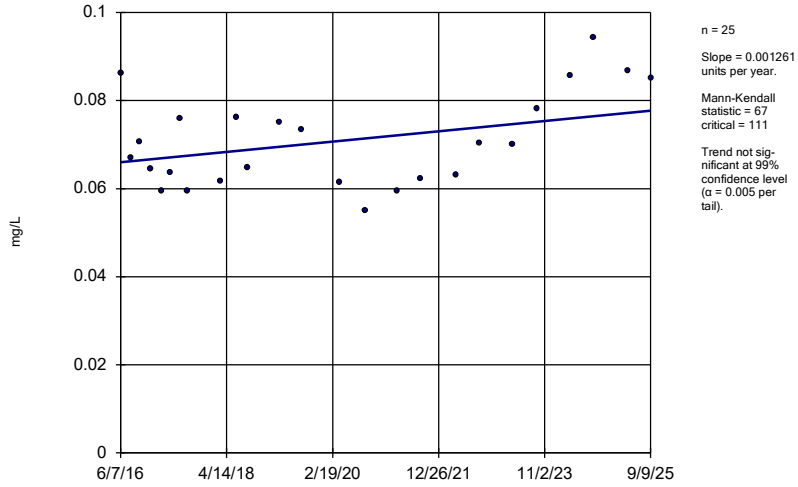


Constituent: Arsenic Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-08 (bg)

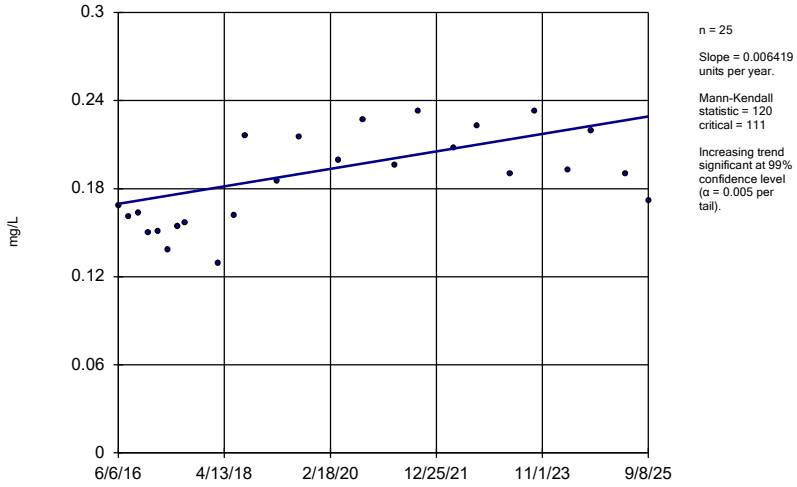


Constituent: Barium Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10 (bg)

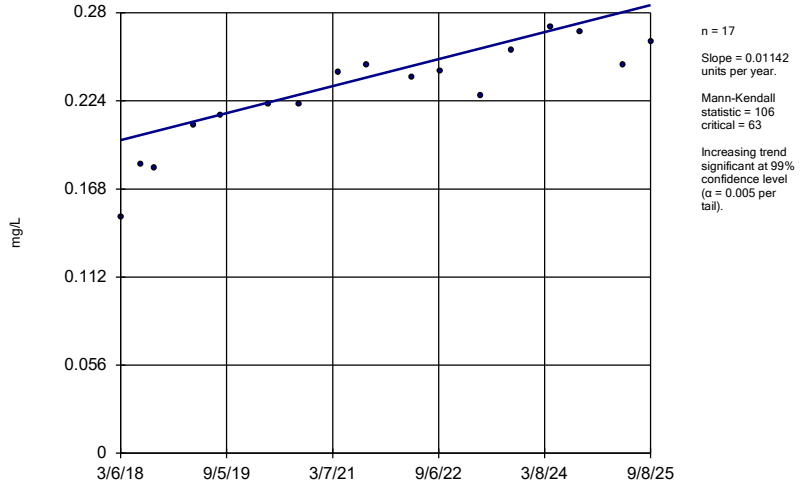


Constituent: Barium Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = 0.01142 units per year.

Mann-Kendall statistic = 106 critical = 63

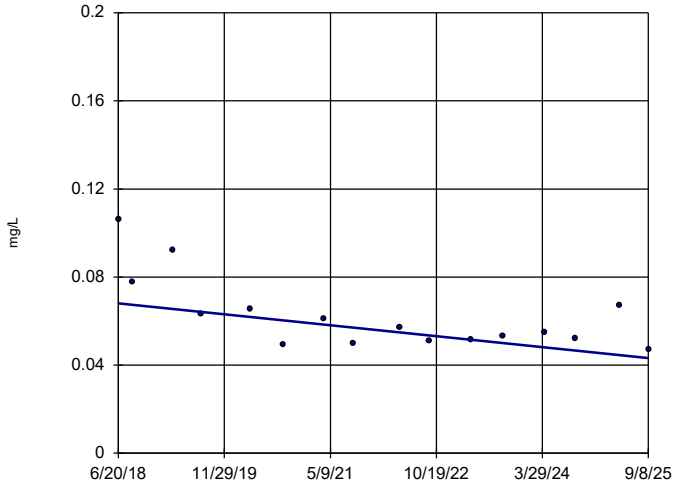
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = -0.003443 units per year.

Mann-Kendall statistic = -50 critical = -58

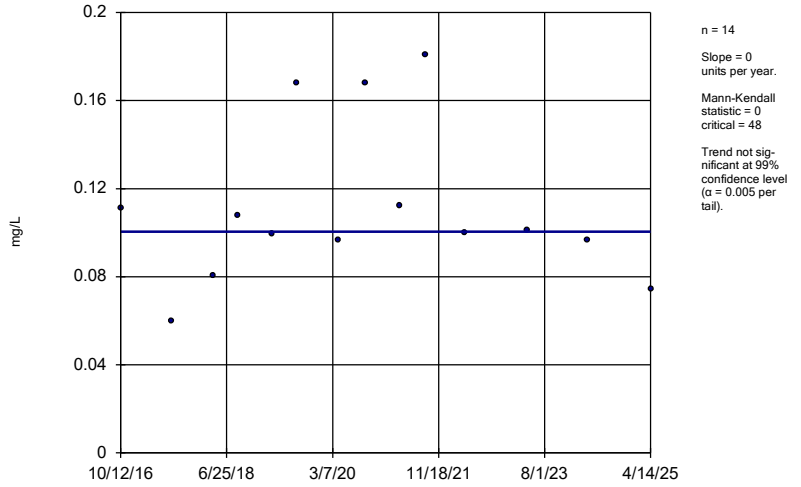
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 48

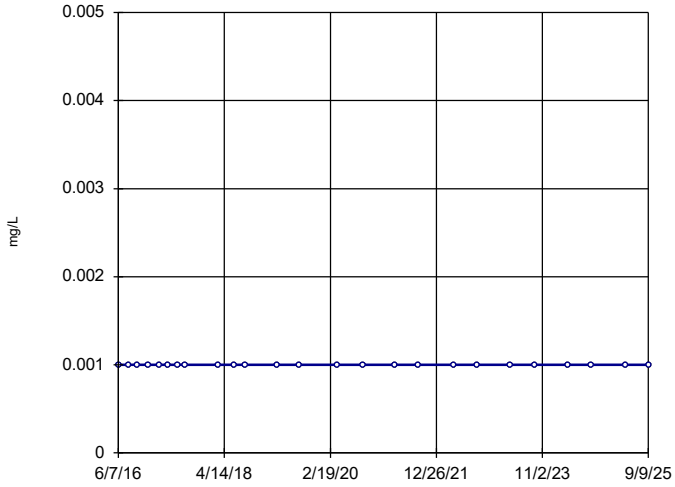
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 25

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 111

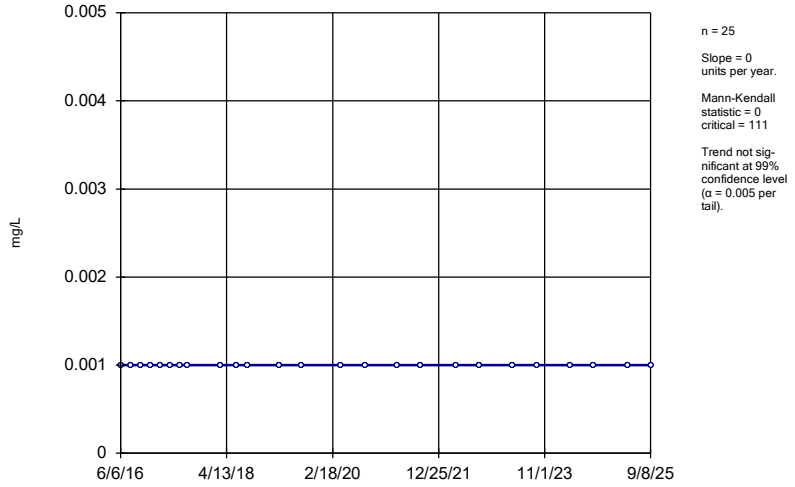
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Beryllium Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)

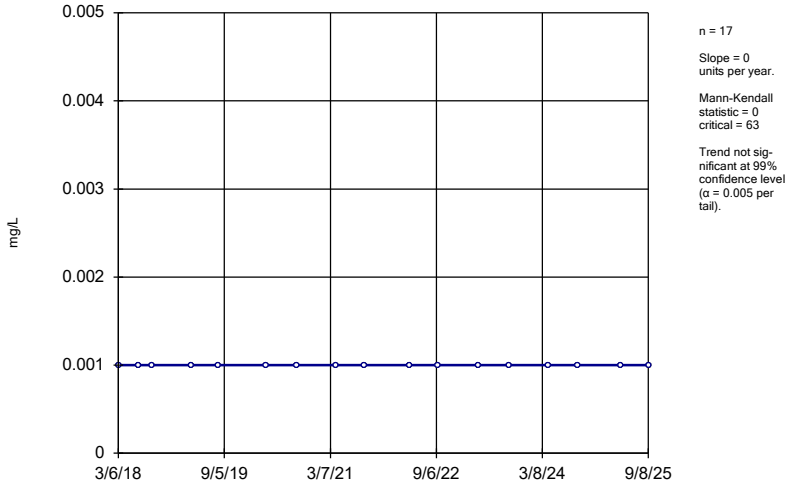


Constituent: Beryllium Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)

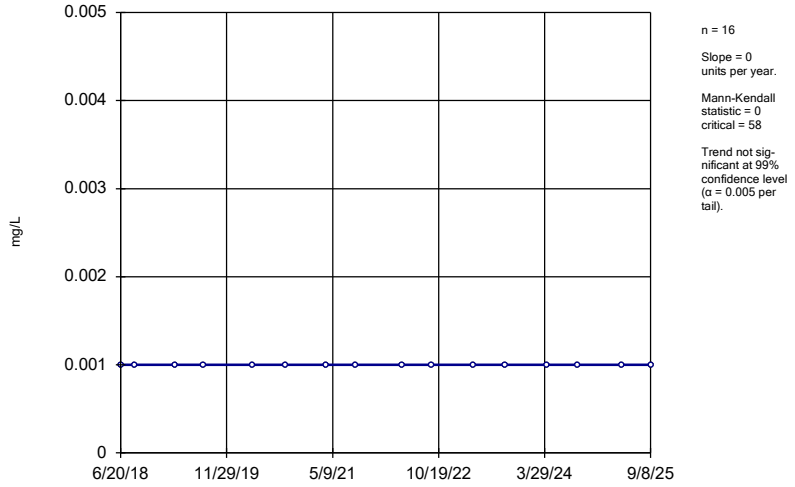


Constituent: Beryllium Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)

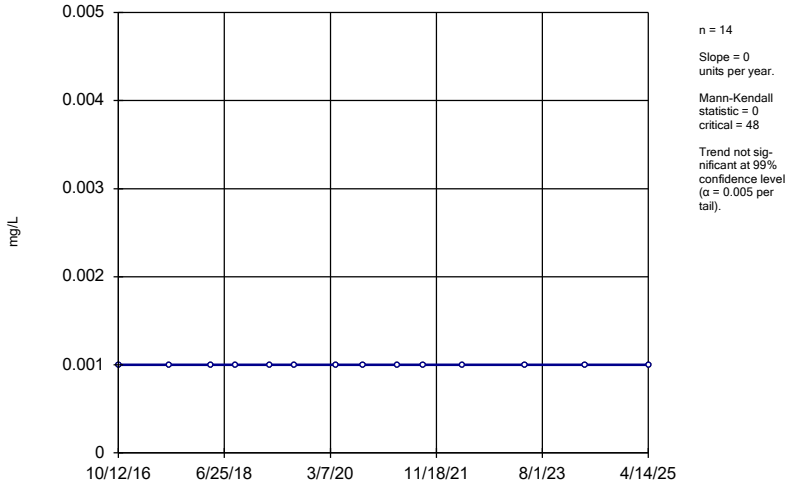


Constituent: Beryllium Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)

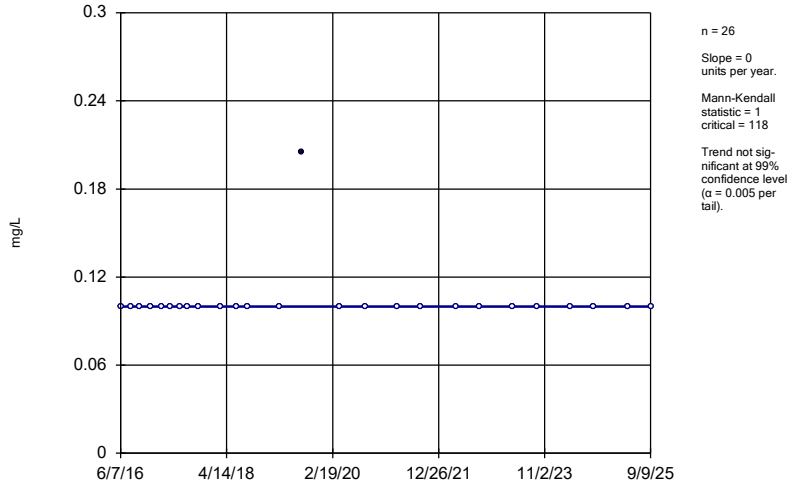


Constituent: Beryllium Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 26

Slope = 0 units per year.

Mann-Kendall statistic = 1
critical = 118

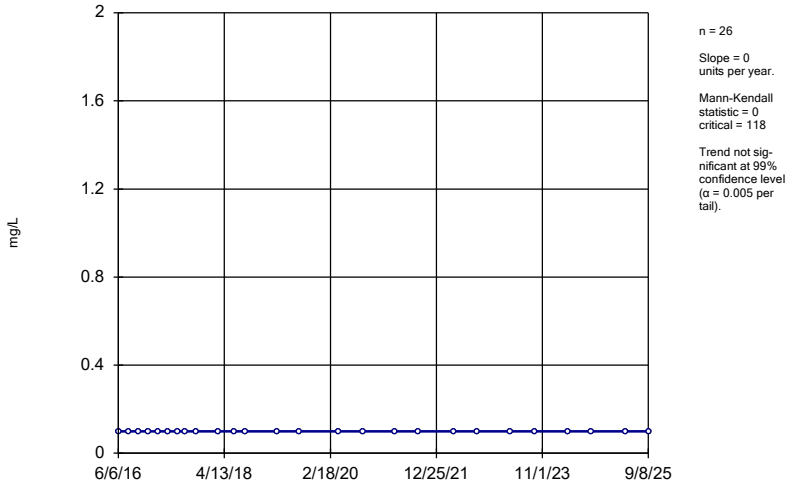
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 26

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 118

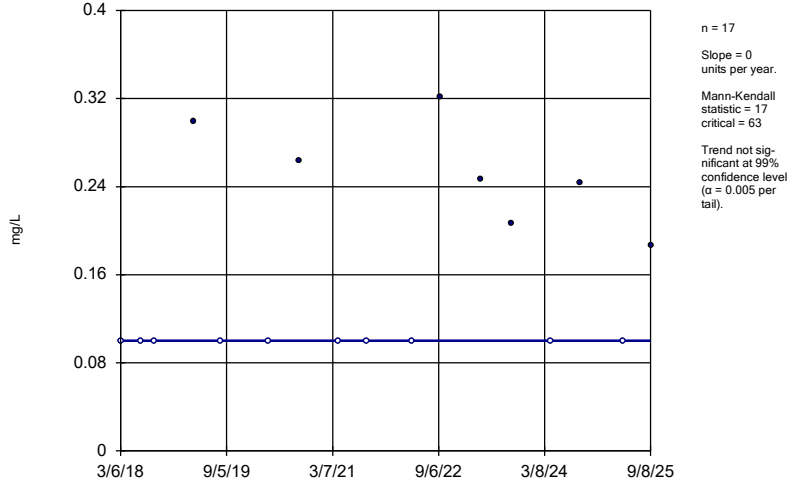
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 2:55 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = 0 units per year.

Mann-Kendall statistic = 17
critical = 63

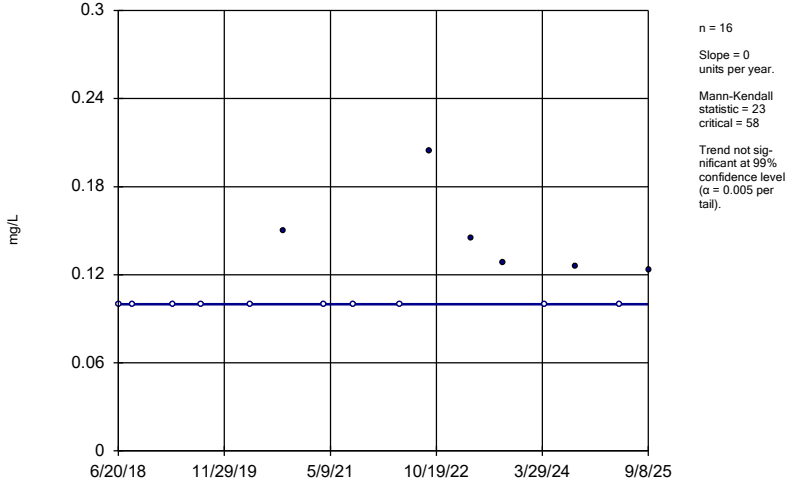
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = 0 units per year.

Mann-Kendall statistic = 23
critical = 58

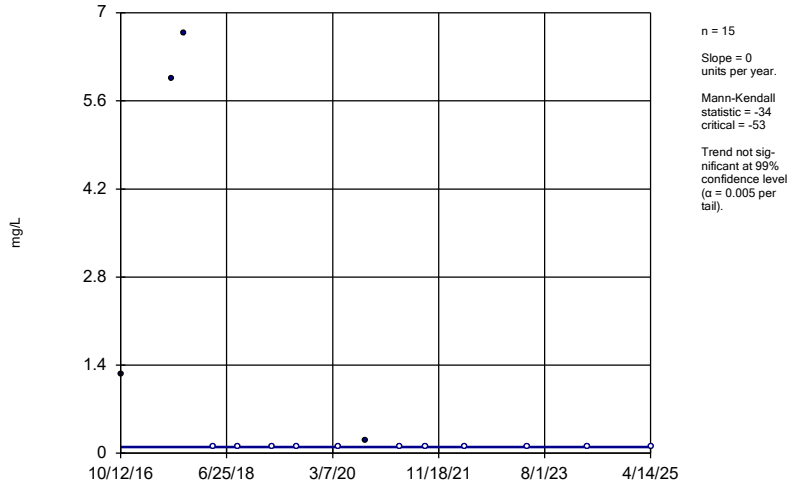
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 15

Slope = 0 units per year.

Mann-Kendall statistic = -34 critical = -53

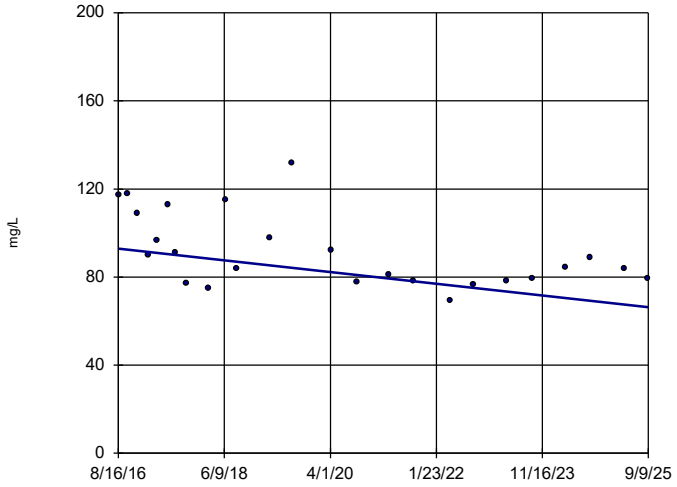
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-08 (bg)



n = 25

Slope = -2.922 units per year.

Mann-Kendall statistic = -102 critical = -111

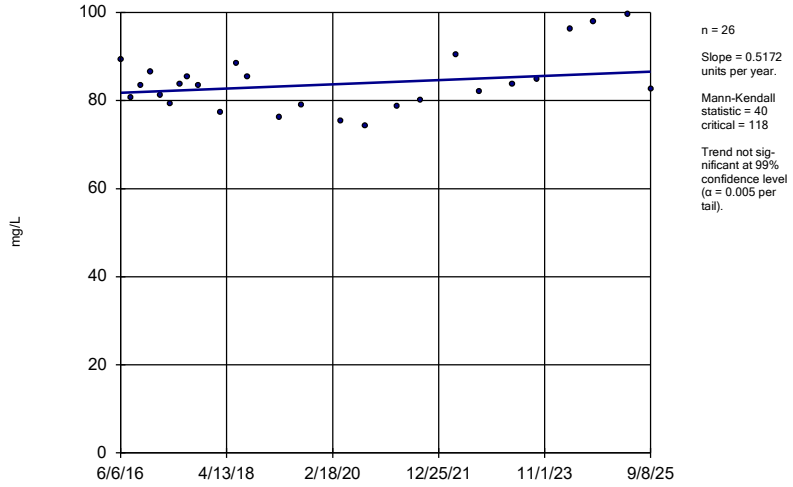
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10 (bg)



n = 26

Slope = 0.5172 units per year.

Mann-Kendall statistic = 40 critical = 118

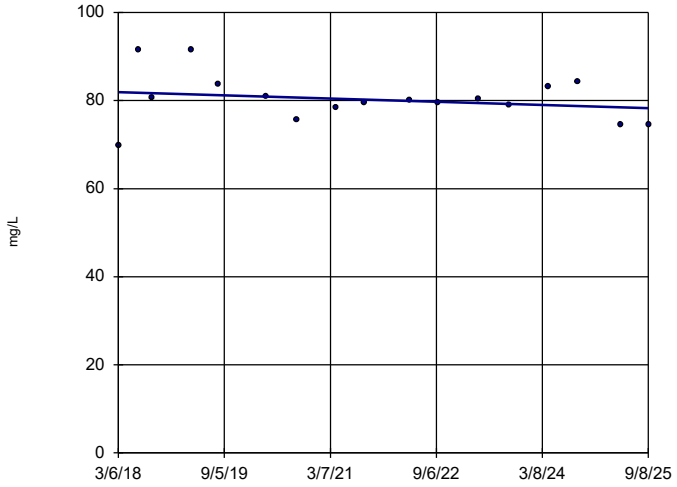
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = -0.4821 units per year.

Mann-Kendall statistic = -22 critical = -63

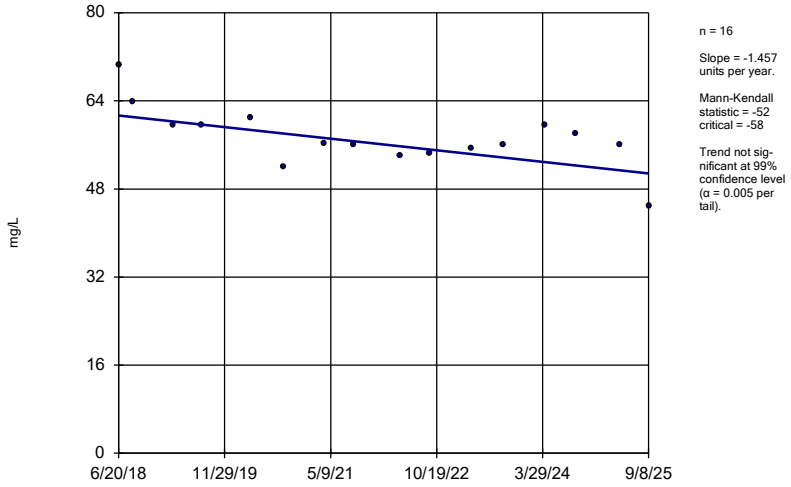
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = -1.457 units per year.

Mann-Kendall statistic = -52 critical = -58

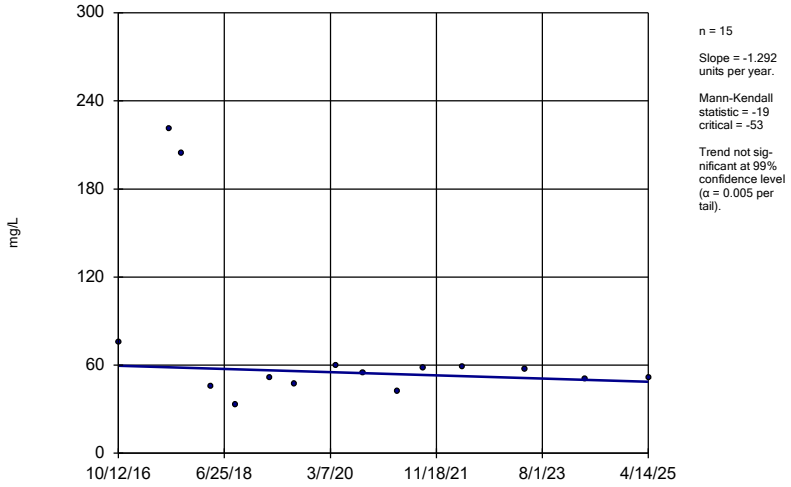
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

SW-22 (bg)



n = 15

Slope = -1.292 units per year.

Mann-Kendall statistic = -19 critical = -53

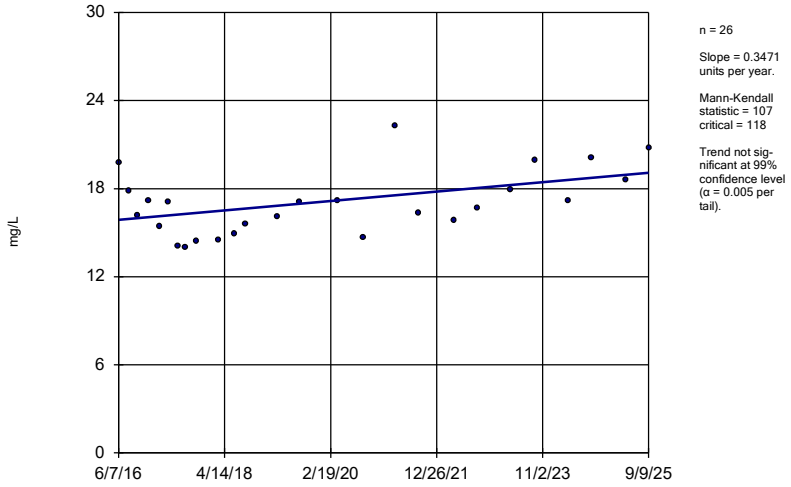
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-08 (bg)



n = 26

Slope = 0.3471 units per year.

Mann-Kendall statistic = 107 critical = 118

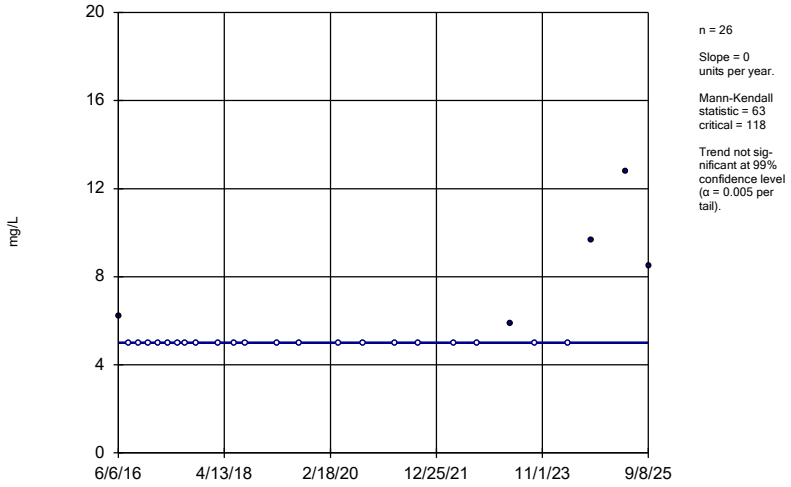
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 26

Slope = 0 units per year.

Mann-Kendall statistic = 63 critical = 118

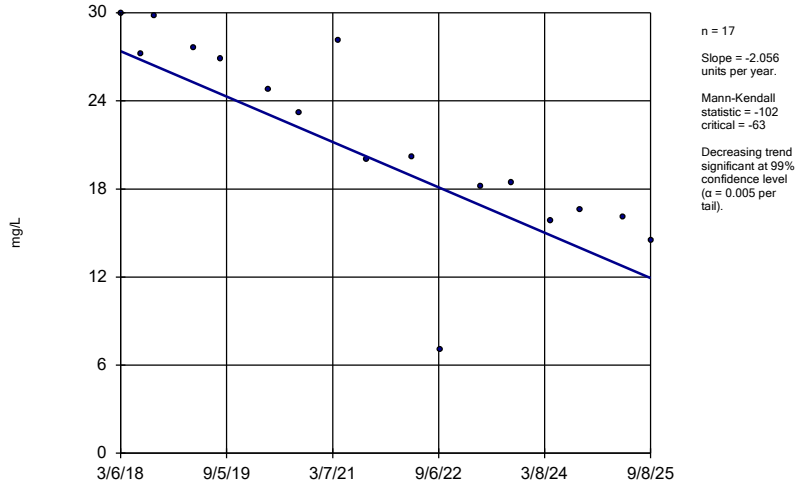
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = -2.056 units per year.

Mann-Kendall statistic = -102 critical = -63

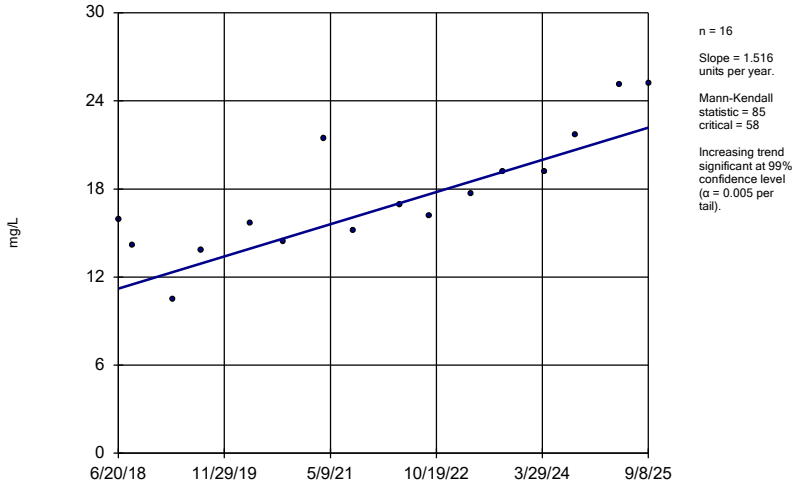
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = 1.516 units per year.

Mann-Kendall statistic = 85 critical = 58

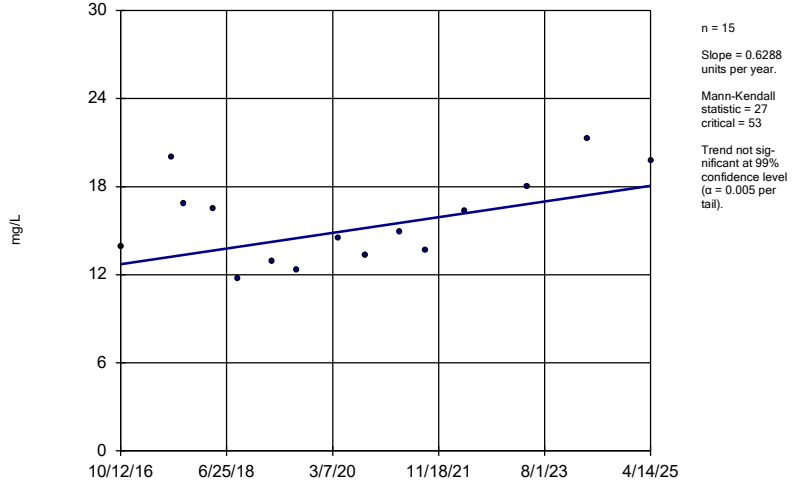
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

SW-22 (bg)



n = 15

Slope = 0.6288 units per year.

Mann-Kendall statistic = 27 critical = 53

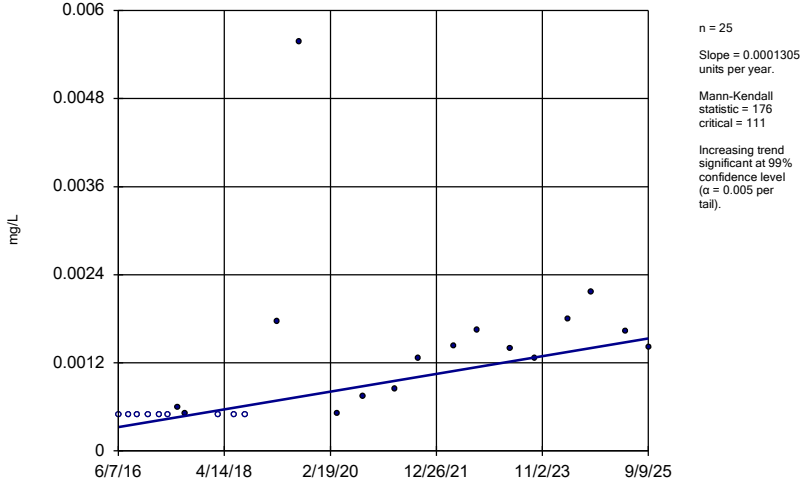
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 25

Slope = 0.0001305 units per year.

Mann-Kendall statistic = 176 critical = 111

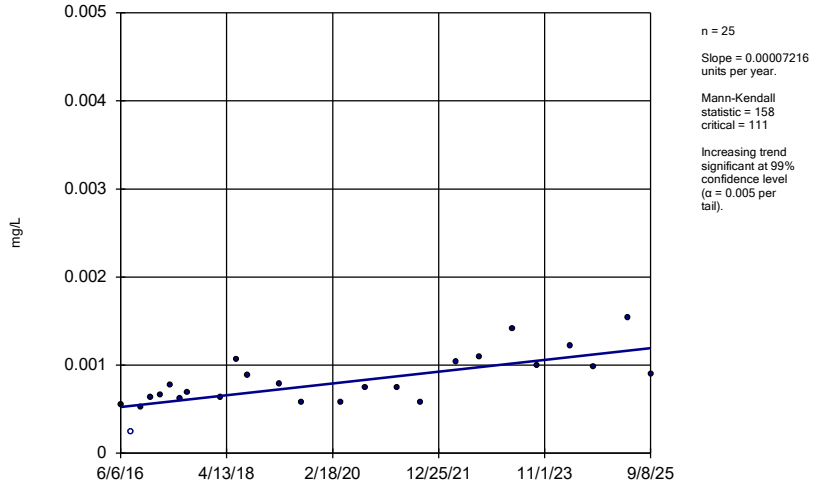
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 25

Slope = 0.00007216 units per year.

Mann-Kendall statistic = 158
critical = 111

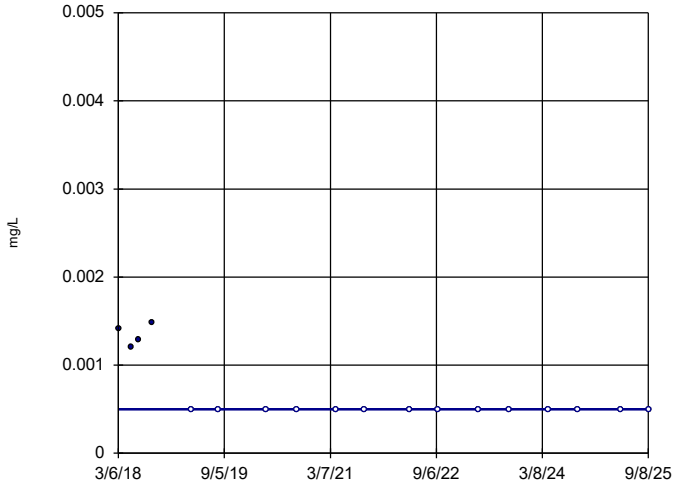
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 18

Slope = 0 units per year.

Mann-Kendall statistic = -54
critical = -68

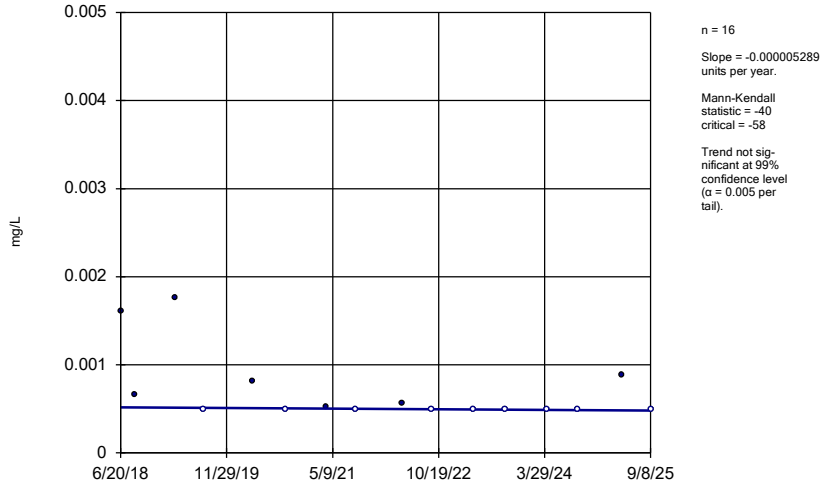
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = -0.000005289 units per year.

Mann-Kendall statistic = -40
critical = -58

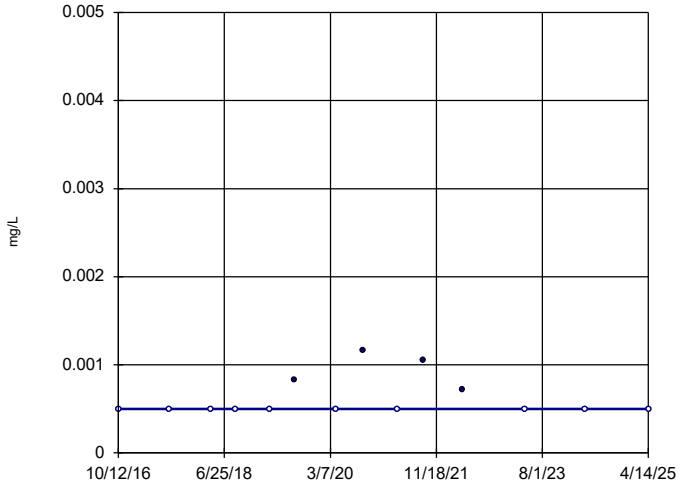
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0 units per year.

Mann-Kendall statistic = 8
critical = 48

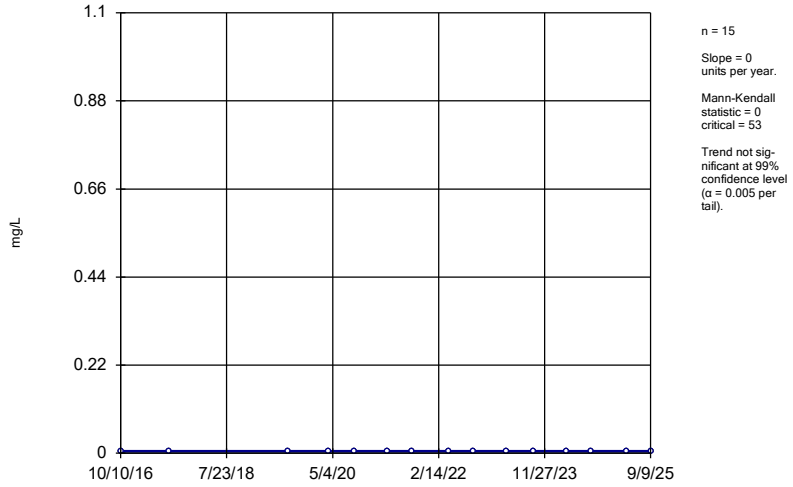
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)

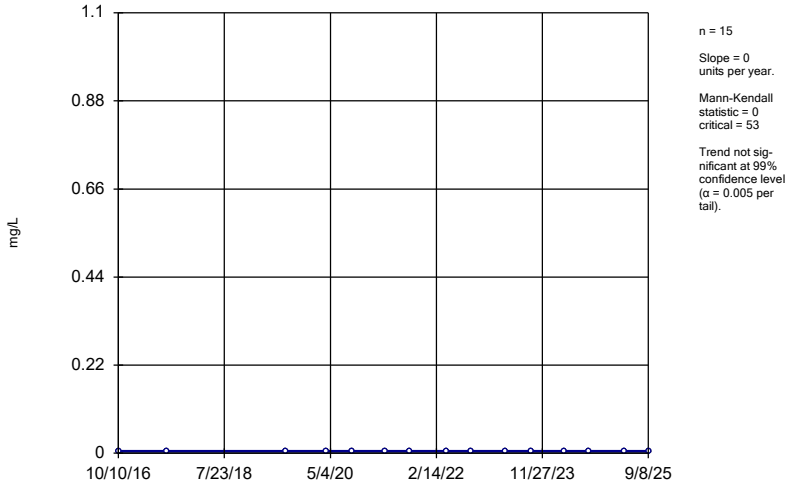


Constituent: Copper Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)

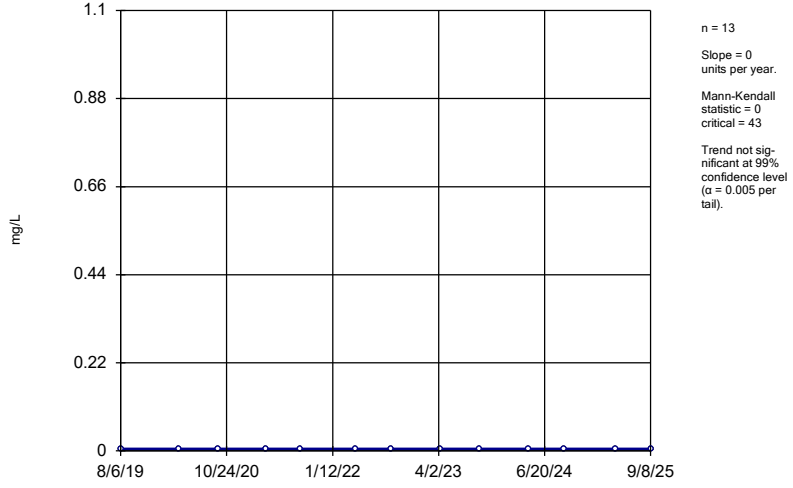


Constituent: Copper Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)

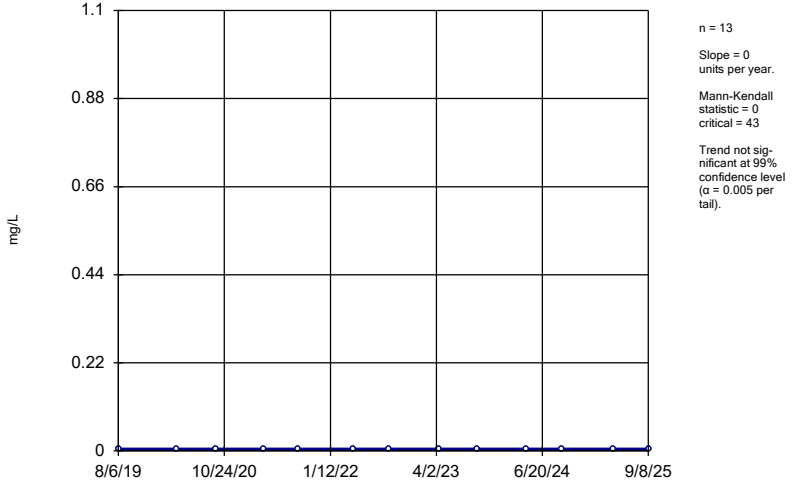


Constituent: Copper Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

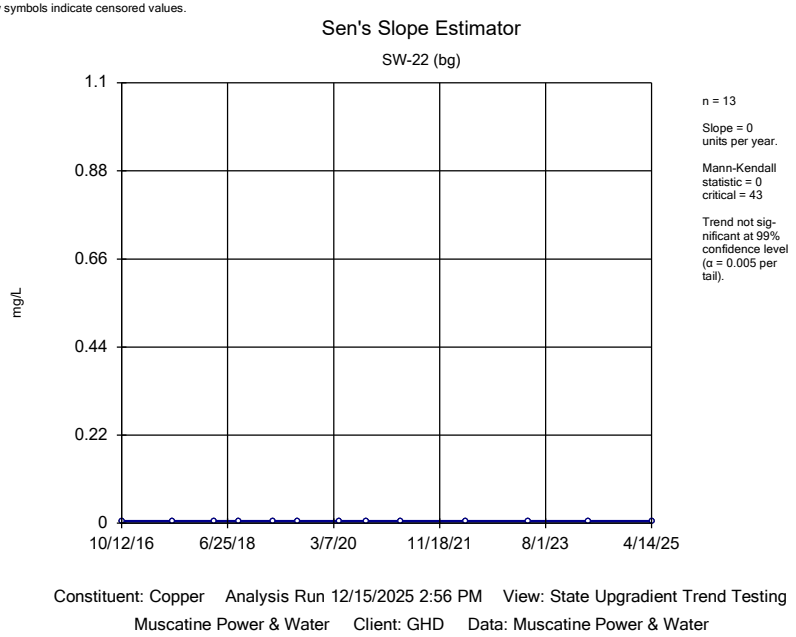
Sen's Slope Estimator

MW-23 (bg)



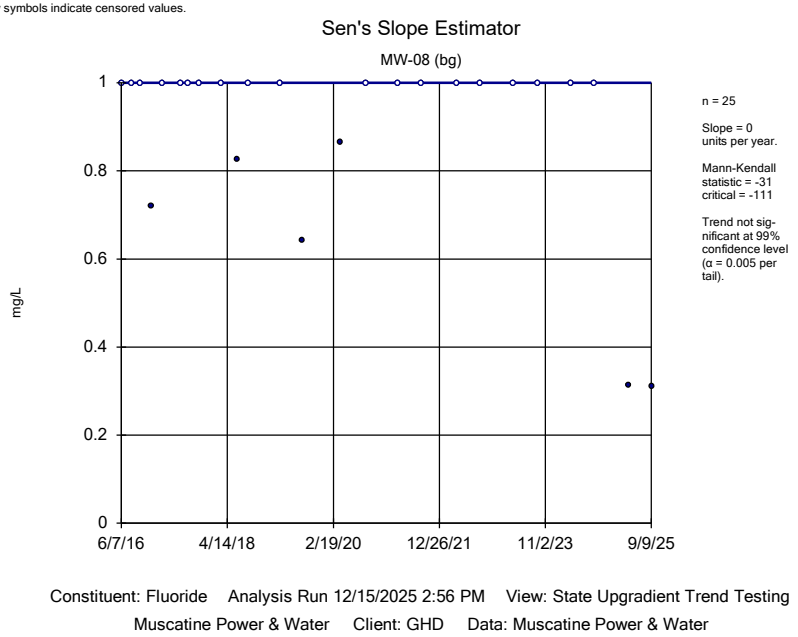
Constituent: Copper Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.



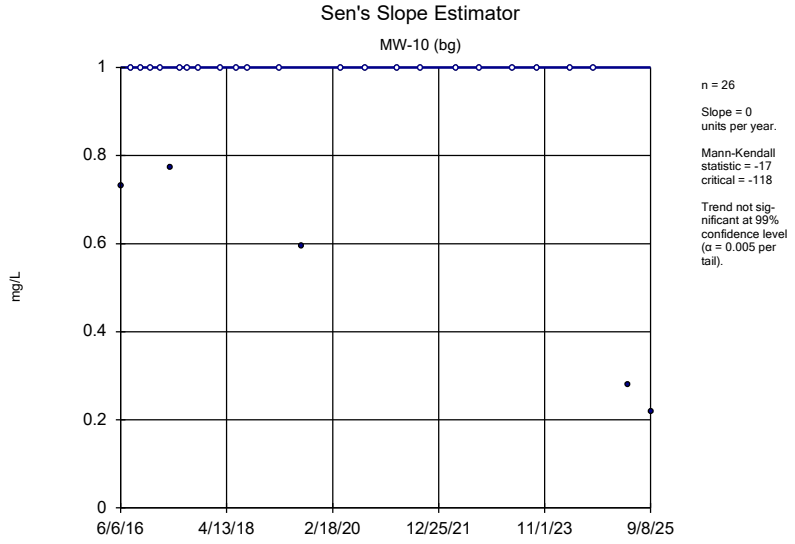
Constituent: Copper Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.



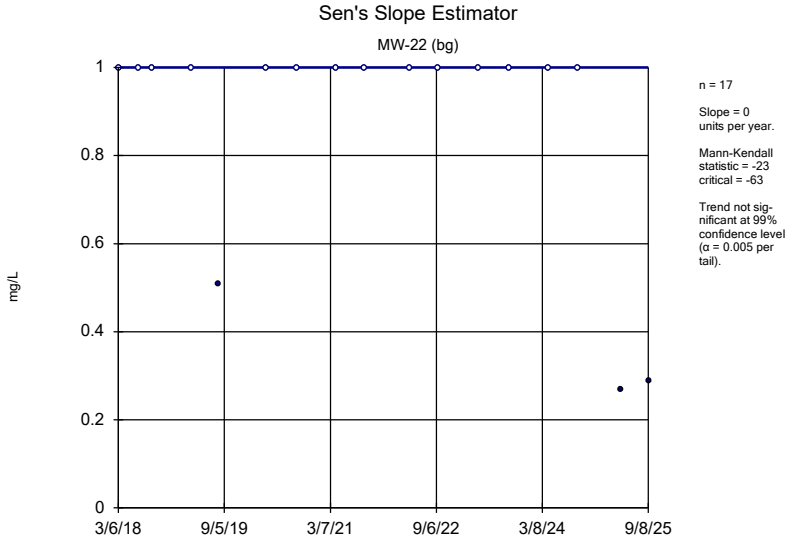
Constituent: Fluoride Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.



Constituent: Fluoride Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

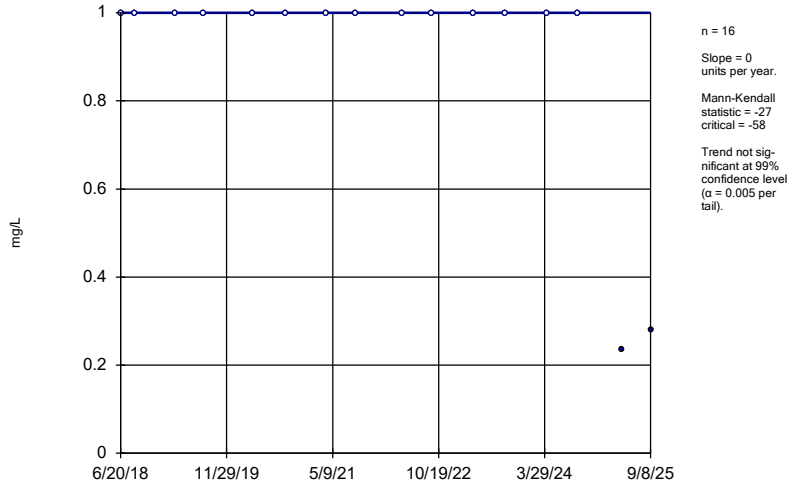


Constituent: Fluoride Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = 0
units per year.

Mann-Kendall
statistic = -27
critical = -58

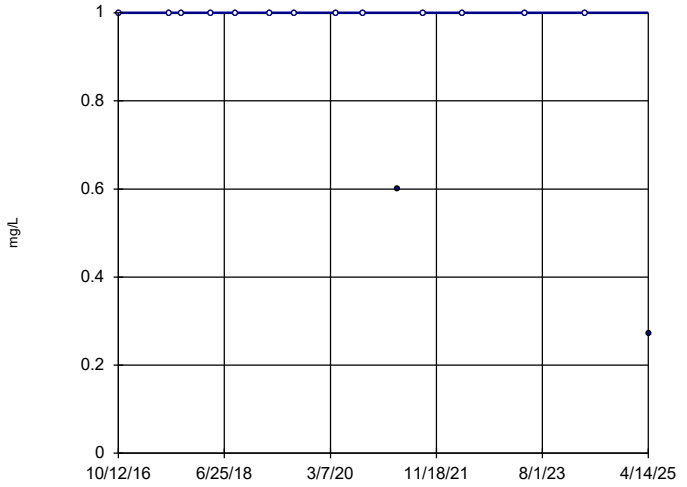
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Fluoride Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 15

Slope = 0
units per year.

Mann-Kendall
statistic = -19
critical = -53

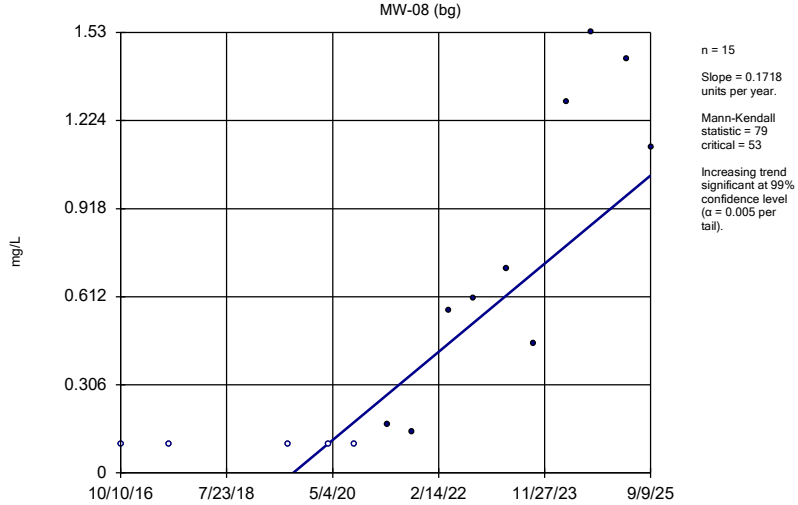
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Fluoride Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 15

Slope = 0.1718
units per year.

Mann-Kendall
statistic = 79
critical = 53

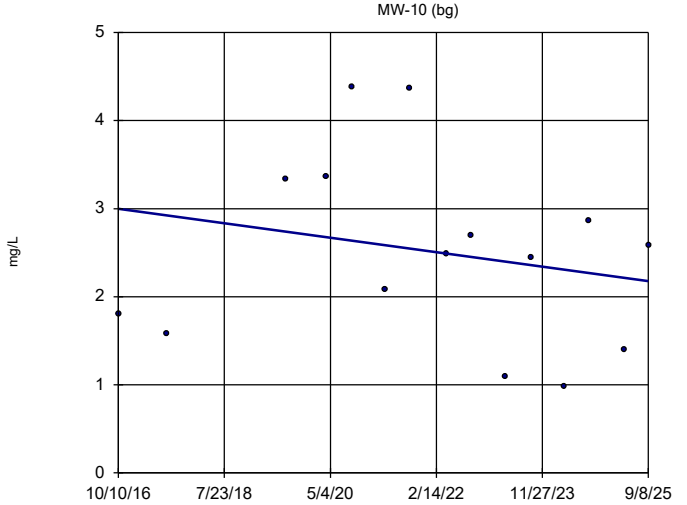
Increasing trend
significant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Iron Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10 (bg)



n = 15

Slope = -0.09218
units per year.

Mann-Kendall
statistic = -15
critical = -53

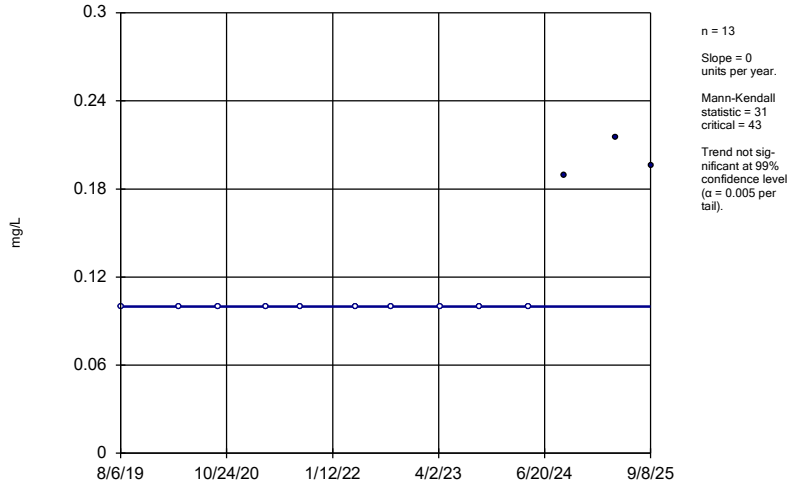
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Iron Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 13

Slope = 0 units per year.

Mann-Kendall statistic = 31 critical = 43

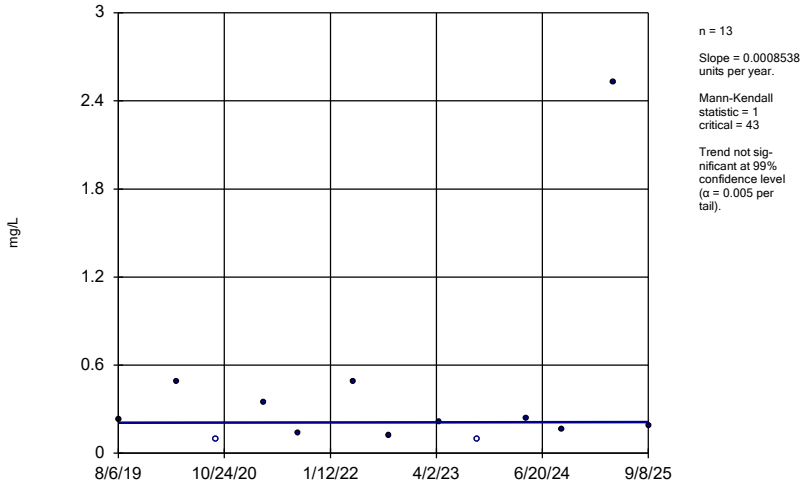
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 13

Slope = 0.0008538 units per year.

Mann-Kendall statistic = 1 critical = 43

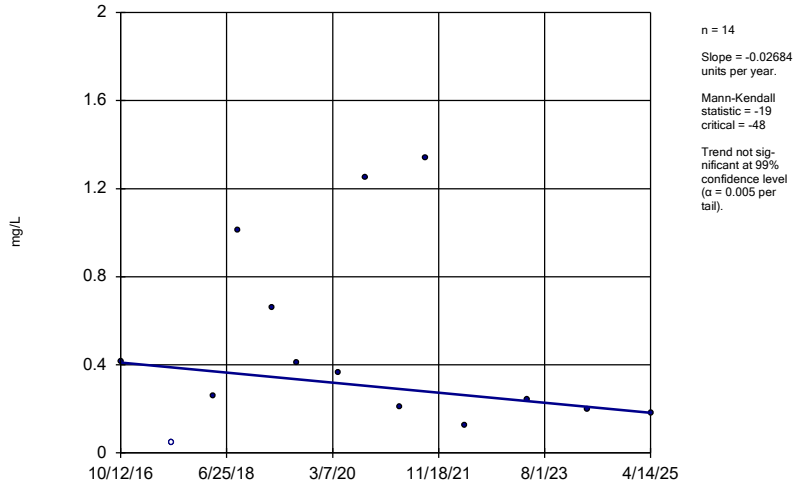
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = -0.02684 units per year.

Mann-Kendall statistic = -19 critical = -48

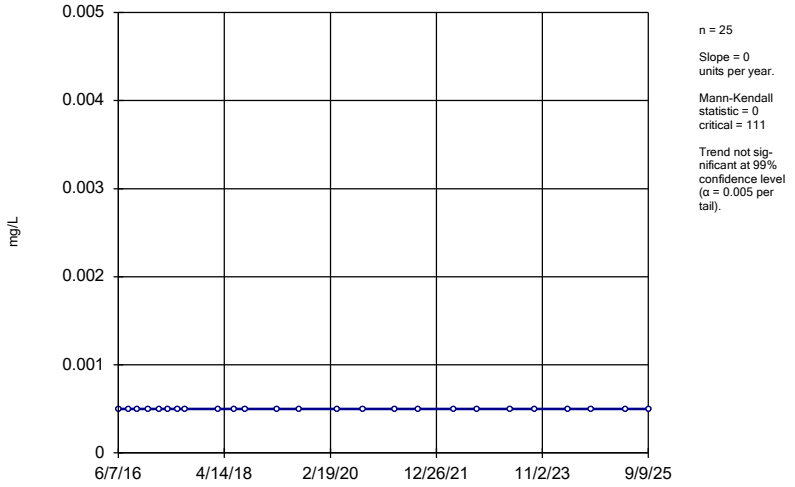
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 25

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 111

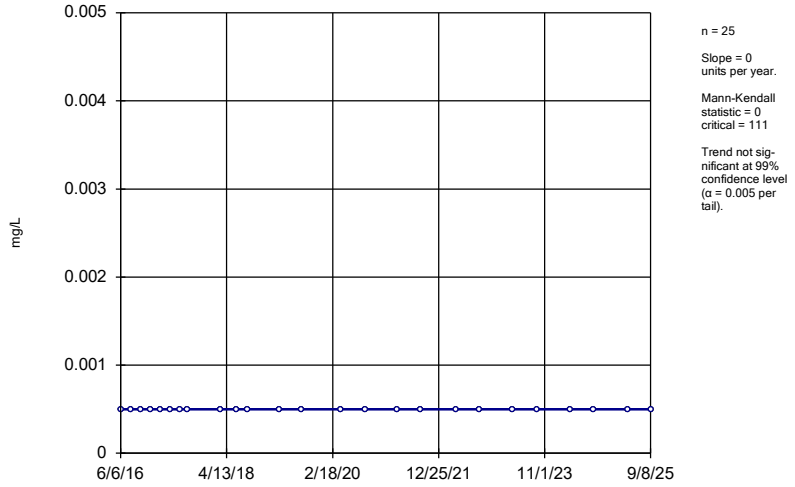
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 25

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 111

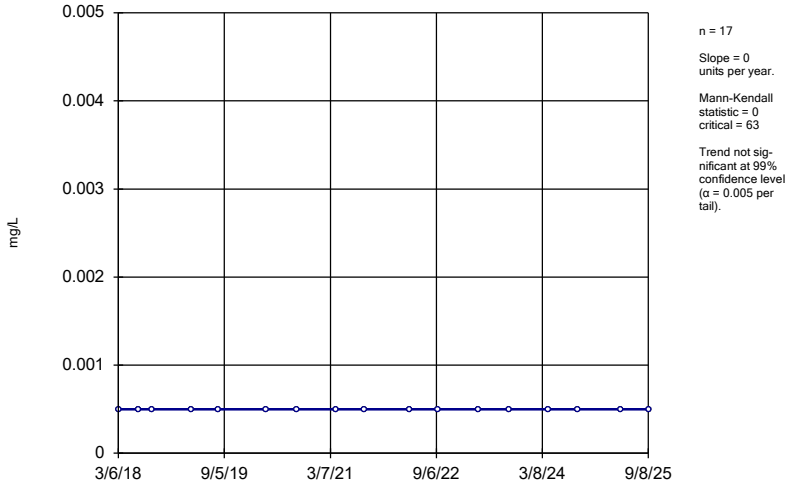
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 63

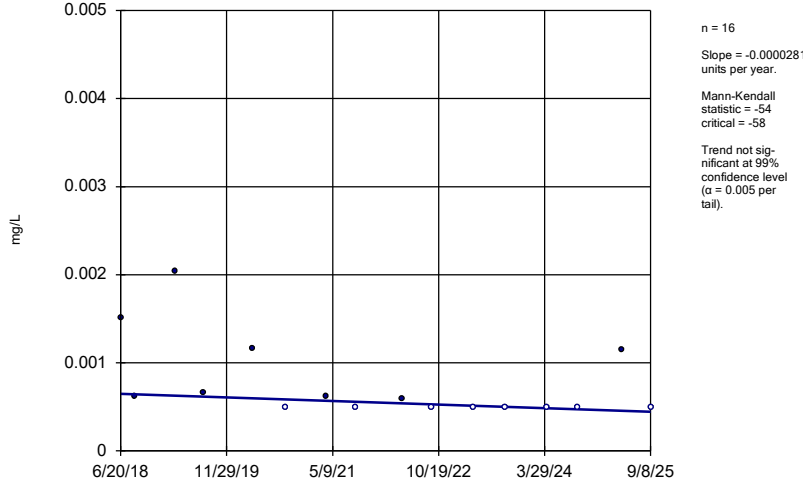
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = -0.00002816 units per year.

Mann-Kendall statistic = -54
critical = -58

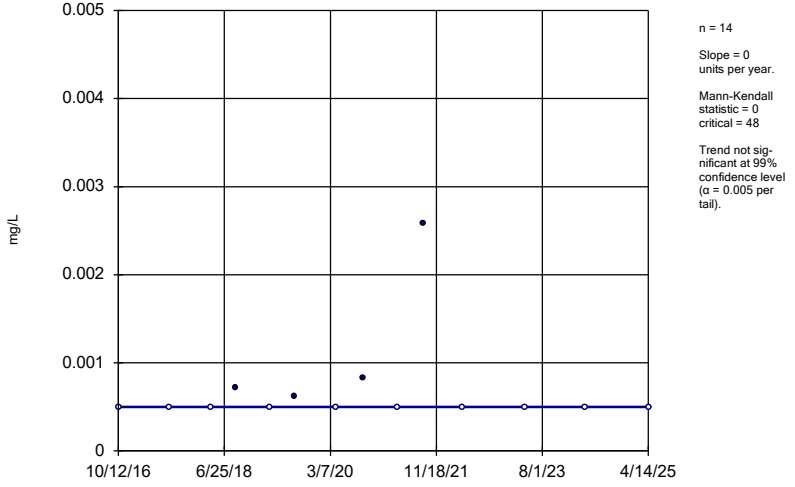
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 48

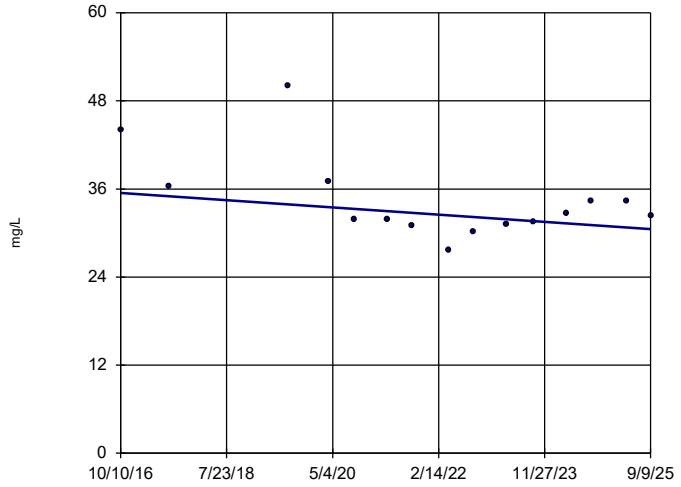
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-08 (bg)



n = 15

Slope = -0.5535 units per year.

Mann-Kendall statistic = -20
critical = -53

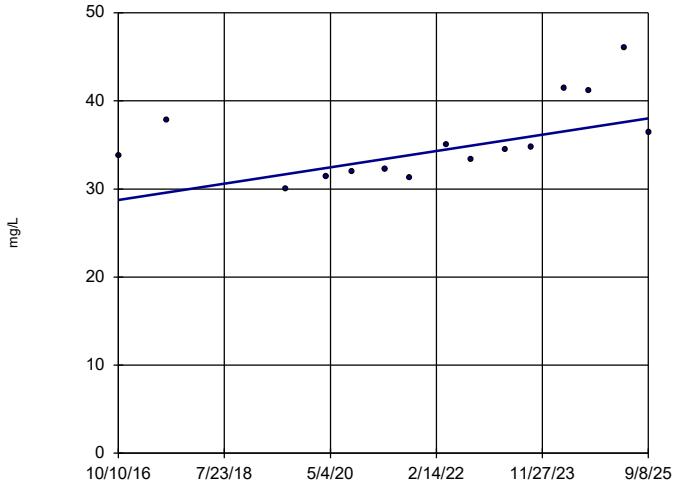
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Magnesium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10 (bg)



n = 15

Slope = 1.038 units per year.

Mann-Kendall statistic = 53
critical = 53

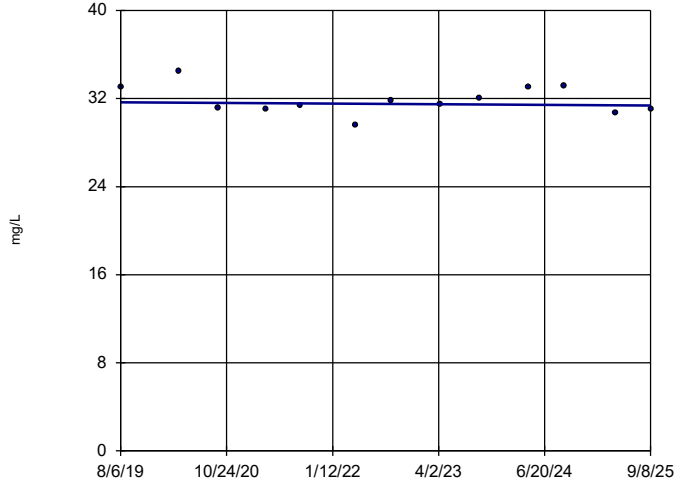
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Magnesium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-22 (bg)



n = 13

Slope = -0.04727 units per year.

Mann-Kendall statistic = -4
critical = -43

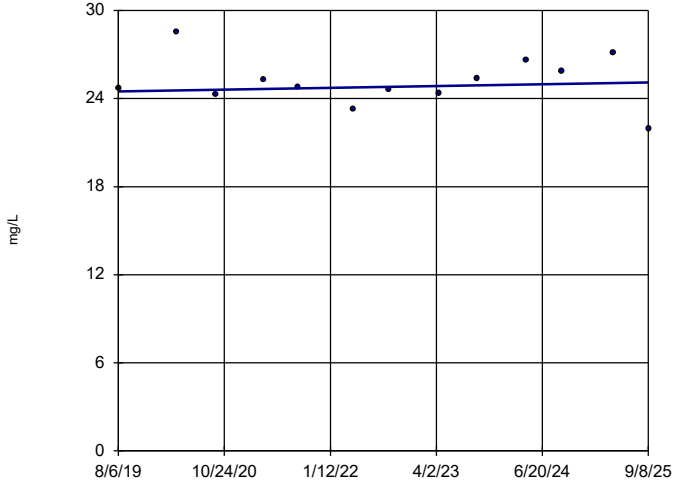
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Magnesium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-23 (bg)



n = 13

Slope = 0.09952 units per year.

Mann-Kendall statistic = 6
critical = 43

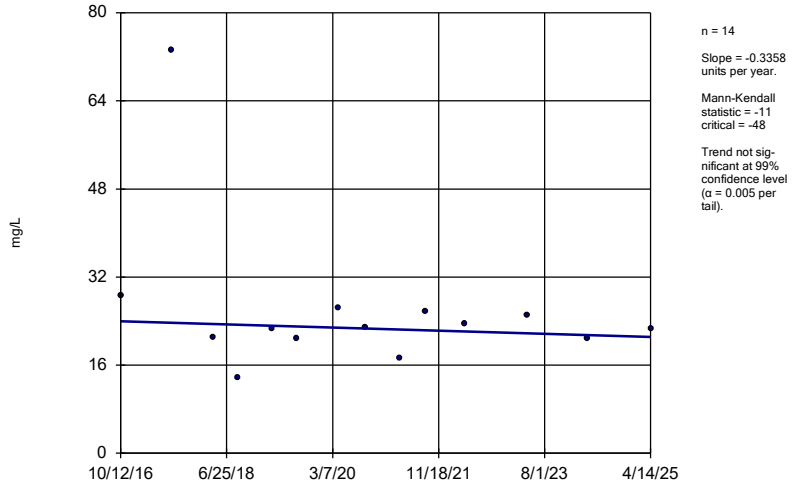
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Magnesium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = -0.3358 units per year.

Mann-Kendall statistic = -11
critical = -48

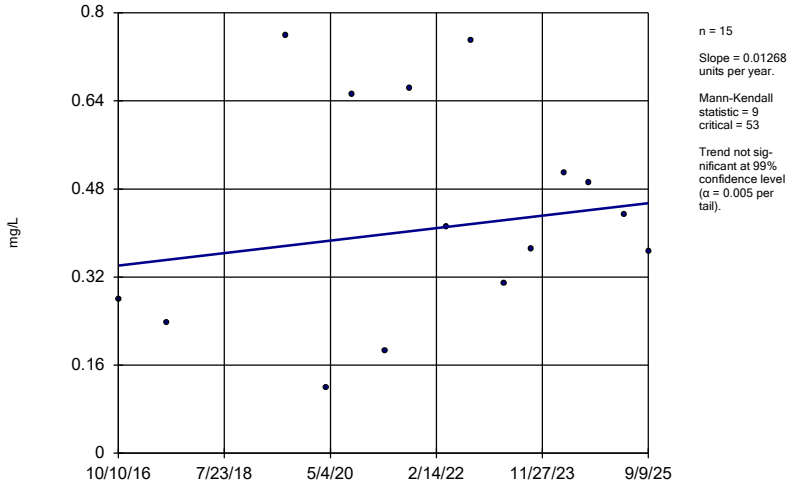
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Magnesium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-08 (bg)



n = 15

Slope = 0.01268 units per year.

Mann-Kendall statistic = 9
critical = 53

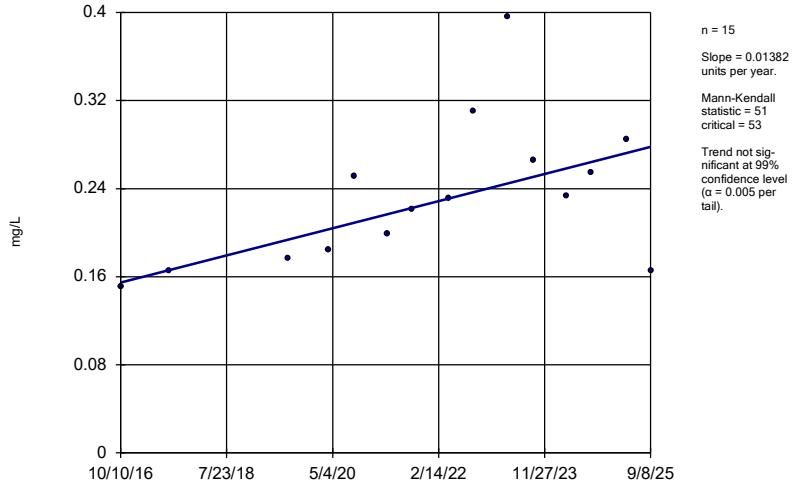
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10 (bg)



n = 15

Slope = 0.01382 units per year.

Mann-Kendall statistic = 51
critical = 53

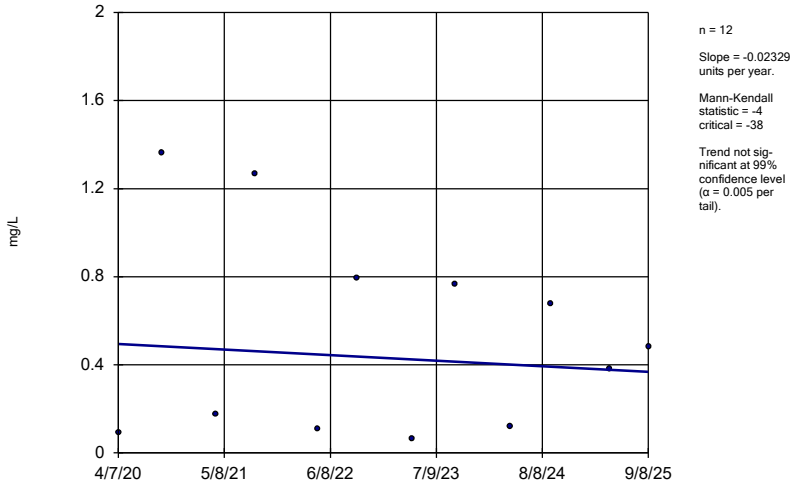
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-22 (bg)



n = 12

Slope = -0.02329 units per year.

Mann-Kendall statistic = -4
critical = -38

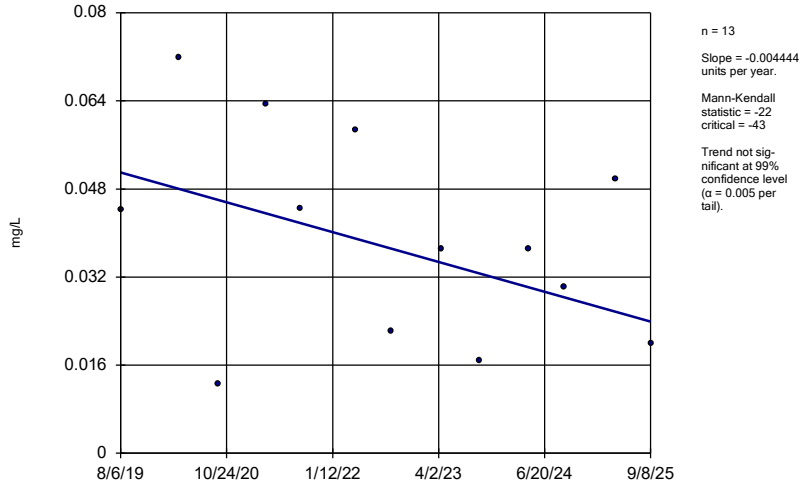
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-23 (bg)



n = 13

Slope = -0.004444 units per year.

Mann-Kendall statistic = -22
critical = -43

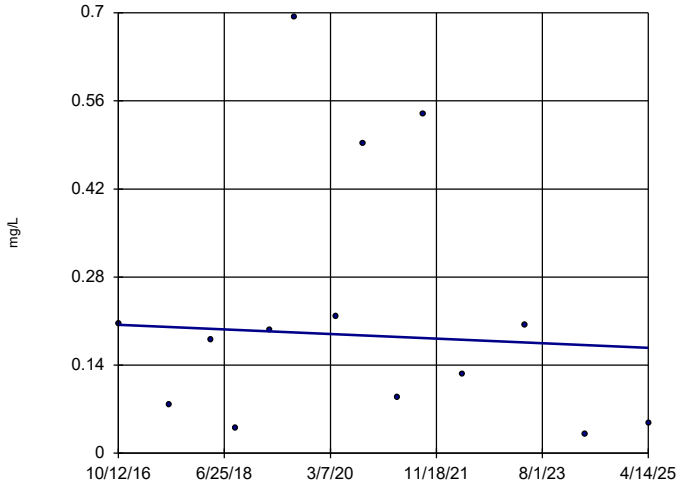
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = -0.004286 units per year.

Mann-Kendall statistic = -9
critical = -48

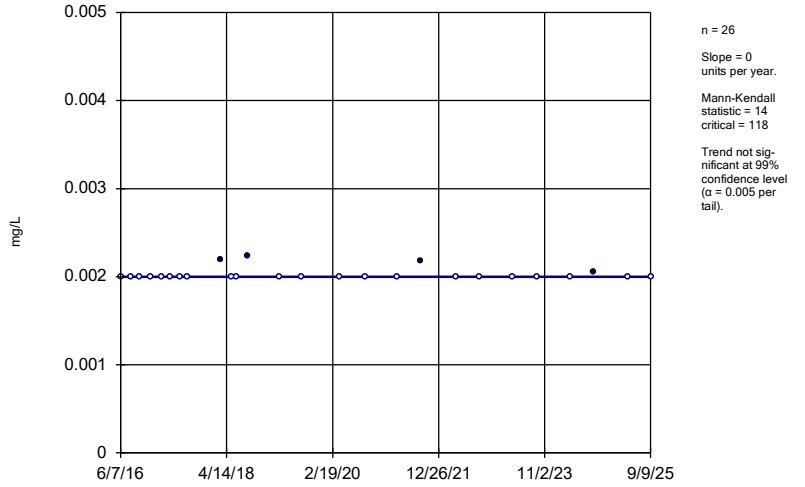
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 26

Slope = 0 units per year.

Mann-Kendall statistic = 14
critical = 118

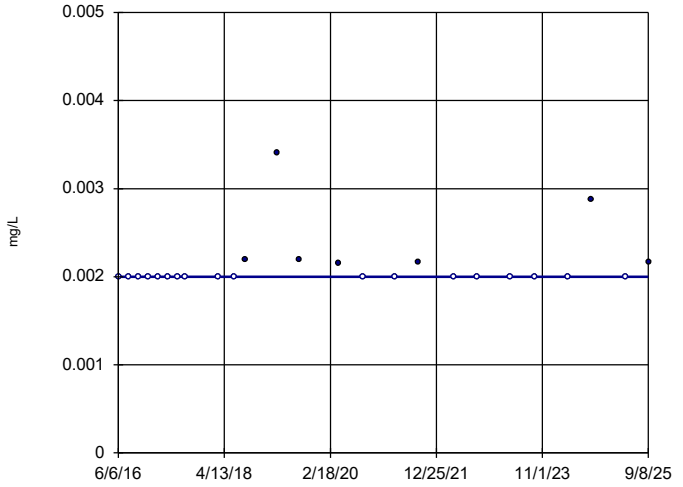
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Molybdenum Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 25

Slope = 0 units per year.

Mann-Kendall statistic = 41
critical = 111

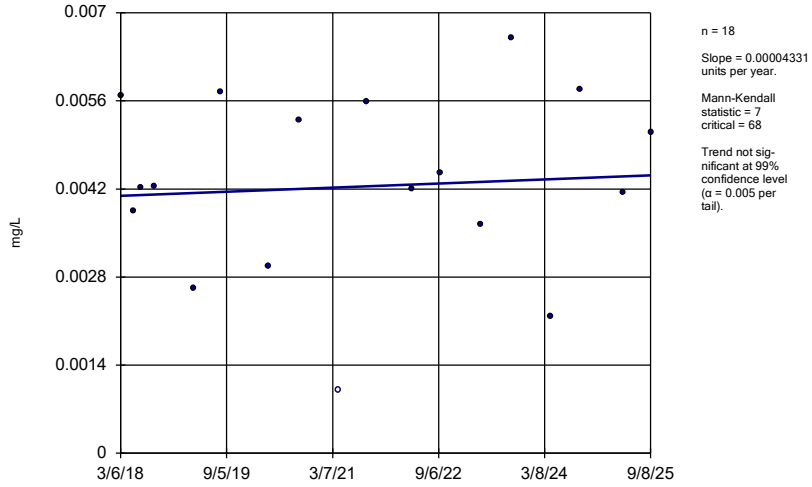
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Molybdenum Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 18

Slope = 0.00004331 units per year.

Mann-Kendall statistic = 7
critical = 68

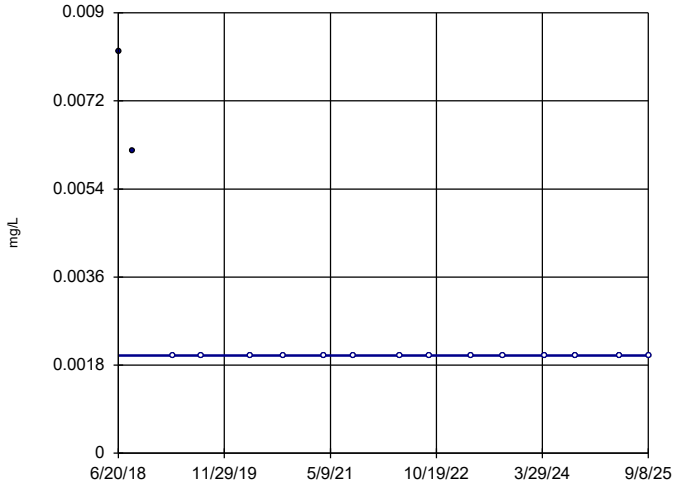
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Molybdenum Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = 0 units per year.

Mann-Kendall statistic = -29
critical = -58

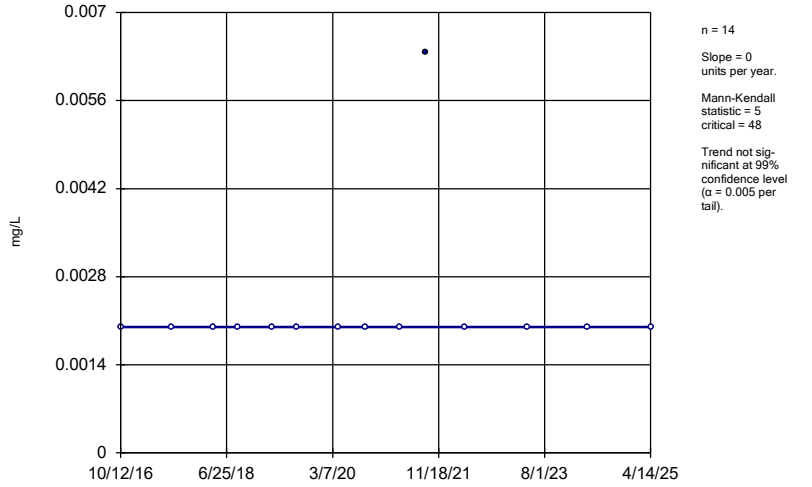
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Molybdenum Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0 units per year.

Mann-Kendall statistic = 5
critical = 48

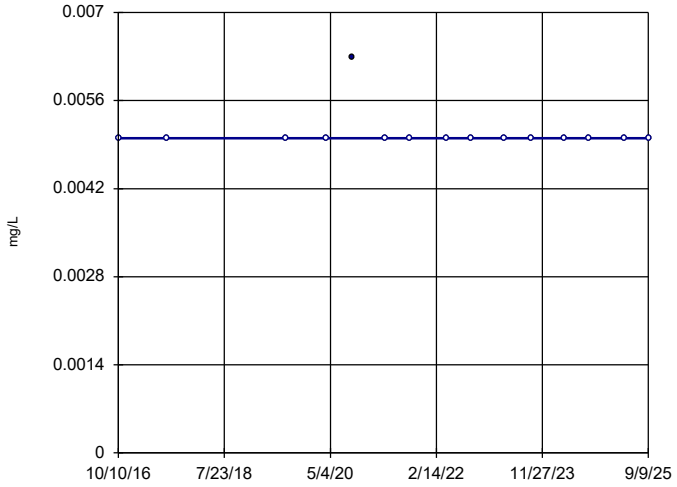
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Molybdenum Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 15

Slope = 0 units per year.

Mann-Kendall statistic = -6
critical = -53

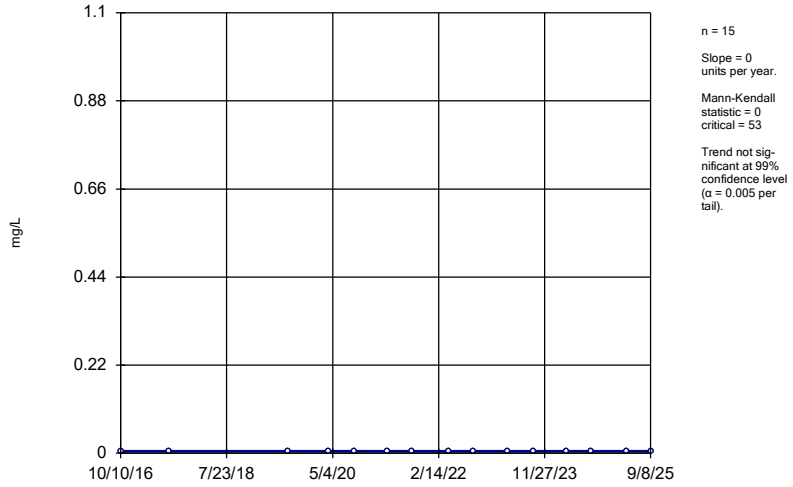
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 15

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 53

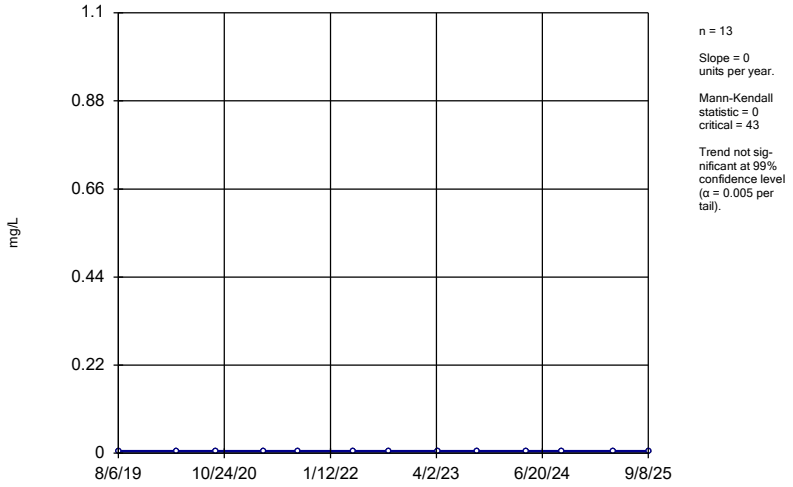
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 13

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 43

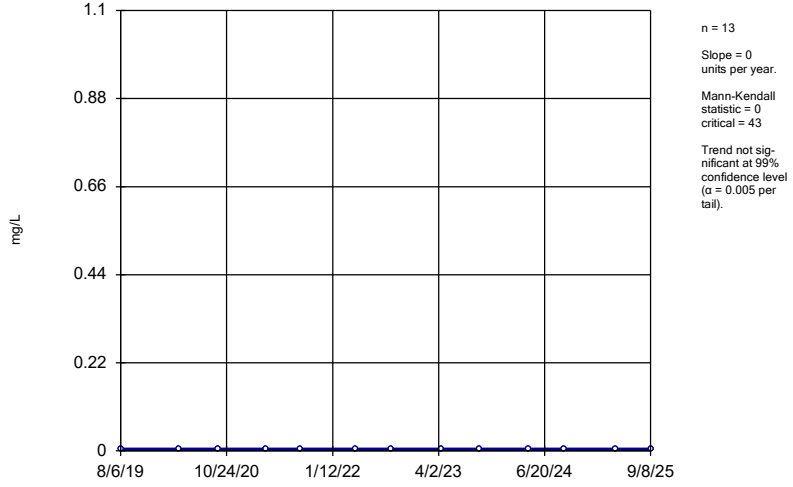
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 13

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 43

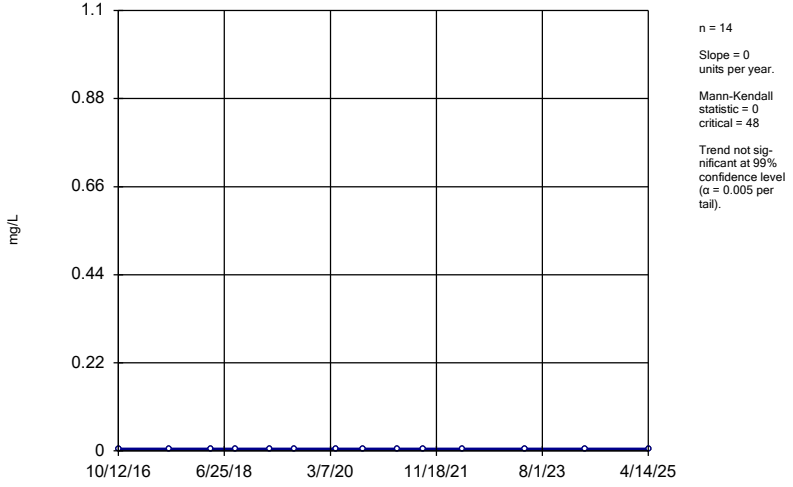
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 48

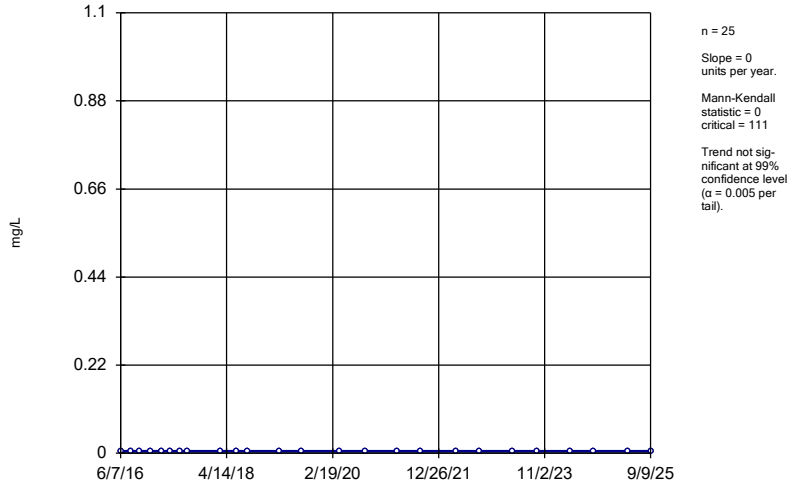
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 25

Slope = 0
units per year.

Mann-Kendall
statistic = 0
critical = 111

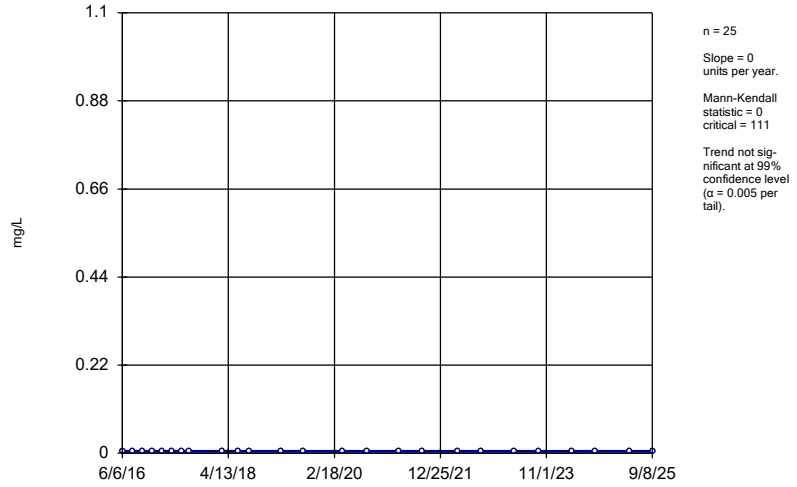
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Selenium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 25

Slope = 0
units per year.

Mann-Kendall
statistic = 0
critical = 111

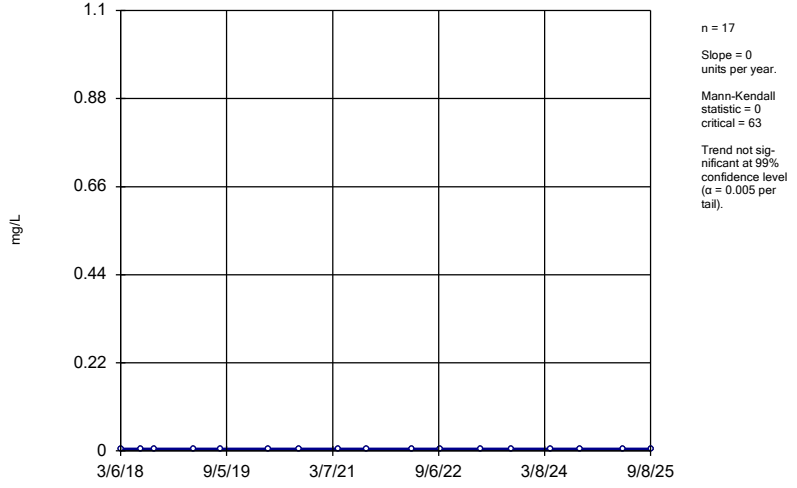
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Selenium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = 0
units per year.

Mann-Kendall
statistic = 0
critical = 63

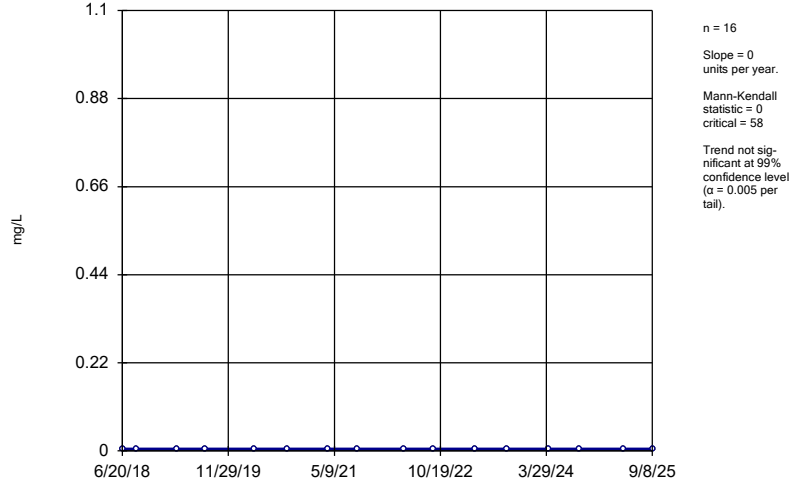
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Selenium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = 0
units per year.

Mann-Kendall
statistic = 0
critical = 58

Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

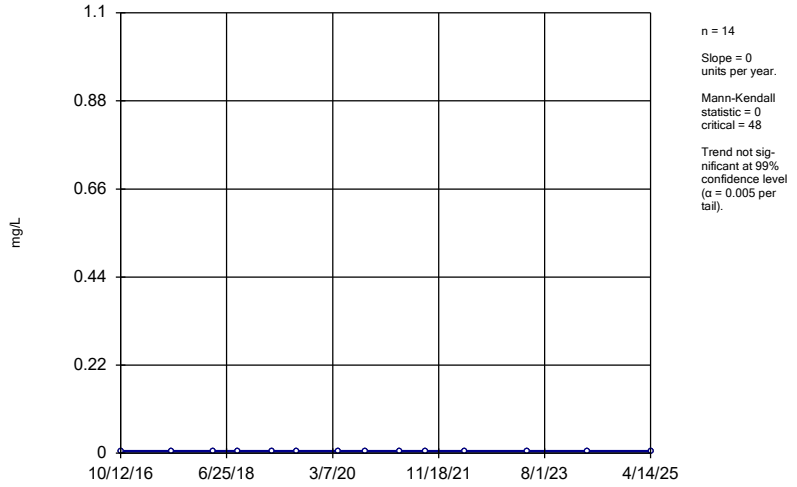
Constituent: Selenium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 48

Trend not significant at 99% confidence level (α = 0.005 per tail).

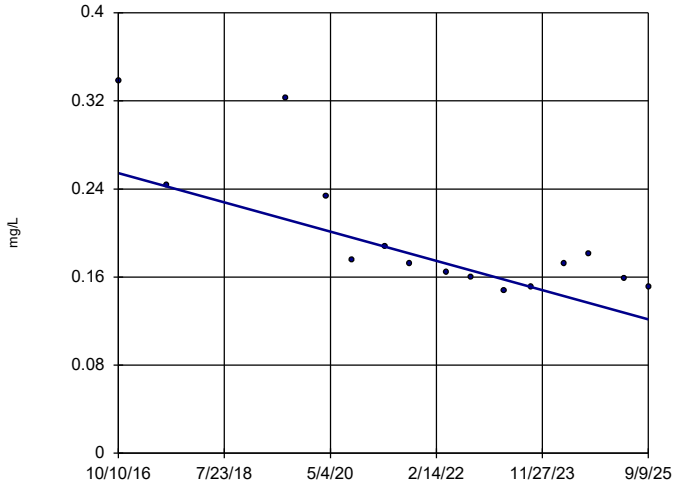
Constituent: Selenium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-08 (bg)



n = 15

Slope = -0.01488 units per year.

Mann-Kendall statistic = -69 critical = -53

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

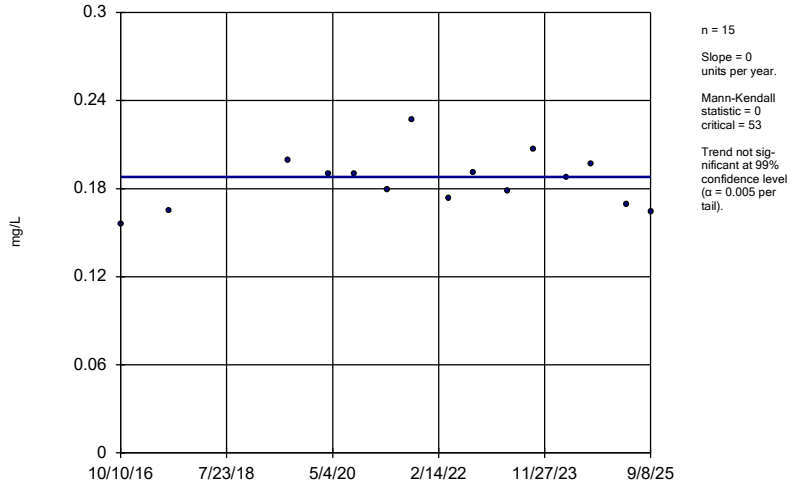
Constituent: Strontium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10 (bg)



n = 15

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 53

Trend not significant at 99% confidence level (α = 0.005 per tail).

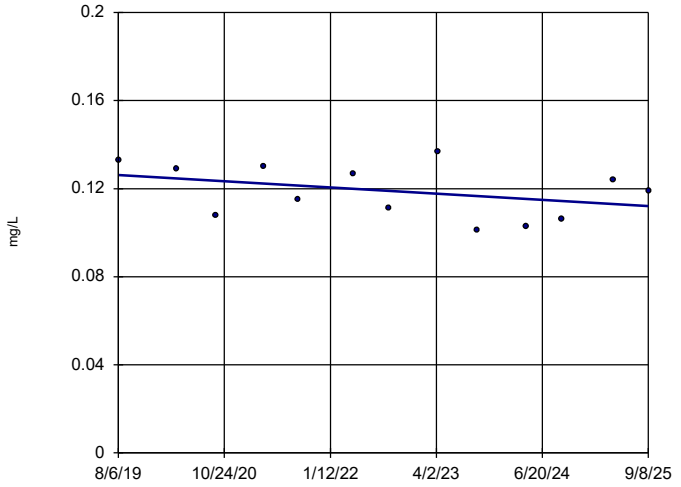
Constituent: Strontium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-22 (bg)



n = 13

Slope = -0.002315 units per year.

Mann-Kendall statistic = -22 critical = -43

Trend not significant at 99% confidence level (α = 0.005 per tail).

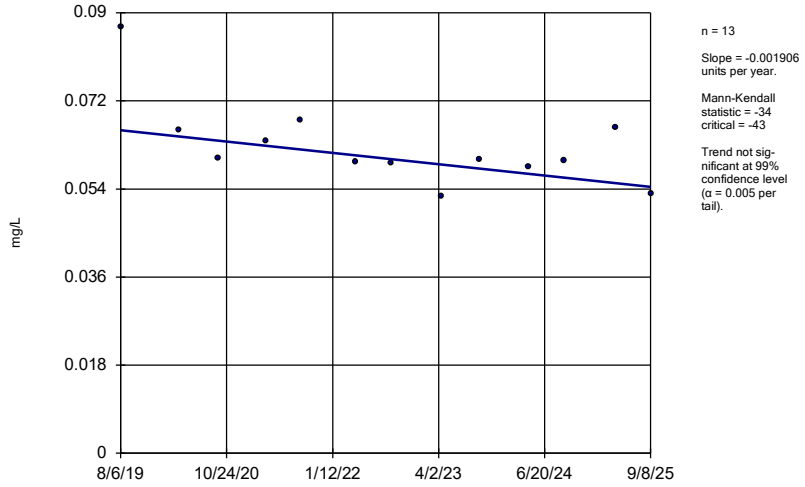
Constituent: Strontium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-23 (bg)



n = 13

Slope = -0.001906 units per year.

Mann-Kendall statistic = -34
critical = -43

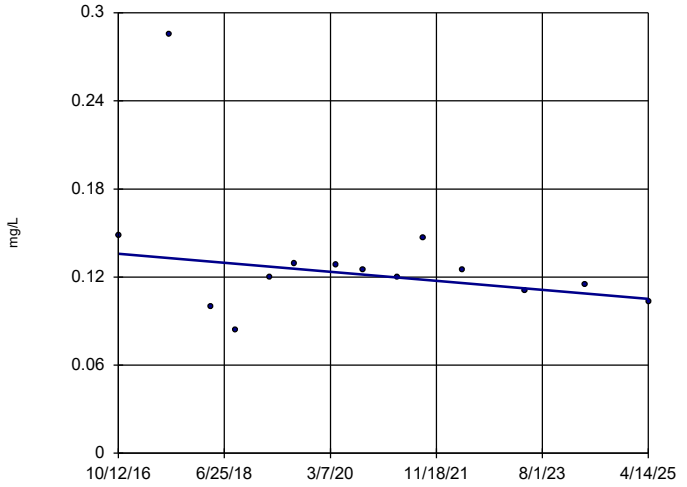
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Strontium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = -0.003632 units per year.

Mann-Kendall statistic = -25
critical = -48

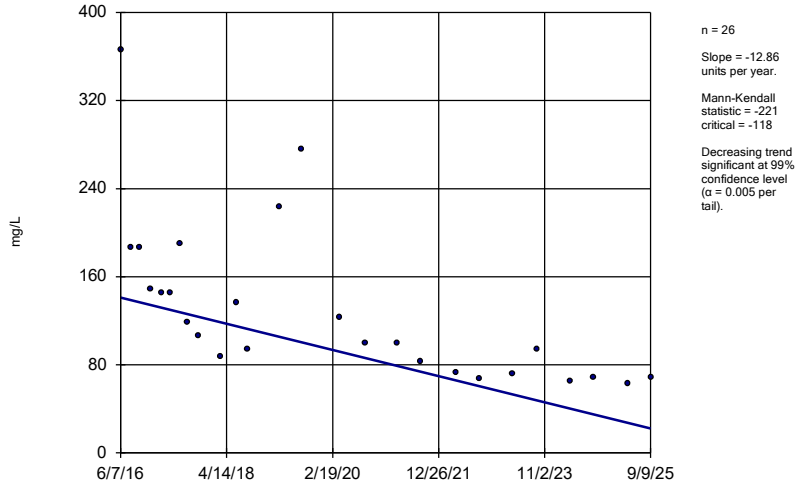
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Strontium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-08 (bg)



n = 26

Slope = -12.86 units per year.

Mann-Kendall statistic = -221
critical = -118

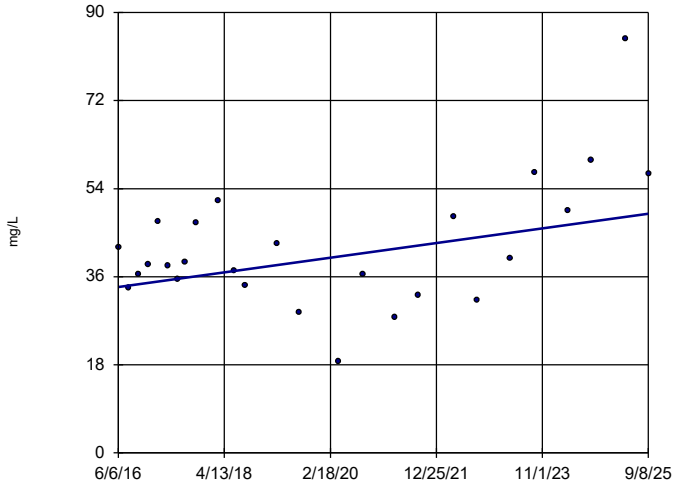
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10 (bg)



n = 26

Slope = 1.617 units per year.

Mann-Kendall statistic = 71
critical = 118

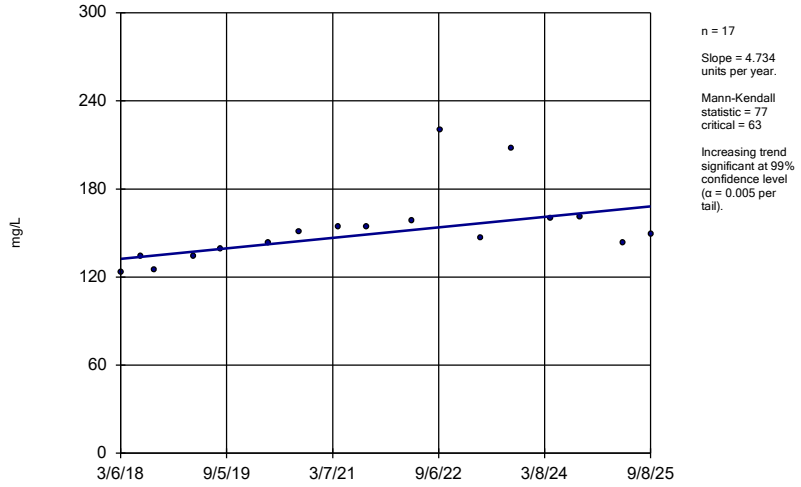
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = 4.734 units per year.

Mann-Kendall statistic = 77 critical = 63

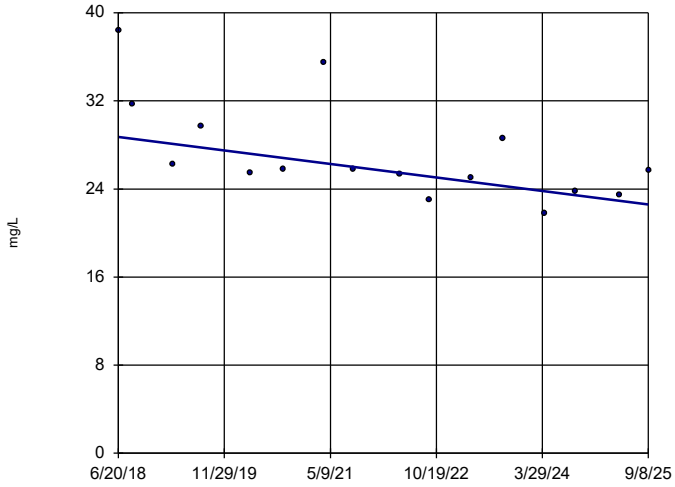
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = -0.8498 units per year.

Mann-Kendall statistic = -65 critical = -58

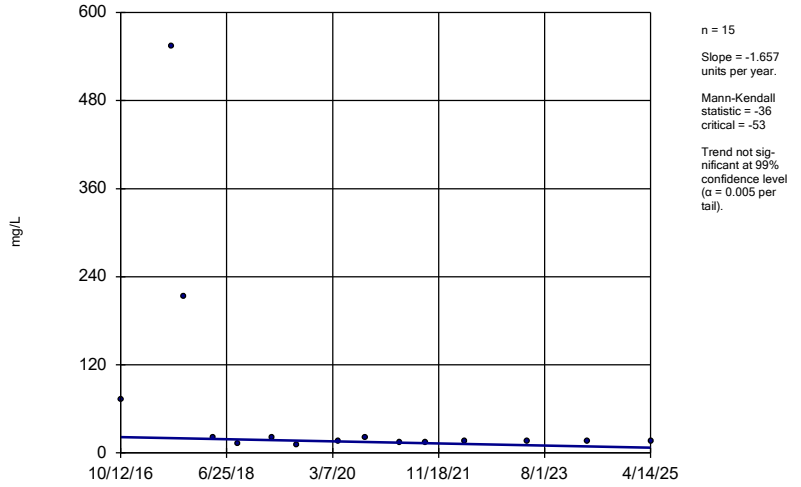
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

SW-22 (bg)



n = 15

Slope = -1.657 units per year.

Mann-Kendall statistic = -36 critical = -53

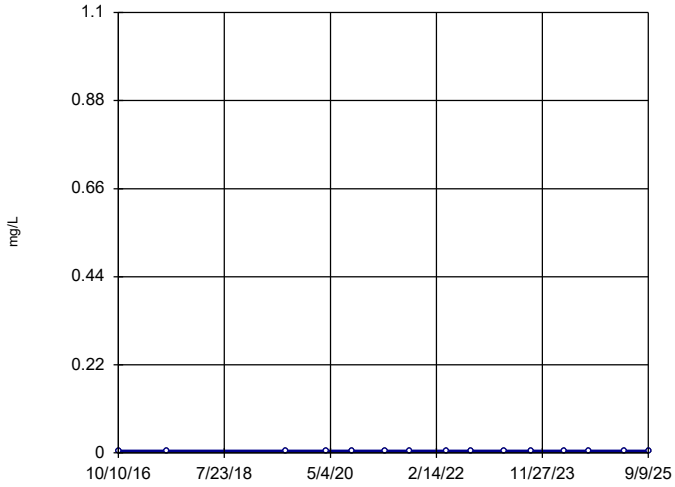
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 15

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 53

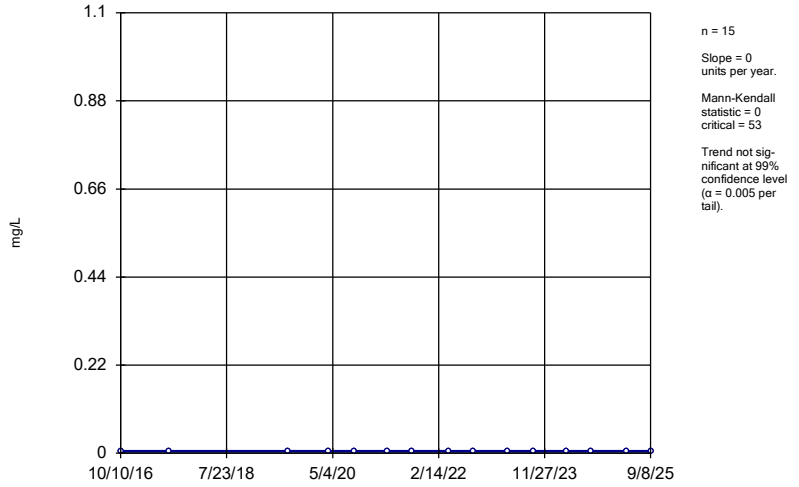
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Vanadium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 15

Slope = 0
units per year.

Mann-Kendall
statistic = 0
critical = 53

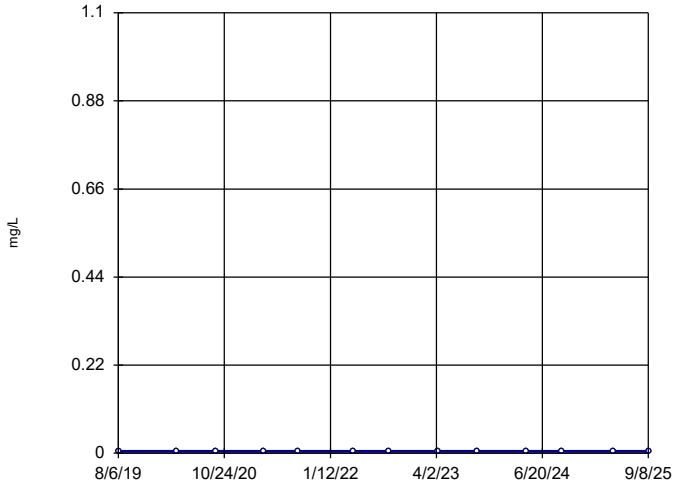
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Vanadium Analysis Run 12/15/2025 2:56 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 13

Slope = 0
units per year.

Mann-Kendall
statistic = 0
critical = 43

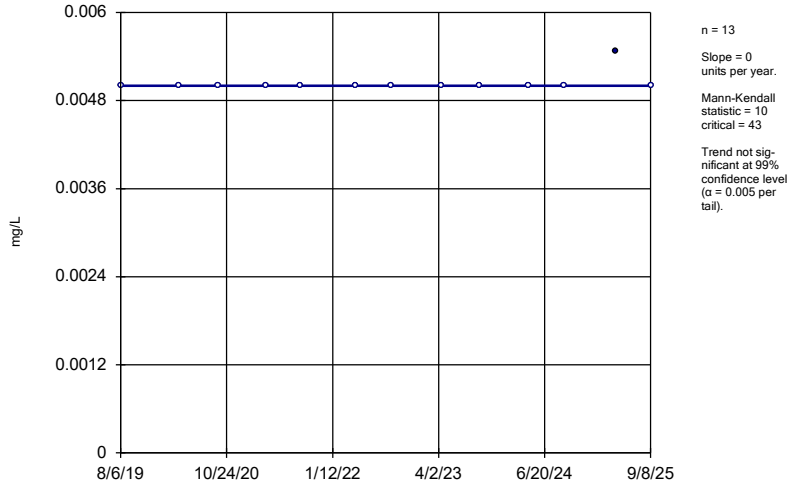
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Vanadium Analysis Run 12/15/2025 2:57 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 13

Slope = 0
units per year.

Mann-Kendall
statistic = 10
critical = 43

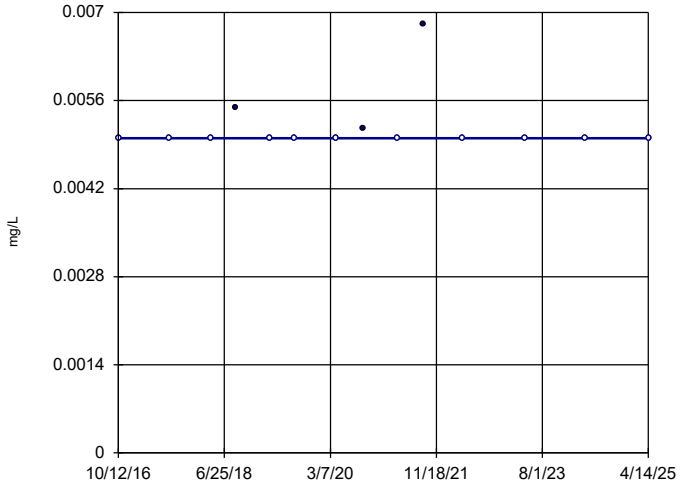
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Vanadium Analysis Run 12/15/2025 2:57 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0
units per year.

Mann-Kendall
statistic = 0
critical = 48

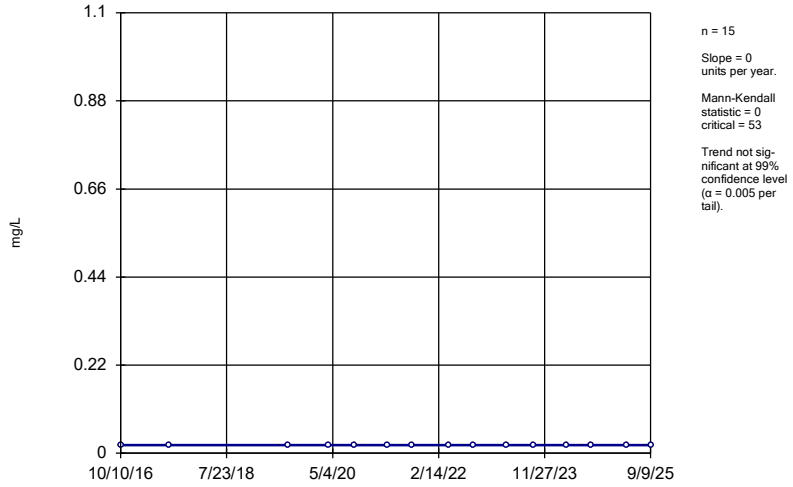
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Vanadium Analysis Run 12/15/2025 2:57 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)

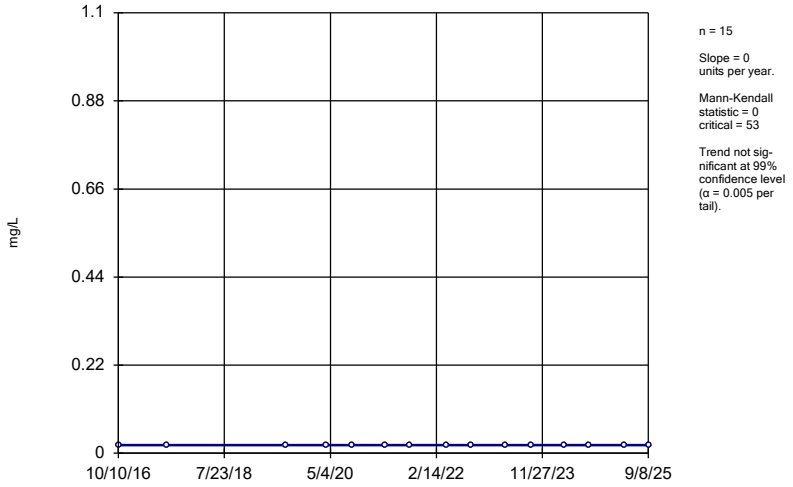


Constituent: Zinc Analysis Run 12/15/2025 2:57 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)

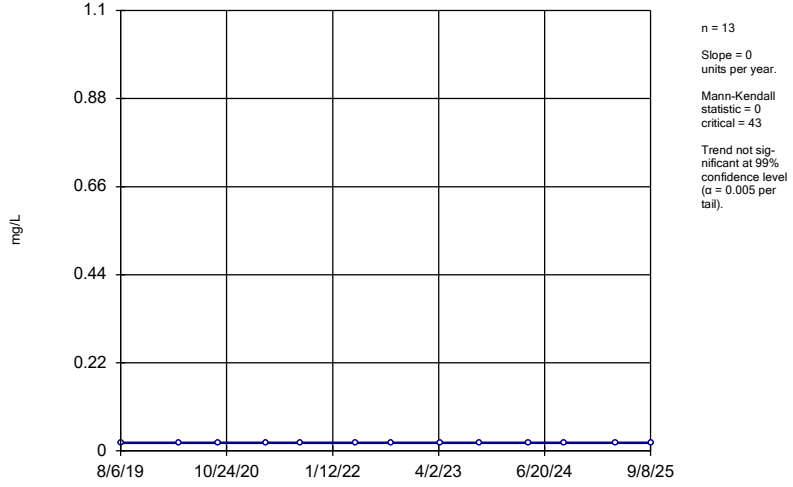


Constituent: Zinc Analysis Run 12/15/2025 2:57 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)

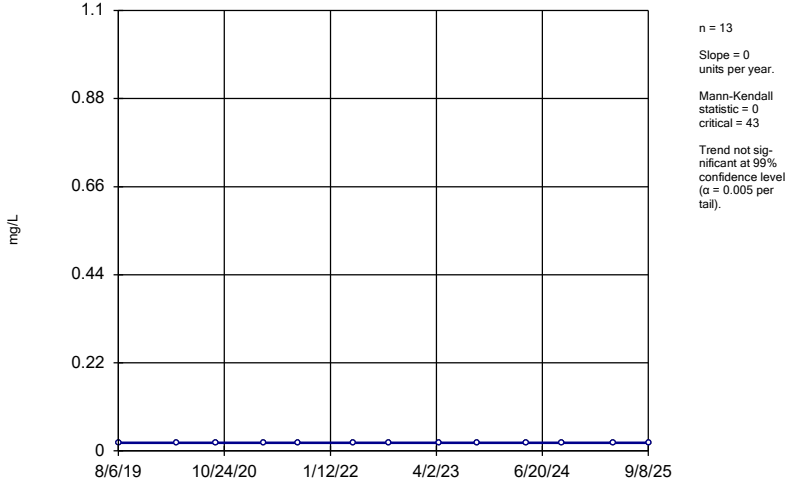


Constituent: Zinc Analysis Run 12/15/2025 2:57 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)

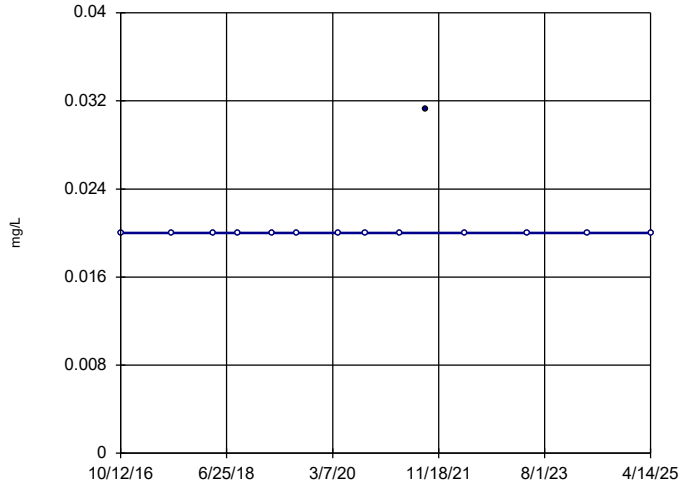


Constituent: Zinc Analysis Run 12/15/2025 2:57 PM View: State Upgradient Trend Testing
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0 units per year.

Mann-Kendall statistic = 5 critical = 48

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Zinc Analysis Run 12/15/2025 2:57 PM View: State Upgradient Trend Testing

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

FIGURE E.

Interwell Prediction Limits - Monitoring Wells (April 2025) - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:16 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**MW-14A**	**0.322**	**n/a**	**4/17/2025**	**15.4**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-15A**	**0.322**	**n/a**	**4/17/2025**	**8.16**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-21**	**0.322**	**n/a**	**4/16/2025**	**2.64**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-26**	**0.322**	**n/a**	**4/16/2025**	**3.4**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Calcium (mg/L)	**MW-14A**	**132**	**n/a**	**4/17/2025**	**286**	**Yes**	**80**	**0**	**n/a**	**0.0002975**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**MW-5B**	**30**	**n/a**	**4/18/2025**	**32.1**	**Yes**	**81**	**25.93**	**n/a**	**0.0002914**	**NP Inter (normality) 1 of 2**
Magnesium (mg/L)	**MW-14A**	**45.49**	**n/a**	**4/17/2025**	**134**	**Yes**	**52**	**0**	**x^(1/3)**	**0.0002787**	**Param Inter 1 of 2**
Magnesium (mg/L)	**MW-15A**	**45.49**	**n/a**	**4/17/2025**	**53.2**	**Yes**	**52**	**0**	**x^(1/3)**	**0.0002787**	**Param Inter 1 of 2**
Molybdenum (mg/L)	**MW-15A**	**0.00822**	**n/a**	**4/17/2025**	**0.0109**	**Yes**	**81**	**65.43**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Selenium (mg/L)	**MW-21**	**0.005**	**n/a**	**4/16/2025**	**0.00832**	**Yes**	**79**	**100**	**n/a**	**0.0003062**	**NP Inter (NDs) 1 of 2**
Sulfate (mg/L)	**MW-14A**	**366**	**n/a**	**4/17/2025**	**808**	**Yes**	**81**	**0**	**n/a**	**0.0002914**	**NP Inter (normality) 1 of 2**
Vanadium (mg/L)	**MW-27**	**0.00547**	**n/a**	**4/16/2025**	**0.00613**	**Yes**	**52**	**98.08**	**n/a**	**0.0006895**	**NP Inter (NDs) 1 of 2**

Interwell Prediction Limits - Monitoring Wells (April 2025) - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:16 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Aluminum (mg/L)	MW-14A	2.76	n/a	4/17/2025	0.104	No	52	75	n/a	0.0006895	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-26	2.76	n/a	4/16/2025	0.0503	No	52	75	n/a	0.0006895	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-27	2.76	n/a	4/16/2025	2.75	No	52	75	n/a	0.0006895	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-4B	2.76	n/a	4/18/2025	0.05ND	No	52	75	n/a	0.0006895	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-5B	2.76	n/a	4/18/2025	0.0574	No	52	75	n/a	0.0006895	NP Inter (NDs) 1 of 2
Arsenic (mg/L)	n/a	0.00784	n/a	n/a	9 future	n/a	79	55.7	n/a	0.0003062	NP Inter (NDs) 1 of 2
Barium (mg/L)	MW-14A	0.271	n/a	4/17/2025	0.0294	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-15A	0.271	n/a	4/17/2025	0.03	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-21	0.271	n/a	4/16/2025	0.046	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-24	0.271	n/a	4/16/2025	0.0973	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-26	0.271	n/a	4/16/2025	0.0617	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-27	0.271	n/a	4/16/2025	0.0607	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-4B	0.271	n/a	4/18/2025	0.157	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-5B	0.271	n/a	4/18/2025	0.256	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-6A	0.271	n/a	4/18/2025	0.231	No	79	0	n/a	0.0003062	NP Inter (normality) 1 of 2
Beryllium (mg/L)	n/a	0.001	n/a	n/a	9 future	n/a	79	100	n/a	0.0003062	NP Inter (NDs) 1 of 2
Boron (mg/L)	**MW-14A**	**0.322**	**n/a**	**4/17/2025**	**15.4**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-15A**	**0.322**	**n/a**	**4/17/2025**	**8.16**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-21**	**0.322**	**n/a**	**4/16/2025**	**2.64**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	MW-24	0.322	n/a	4/16/2025	0.1ND	No	81	85.19	n/a	0.0002914	NP Inter (NDs) 1 of 2
Boron (mg/L)	**MW-26**	**0.322**	**n/a**	**4/16/2025**	**3.4**	**Yes**	**81**	**85.19**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	MW-27	0.322	n/a	4/16/2025	0.244	No	81	85.19	n/a	0.0002914	NP Inter (NDs) 1 of 2
Boron (mg/L)	MW-4B	0.322	n/a	4/18/2025	0.169	No	81	85.19	n/a	0.0002914	NP Inter (NDs) 1 of 2
Calcium (mg/L)	**MW-14A**	**132**	**n/a**	**4/17/2025**	**286**	**Yes**	**80**	**0**	**n/a**	**0.0002975**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	MW-15A	132	n/a	4/17/2025	125	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-21	132	n/a	4/16/2025	87.4	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-24	132	n/a	4/16/2025	71.6	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-26	132	n/a	4/16/2025	114	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-27	132	n/a	4/16/2025	26.4	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-4B	132	n/a	4/18/2025	86.8	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-5B	132	n/a	4/18/2025	106	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-6A	132	n/a	4/18/2025	85.2	No	80	0	n/a	0.0002975	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-14A	30	n/a	4/17/2025	18	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-15A	30	n/a	4/17/2025	7.79	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-21	30	n/a	4/16/2025	10.9	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-24	30	n/a	4/16/2025	23.6	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-26	30	n/a	4/16/2025	17.2	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-27	30	n/a	4/16/2025	23	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-4B	30	n/a	4/18/2025	18.9	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Chloride (mg/L)	**MW-5B**	**30**	**n/a**	**4/18/2025**	**32.1**	**Yes**	**81**	**25.93**	**n/a**	**0.0002914**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	MW-6A	30	n/a	4/18/2025	15.8	No	81	25.93	n/a	0.0002914	NP Inter (normality) 1 of 2
Cobalt (mg/L)	MW-27	0.00558	n/a	4/16/2025	0.000855	No	80	38.75	n/a	0.0002975	NP Inter (normality) 1 of 2
Cobalt (mg/L)	MW-4B	0.00558	n/a	4/18/2025	0.00119	No	80	38.75	n/a	0.0002975	NP Inter (normality) 1 of 2
Copper (mg/L)	MW-26	0.005	n/a	4/16/2025	0.005ND	No	52	100	n/a	0.0006895	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-14A	1	n/a	4/17/2025	0.262	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-15A	1	n/a	4/17/2025	0.257	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-21	1	n/a	4/16/2025	0.154	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-24	1	n/a	4/16/2025	0.22	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-26	1	n/a	4/16/2025	0.181	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-4B	1	n/a	4/18/2025	0.268	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-5B	1	n/a	4/18/2025	0.193	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-6A	1	n/a	4/18/2025	0.303	No	80	85	n/a	0.0002975	NP Inter (NDs) 1 of 2
Iron (mg/L)	MW-14A	4.38	n/a	4/17/2025	0.163	No	52	32.69	n/a	0.0006895	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-26	4.38	n/a	4/16/2025	0.1ND	No	52	32.69	n/a	0.0006895	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-27	4.38	n/a	4/16/2025	2.37	No	52	32.69	n/a	0.0006895	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-4B	4.38	n/a	4/18/2025	0.31	No	52	32.69	n/a	0.0006895	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-5B	4.38	n/a	4/18/2025	2.25	No	52	32.69	n/a	0.0006895	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-6A	4.38	n/a	4/18/2025	3.2	No	52	32.69	n/a	0.0006895	NP Inter (normality) 1 of 2
Lead (mg/L)	MW-21	0.00204	n/a	4/16/2025	0.0005ND	No	79	89.87	n/a	0.0003062	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-27	0.00204	n/a	4/16/2025	0.00108	No	79	89.87	n/a	0.0003062	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-4B	0.00204	n/a	4/18/2025	0.0005ND	No	79	89.87	n/a	0.0003062	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-5B	0.00204	n/a	4/18/2025	0.0005ND	No	79	89.87	n/a	0.0003062	NP Inter (NDs) 1 of 2
Magnesium (mg/L)	**MW-14A**	**45.49**	**n/a**	**4/17/2025**	**134**	**Yes**	**52**	**0**	**x^(1/3)**	**0.0002787**	**Param Inter 1 of 2**
Magnesium (mg/L)	**MW-15A**	**45.49**	**n/a**	**4/17/2025**	**53.2**	**Yes**	**52**	**0**	**x^(1/3)**	**0.0002787**	**Param Inter 1 of 2**
Magnesium (mg/L)	MW-21	45.49	n/a	4/16/2025	40.5	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-24	45.49	n/a	4/16/2025	32.7	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-26	45.49	n/a	4/16/2025	43.3	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-27	45.49	n/a	4/16/2025	13	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2

Interwell Prediction Limits - Monitoring Wells (April 2025) - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:16 PM

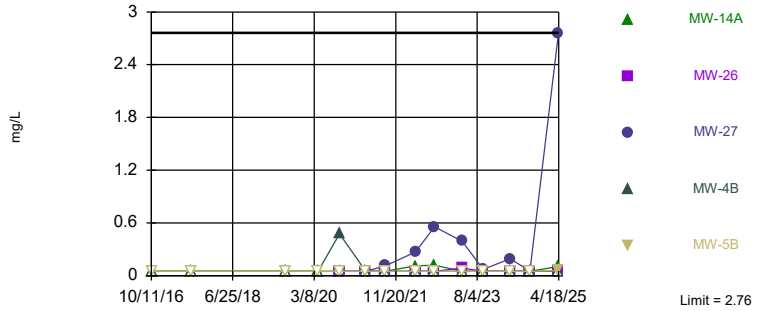
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Magnesium (mg/L)	MW-4B	45.49	n/a	4/18/2025	32.3	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-5B	45.49	n/a	4/18/2025	36.3	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-6A	45.49	n/a	4/18/2025	28.8	No	52	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-14A	1.163	n/a	4/17/2025	0.005ND	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-24	1.163	n/a	4/16/2025	0.0166	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-26	1.163	n/a	4/16/2025	0.0423	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-27	1.163	n/a	4/16/2025	0.094	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-4B	1.163	n/a	4/18/2025	0.241	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-5B	1.163	n/a	4/18/2025	0.478	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-6A	1.163	n/a	4/18/2025	0.111	No	51	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Molybdenum (mg/L)	MW-14A	0.00822	n/a	4/17/2025	0.00322	No	81	65.43	n/a	0.0002914	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	**MW-15A**	**0.00822**	**n/a**	**4/17/2025**	**0.0109**	**Yes**	**81**	**65.43**	**n/a**	**0.0002914**	**NP Inter (NDs) 1 of 2**
Molybdenum (mg/L)	MW-21	0.00822	n/a	4/16/2025	0.002ND	No	81	65.43	n/a	0.0002914	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-24	0.00822	n/a	4/16/2025	0.002ND	No	81	65.43	n/a	0.0002914	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-26	0.00822	n/a	4/16/2025	0.002ND	No	81	65.43	n/a	0.0002914	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-4B	0.00822	n/a	4/18/2025	0.002ND	No	81	65.43	n/a	0.0002914	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-5B	0.00822	n/a	4/18/2025	0.002ND	No	81	65.43	n/a	0.0002914	NP Inter (NDs) 1 of 2
Nickel (mg/L)	MW-21	0.00628	n/a	4/16/2025	0.005ND	No	52	98.08	n/a	0.0006895	NP Inter (NDs) 1 of 2
Nickel (mg/L)	MW-4B	0.00628	n/a	4/18/2025	0.005ND	No	52	98.08	n/a	0.0006895	NP Inter (NDs) 1 of 2
Selenium (mg/L)	MW-14A	0.005	n/a	4/17/2025	0.005ND	No	79	100	n/a	0.0003062	NP Inter (NDs) 1 of 2
Selenium (mg/L)	MW-15A	0.005	n/a	4/17/2025	0.005ND	No	79	100	n/a	0.0003062	NP Inter (NDs) 1 of 2
Selenium (mg/L)	**MW-21**	**0.005**	**n/a**	**4/16/2025**	**0.00832**	**Yes**	**79**	**100**	**n/a**	**0.0003062**	**NP Inter (NDs) 1 of 2**
Strontium (mg/L)	MW-14A	0.3222	n/a	4/17/2025	0.229	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-15A	0.3222	n/a	4/17/2025	0.107	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-21	0.3222	n/a	4/16/2025	0.173	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-24	0.3222	n/a	4/16/2025	0.0806	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-26	0.3222	n/a	4/16/2025	0.119	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-27	0.3222	n/a	4/16/2025	0.067	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-4B	0.3222	n/a	4/18/2025	0.0917	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-5B	0.3222	n/a	4/18/2025	0.159	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-6A	0.3222	n/a	4/18/2025	0.175	No	52	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Sulfate (mg/L)	**MW-14A**	**366**	**n/a**	**4/17/2025**	**808**	**Yes**	**81**	**0**	**n/a**	**0.0002914**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	MW-15A	366	n/a	4/17/2025	309	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-21	366	n/a	4/16/2025	230	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-24	366	n/a	4/16/2025	40.5	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-26	366	n/a	4/16/2025	269	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-27	366	n/a	4/16/2025	11.4	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-4B	366	n/a	4/18/2025	50.8	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-5B	366	n/a	4/18/2025	35.7	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-6A	366	n/a	4/18/2025	18.5	No	81	0	n/a	0.0002914	NP Inter (normality) 1 of 2
Vanadium (mg/L)	**MW-27**	**0.00547**	**n/a**	**4/16/2025**	**0.00613**	**Yes**	**52**	**98.08**	**n/a**	**0.0006895**	**NP Inter (NDs) 1 of 2**
Zinc (mg/L)	MW-14A	0.02	n/a	4/17/2025	0.02ND	No	52	100	n/a	0.0006895	NP Inter (NDs) 1 of 2

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



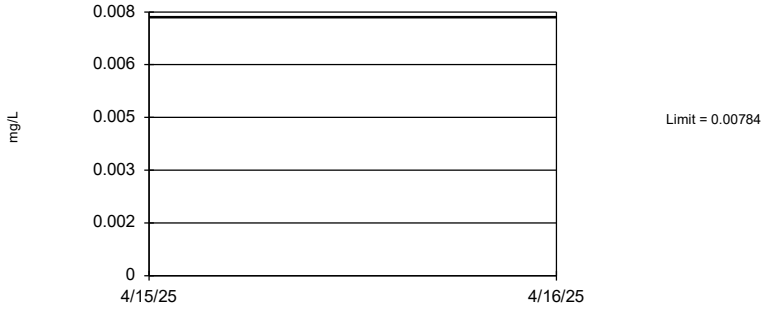
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 52 background values. 75% NDs. Annual per-constituent alpha = 0.01234. Individual comparison alpha = 0.0006895 (1 of 2). Comparing 5 points to limit. Assumes 4 future values.

Constituent: Aluminum Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 79 background values. 55.7% NDs. Annual per-constituent alpha = 0.005498. Individual comparison alpha = 0.0003062 (1 of 2). Assumes 9 future values.

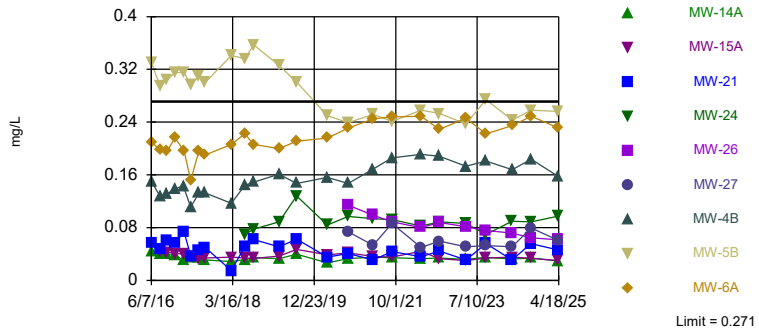
Constituent: Arsenic Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Within Limit

Prediction Limit

Interwell Non-parametric



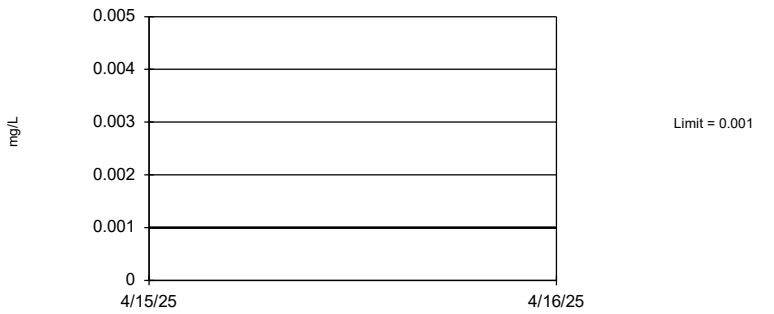
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 79 background values. Annual per-constituent alpha = 0.005498. Individual comparison alpha = 0.0003062 (1 of 2). Comparing 9 points to limit.

Constituent: Barium Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 79) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.005498. Individual comparison alpha = 0.0003062 (1 of 2). Assumes 9 future values.

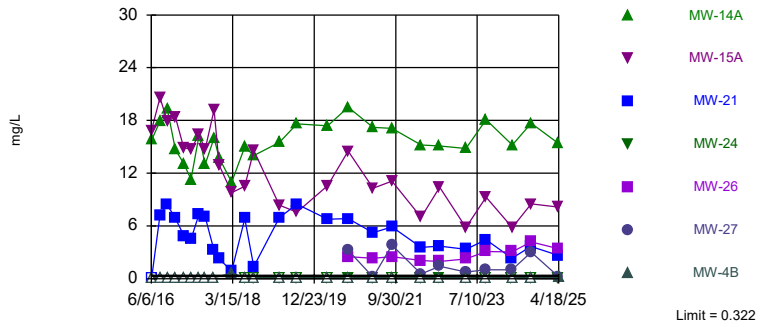
Constituent: Beryllium Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Exceeds Limit: MW-14A, MW-15A, MW-21, MW-26

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 81 background values. 85.19% NDs. Annual per-constituent alpha = 0.005232. Individual comparison alpha = 0.0002914 (1 of 2). Comparing 7 points to limit. Assumes 2 future values.

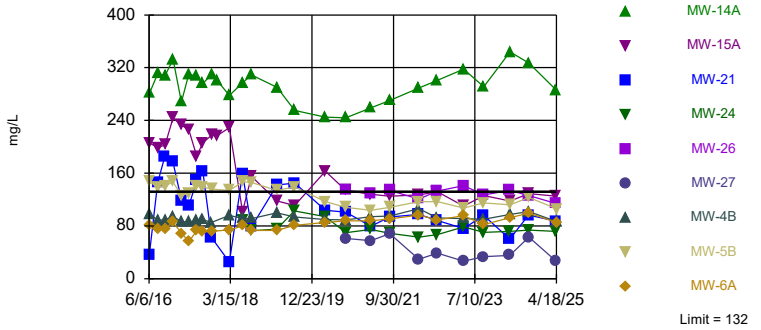
Constituent: Boron Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Exceeds Limit: MW-14A

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 80 background values. Annual per-constituent alpha = 0.005341. Individual comparison alpha = 0.0002975 (1 of 2). Comparing 9 points to limit.

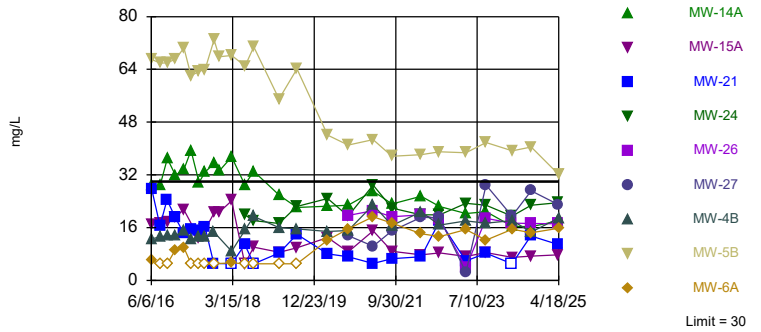
Constituent: Calcium Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Exceeds Limit: MW-5B

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. 25.93% NDs. Annual per-constituent alpha = 0.005232. Individual comparison alpha = 0.0002914 (1 of 2). Comparing 9 points to limit.

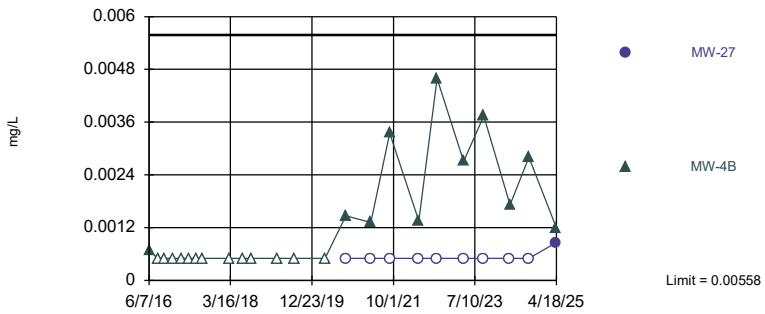
Constituent: Chloride Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



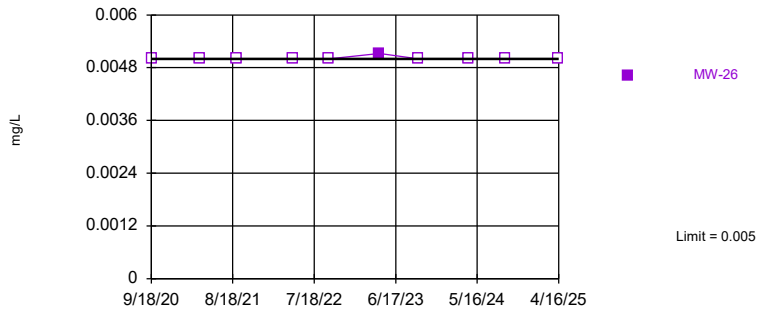
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 80 background values. 38.75% NDs. Annual per-constituent alpha = 0.005341. Individual comparison alpha = 0.0002975 (1 of 2). Comparing 2 points to limit. Assumes 7 future values.

Constituent: Cobalt Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Interwell Non-parametric



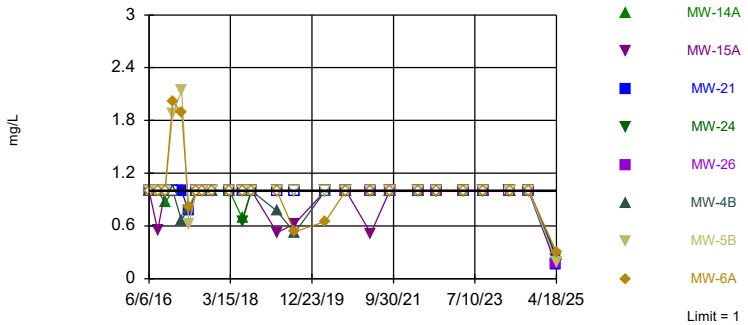
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 52) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.01234. Individual comparison alpha = 0.0006895 (1 of 2). Assumes 8 future values.

Constituent: Copper Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Interwell Non-parametric



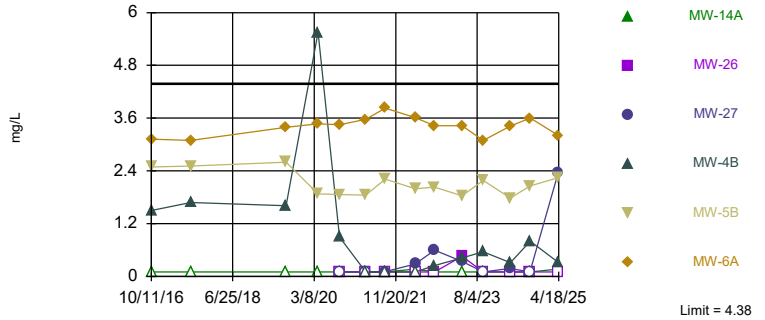
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 80 background values. 85% NDs. Annual per-constituent alpha = 0.005341. Individual comparison alpha = 0.0002975 (1 of 2). Comparing 8 points to limit. Assumes 1 future value.

Constituent: Fluoride Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Interwell Non-parametric



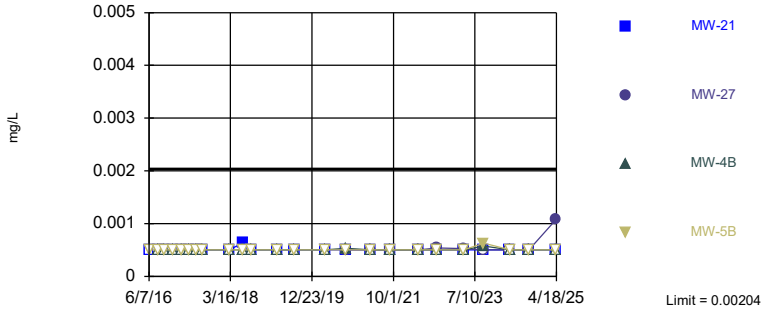
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 52 background values. 32.69% NDs. Annual per-constituent alpha = 0.01234. Individual comparison alpha = 0.0006895 (1 of 2). Comparing 6 points to limit. Assumes 3 future values.

Constituent: Iron Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 79 background values. 89.87% NDs. Annual per-constituent alpha = 0.005498. Individual comparison alpha = 0.0003062 (1 of 2). Comparing 4 points to limit. Assumes 5 future values.

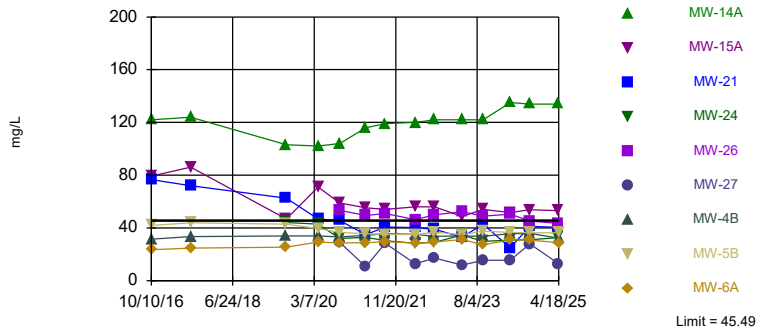
Constituent: Lead Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Exceeds Limit: MW-14A, MW-15A

Prediction Limit

Interwell Parametric



Background Data Summary (based on cube root transformation): Mean=3.167, Std. Dev.=0.1765, n=52. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.938, critical = 0.937. Kappa = 2.285 (c=21, w=9, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0002787. Comparing 9 points to limit.

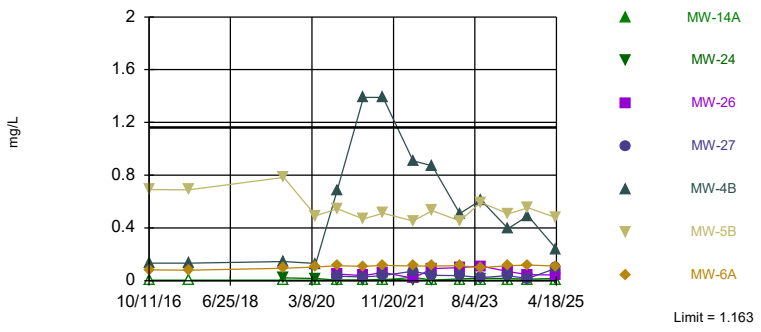
Constituent: Magnesium Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.4959, Std. Dev.=0.2546, n=51. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9586, critical = 0.935. Kappa = 2.288 (c=21, w=9, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0002787. Comparing 7 points to limit. Assumes 2 future values.

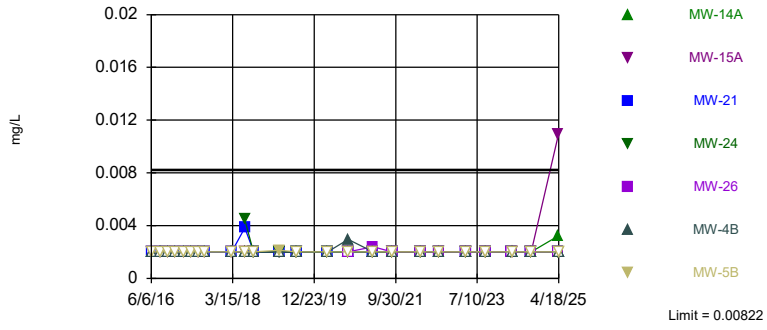
Constituent: Manganese Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Exceeds Limit: MW-15A

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 81 background values. 65.43% NDs. Annual per-constituent alpha = 0.005232. Individual comparison alpha = 0.0002914 (1 of 2). Comparing 7 points to limit. Assumes 2 future values.

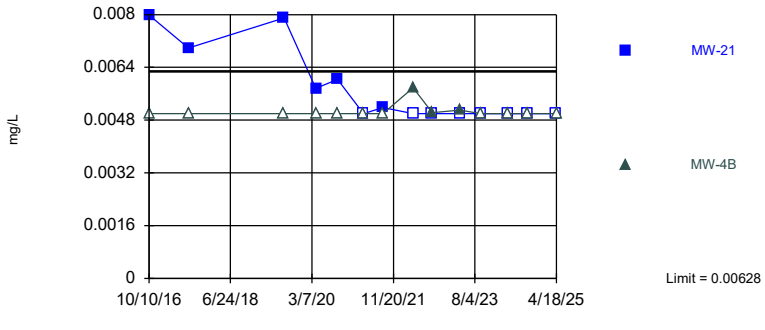
Constituent: Molybdenum Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 52 background values. 98.08% NDs. Annual per-constituent alpha = 0.01234. Individual comparison alpha = 0.0006895 (1 of 2). Comparing 2 points to limit. Assumes 7 future values.

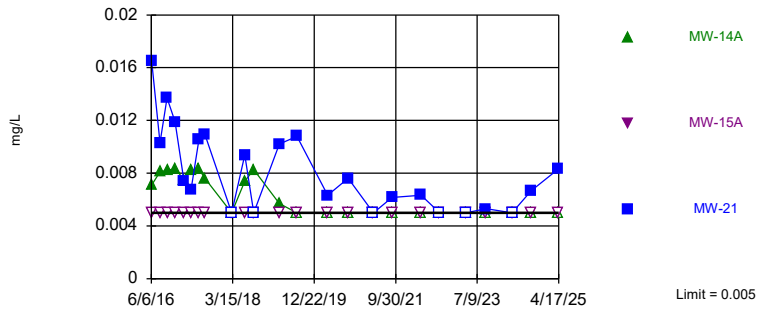
Constituent: Nickel Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Exceeds Limit: MW-21

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 79) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.005498. Individual comparison alpha = 0.0003062 (1 of 2). Comparing 3 points to limit. Assumes 6 future values.

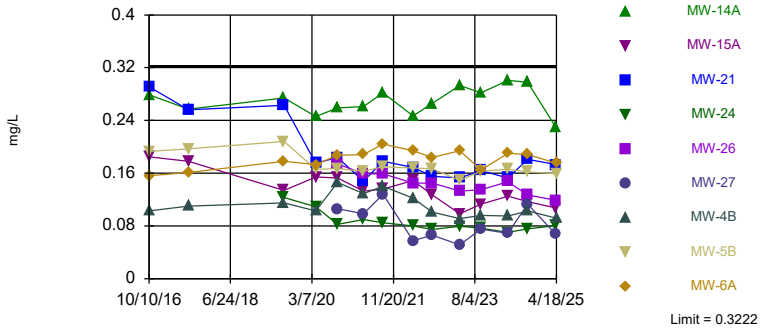
Constituent: Selenium Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.3729, Std. Dev.=0.0852, n=52. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9527, critical = 0.937. Kappa = 2.285 (c=21, w=9, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0002787. Comparing 9 points to limit.

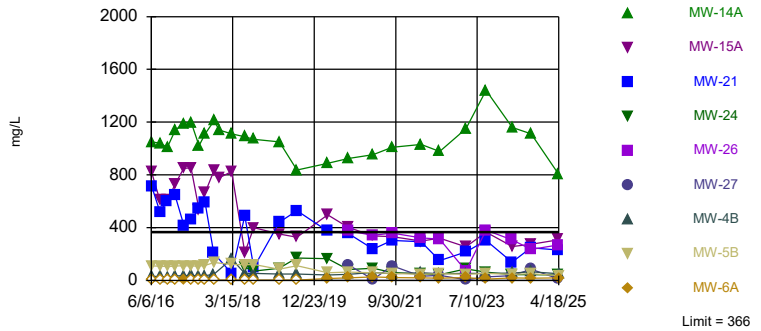
Constituent: Strontium Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Exceeds Limit: MW-14A

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 81 background values. Annual per-constituent alpha = 0.005232. Individual comparison alpha = 0.0002914 (1 of 2). Comparing 9 points to limit.

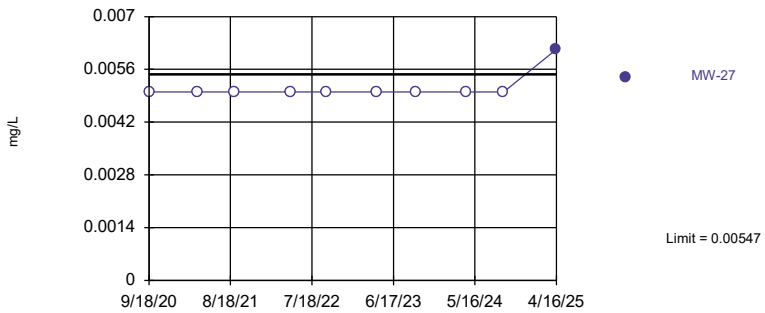
Constituent: Sulfate Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Exceeds Limit: MW-27

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 52 background values. 98.08% NDs. Annual per-constituent alpha = 0.01234. Individual comparison alpha = 0.0006895 (1 of 2). Assumes 8 future values.

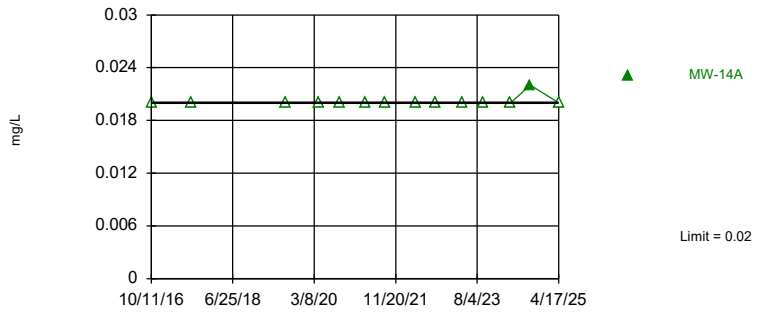
Constituent: Vanadium Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 52) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.01234. Individual comparison alpha = 0.0006895 (1 of 2). Assumes 8 future values.

Constituent: Zinc Analysis Run 12/15/2025 3:03 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Prediction Limit

Constituent: Aluminum (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-4B	MW-5B	MW-23 (bg)	MW-22 (bg)	MW-26	MW-27
10/10/2016	<0.05	0.0826							
10/11/2016			<0.05	<0.05	<0.05				
8/7/2017	<0.05	<0.05		<0.05					
8/8/2017			<0.05		<0.05				
8/6/2019	<0.05					0.253	<0.05		
8/7/2019		<0.05	<0.05	<0.05	<0.05				
4/7/2020	<0.05	<0.05	<0.05	<0.05	<0.05	0.552	<0.05		
9/18/2020	<0.05	<0.05	<0.05	0.475	<0.05	<0.05	<0.05	<0.05	<0.05
4/5/2021	<0.05	<0.05	<0.05	<0.05	<0.05	0.39	<0.05	<0.05	<0.05
9/1/2021	<0.05	<0.05	<0.05	<0.05	<0.05	0.135	<0.05	<0.05	0.112
4/20/2022	<0.05	<0.05	0.111	<0.05	<0.05	0.478	<0.05	<0.05	0.27
9/14/2022	<0.05	<0.05	0.119	<0.05	<0.05	0.142	<0.05	<0.05	0.558
4/10/2023							<0.05		
4/11/2023	<0.05		<0.05						
4/12/2023		<0.05		<0.05	<0.05	0.233		0.0884	0.394
9/18/2023		<0.05				0.105	<0.05		
9/19/2023	<0.05		<0.05						
9/20/2023				<0.05	<0.05			<0.05	0.0737
4/11/2024		<0.05				0.243	<0.05		
4/12/2024	<0.05							<0.05	0.191
4/15/2024			<0.05	<0.05	<0.05				
9/10/2024		<0.05				0.168	<0.05		
9/11/2024	<0.05		<0.05					<0.05	0.0529
9/12/2024				<0.05	<0.05				
4/15/2025						2.76	0.139		
4/16/2025	<0.05	<0.05						0.0503	2.75
4/17/2025			0.104						
4/18/2025				<0.05	0.0574				

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-08 (bg)	MW-22 (bg)	MW-23 (bg)
6/6/2016	0.00298			
6/7/2016		<0.002		
8/15/2016	0.00369			
8/16/2016		<0.002		
10/10/2016	0.00328	<0.002		
12/14/2016	0.00312	<0.002		
2/17/2017	0.00298			
2/21/2017		<0.002		
4/17/2017	<0.002	<0.002		
6/19/2017	0.00262	<0.002		
8/7/2017	0.00317	<0.002		
3/5/2018	<0.002			
3/6/2018		<0.002	<0.002	
6/19/2018	0.00211	<0.002	0.00245	
6/20/2018				<0.002
8/27/2018	0.0036	<0.002	0.00261	<0.002
3/18/2019		<0.002		
3/19/2019	0.0056		<0.002	<0.002
8/6/2019		<0.002	<0.002	<0.002
8/7/2019	0.00784			
4/7/2020	0.00697	<0.002	<0.002	<0.002
9/18/2020	0.00748	<0.002	<0.002	<0.002
4/5/2021	0.00393	<0.002	0.00289	<0.002
9/1/2021	0.00781	<0.002	0.00267	<0.002
4/20/2022	0.00371	<0.002	0.0034	<0.002
9/14/2022	0.00497	<0.002	0.00285	<0.002
4/10/2023			0.00421	
4/11/2023		0.00247		
4/12/2023	0.00224			<0.002
9/18/2023	0.00501		0.00421	<0.002
9/19/2023		<0.002		
4/11/2024	<0.002		0.00634	<0.002
4/12/2024		0.0039		
9/10/2024	0.00525		0.00749	<0.002
9/11/2024		0.00466		
4/15/2025			0.00671	<0.002
4/16/2025	<0.002	0.0045		

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-4B	MW-5B	MW-6A	MW-08 (bg)	MW-14A	MW-21	MW-15A	MW-22 (bg)
6/6/2016	0.168							2.13 (o)	
6/7/2016		0.15	0.331	0.209	0.0861				
6/8/2016						0.0443	0.0573		
8/15/2016	0.161					0.0402	0.0482	0.044	
8/16/2016		0.128	0.295	0.199	0.0671				
10/10/2016	0.163				0.0706		0.0606		
10/11/2016		0.131	0.304	0.196		0.0391		0.0426	
12/12/2016		0.139	0.315	0.216			0.056		
12/14/2016	0.15				0.0645	0.0383		0.0406	
2/17/2017	0.151	0.143				0.0306		0.0402	
2/21/2017			0.316	0.197	0.0594 (F1)		0.0735		
4/17/2017	0.138	0.111	0.296	0.152	0.0636	0.0341		0.0364	
4/18/2017							0.0356		
6/19/2017	0.154				0.076				
6/20/2017		0.133	0.31				0.0461		
6/21/2017				0.197		0.0338		0.0327	
8/7/2017	0.157	0.133			0.0596				
8/8/2017			0.3	0.19		0.031	0.0499	0.0338	
3/5/2018	0.129								
3/6/2018		0.117	0.341	0.206	0.0617		0.0148		0.15
3/7/2018						0.0285		0.0352	
6/19/2018	0.162				0.0761		0.0515		0.184
6/20/2018						0.0314		0.0338	
6/21/2018		0.144	0.336	0.222					
8/27/2018	0.216				0.0649				0.181
8/28/2018		0.149					0.0622		
8/29/2018			0.357	0.206		0.0344		0.0335	
3/18/2019					0.0751				
3/19/2019	0.185	0.161	0.326	0.2					0.209
3/20/2019						0.0328	0.0511	0.037	
8/6/2019					0.0733				0.215
8/7/2019	0.215	0.147	0.301	0.211		0.0398	0.0624	0.047	
4/7/2020	0.199	0.156	0.25	0.216	0.0613	0.0266	0.0352	0.0389	0.222
9/18/2020	0.227	0.147	0.239	0.231	0.0549	0.0328	0.0407	0.0416	0.222
4/5/2021	0.196	0.169	0.252	0.245	0.0596	0.0355	0.0309	0.0365	0.242
9/1/2021	0.233	0.186	0.241	0.248	0.0623	0.0345	0.0434	0.0355	0.247
4/20/2022	0.208	0.191	0.258	0.249	0.0631	0.0327	0.036	0.0443	0.239
9/14/2022	0.223	0.188	0.253	0.229	0.0703	0.034	0.0447	0.0327	0.243
4/10/2023									0.227
4/11/2023					0.07	0.032	0.031	0.0299	
4/12/2023	0.19	0.173	0.237	0.246					
9/18/2023	0.233								0.256
9/19/2023					0.0782	0.0348	0.0559	0.0338	
9/20/2023		0.181	0.274	0.222					
4/11/2024	0.193								0.271
4/12/2024					0.0857		0.031		
4/15/2024		0.168	0.243	0.235		0.0323		0.0353	
9/10/2024	0.219						0.0555		0.268
9/11/2024					0.0944	0.0338		0.0335	
9/12/2024		0.184	0.258	0.249					
4/15/2025									0.247
4/16/2025	0.19				0.0867		0.046		

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-4B	MW-5B	MW-6A	MW-08 (bg)	MW-14A	MW-21	MW-15A	MW-22 (bg)
4/17/2025						0.0294		0.03	
4/18/2025		0.157	0.256	0.231					

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-23 (bg)	MW-24	MW-26	MW-27
6/6/2016				
6/7/2016				
6/8/2016				
8/15/2016				
8/16/2016				
10/10/2016				
10/11/2016				
12/12/2016				
12/14/2016				
2/17/2017				
2/21/2017				
4/17/2017				
4/18/2017				
6/19/2017				
6/20/2017				
6/21/2017				
8/7/2017				
8/8/2017				
3/5/2018				
3/6/2018				
3/7/2018				
6/19/2018				
6/20/2018	0.106	0.0695		
6/21/2018				
8/27/2018	0.0779	0.0776		
8/28/2018				
8/29/2018				
3/18/2019		0.0889		
3/19/2019	0.0922			
3/20/2019				
8/6/2019	0.0635	0.128		
8/7/2019				
4/7/2020	0.0654	0.084		
9/18/2020	0.0491	0.0969	0.114	0.0738
4/5/2021	0.0608	0.0936	0.0989	0.0534
9/1/2021	0.0497	0.0922	0.0889	0.0862
4/20/2022	0.0572	0.0826	0.0802	0.0498
9/14/2022	0.0507	0.0887	0.0876	0.0594
4/10/2023				
4/11/2023		0.0863		
4/12/2023	0.0518		0.0815	0.0508
9/18/2023	0.0533			
9/19/2023		0.0698		
9/20/2023			0.0755	0.053
4/11/2024	0.0547			
4/12/2024		0.0899	0.0716	0.0511
4/15/2024				
9/10/2024	0.0521			
9/11/2024		0.0885	0.0643	0.0795
9/12/2024				
4/15/2025	0.067			
4/16/2025		0.0973	0.0617	0.0607

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-23 (bg)	MW-24	MW-26	MW-27
4/17/2025				
4/18/2025				

Prediction Limit

Constituent: Beryllium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-08 (bg)	MW-22 (bg)	MW-23 (bg)
6/6/2016	<0.001			
6/7/2016		<0.001		
8/15/2016	<0.001			
8/16/2016		<0.001		
10/10/2016	<0.001	<0.001		
12/14/2016	<0.001	<0.001		
2/17/2017	<0.001			
2/21/2017		<0.001		
4/17/2017	<0.001	<0.001		
6/19/2017	<0.001	<0.001		
8/7/2017	<0.001	<0.001		
3/5/2018	<0.001			
3/6/2018		<0.001	<0.001	
6/19/2018	<0.001	<0.001	<0.001	
6/20/2018				<0.001
8/27/2018	<0.001	<0.001	<0.001	<0.001
3/18/2019		<0.001		
3/19/2019	<0.001		<0.001	<0.001
8/6/2019		<0.001	<0.001	<0.001
8/7/2019	<0.001			
4/7/2020	<0.001	<0.001	<0.001	<0.001
9/18/2020	<0.001	<0.001	<0.001	<0.001
4/5/2021	<0.001	<0.001	<0.001	<0.001
9/1/2021	<0.001	<0.001	<0.001	<0.001
4/20/2022	<0.001	<0.001	<0.001	<0.001
9/14/2022	<0.001	<0.001	<0.001	<0.001
4/10/2023			<0.001	
4/11/2023		<0.001		
4/12/2023	<0.001			<0.001
9/18/2023	<0.001		<0.001	<0.001
9/19/2023		<0.001		
4/11/2024	<0.001		<0.001	<0.001
4/12/2024		<0.001		
9/10/2024	<0.001		<0.001	<0.001
9/11/2024		<0.001		
4/15/2025			<0.001	<0.001
4/16/2025	<0.001	<0.001		

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-08 (bg)	MW-4B	MW-21	MW-14A	MW-22 (bg)	MW-24	MW-23 (bg)
6/6/2016	16.8	<0.1							
6/7/2016			<0.1	<0.1					
6/8/2016					<0.1	15.8			
8/15/2016	20.6	<0.1			7.23	17.9			
8/16/2016			<0.1	<0.1					
10/10/2016		<0.1	<0.1		8.45				
10/11/2016	17.9			<0.1		19.3			
12/12/2016				<0.1	6.93				
12/14/2016	18.4	<0.1	<0.1			14.7			
2/17/2017	14.9	<0.1		<0.1		13.1			
2/21/2017			<0.1		4.87				
4/17/2017	14.7	<0.1	<0.1	<0.1		11.3			
4/18/2017					4.49				
6/19/2017		<0.1	<0.1						
6/20/2017				<0.1	7.36				
6/21/2017	16.4					16.3			
8/7/2017		<0.1	<0.1	<0.1					
8/8/2017	14.7				7.05	13			
10/16/2017		<0.1	<0.1	<0.1	3.33				
10/17/2017	19.2					16			
11/28/2017	12.9 (R)				2.24 (R)	13.7 (R)			
3/5/2018		<0.1							
3/6/2018			<0.1	0.66	0.885		<0.1		
3/7/2018	9.8					11			
6/19/2018		<0.1	<0.1		6.84		<0.1		
6/20/2018	10.5					15		<0.1	<0.1
6/21/2018				<0.1					
8/27/2018		<0.1	<0.1				<0.1	<0.1	<0.1
8/28/2018				<0.1	1.36				
8/29/2018	14.6					14			
3/18/2019			<0.1					<0.1	
3/19/2019		<0.1		<0.1			0.299		<0.1
3/20/2019	8.35				6.95	15.5			
8/6/2019			0.205				<0.1	<0.1	<0.1
8/7/2019	7.56	<0.1		<0.1	8.46	17.6			
4/7/2020	10.6	<0.1	<0.1	<0.1	6.76	17.4	<0.1	<0.1	<0.1
9/18/2020	14.5	<0.1	<0.1	<0.1	6.82	19.5	0.263	0.109	0.15
4/5/2021	10.3	<0.1	<0.1	<0.1	5.24	17.2	<0.1	<0.1	<0.1
9/1/2021	11.1	<0.1	<0.1	<0.1	5.88	17.1	<0.1	<0.1	<0.1
4/20/2022	6.98	<0.1	<0.1	<0.1	3.57	15.2	<0.1	<0.1	<0.1
9/14/2022	10.4	<0.1	<0.1	<0.1	3.69	15.1	0.322	0.134	0.204
4/10/2023							0.247		
4/11/2023	5.8		<0.1		3.35	14.8		0.114	
4/12/2023		<0.1		<0.1					0.145
9/18/2023		<0.1					0.207		0.128
9/19/2023	9.28		<0.1		4.42	18.1		<0.1	
9/20/2023				<0.1					
4/11/2024		<0.1					<0.1		<0.1
4/12/2024			<0.1		2.31			<0.1	
4/15/2024	5.8			<0.1		15.2			
9/10/2024		<0.1			3.68		0.243		0.126
9/11/2024	8.5		<0.1			17.7		<0.1	

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-08 (bg)	MW-4B	MW-21	MW-14A	MW-22 (bg)	MW-24	MW-23 (bg)
9/12/2024				<0.1					
4/15/2025							<0.1		<0.1
4/16/2025		<0.1	<0.1		2.64			<0.1	
4/17/2025	8.16					15.4			
4/18/2025				0.169					

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-27	MW-26
6/6/2016		
6/7/2016		
6/8/2016		
8/15/2016		
8/16/2016		
10/10/2016		
10/11/2016		
12/12/2016		
12/14/2016		
2/17/2017		
2/21/2017		
4/17/2017		
4/18/2017		
6/19/2017		
6/20/2017		
6/21/2017		
8/7/2017		
8/8/2017		
10/16/2017		
10/17/2017		
11/28/2017		
3/5/2018		
3/6/2018		
3/7/2018		
6/19/2018		
6/20/2018		
6/21/2018		
8/27/2018		
8/28/2018		
8/29/2018		
3/18/2019		
3/19/2019		
3/20/2019		
8/6/2019		
8/7/2019		
4/7/2020		
9/18/2020	3.25	2.5
4/5/2021	0.17	2.33
9/1/2021	3.82	2.49
4/20/2022	0.549	2.07
9/14/2022	1.41	1.97
4/10/2023		
4/11/2023		
4/12/2023	0.741	2.26
9/18/2023		
9/19/2023		
9/20/2023	1	3.08
4/11/2024		
4/12/2024	1.01	3.07
4/15/2024		
9/10/2024		
9/11/2024	3.02	4.19

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-27	MW-26
9/12/2024		
4/15/2025		
4/16/2025	0.244	3.4
4/17/2025		
4/18/2025		

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-4B	MW-6A	MW-5B	MW-14A	MW-21	MW-08 (bg)	MW-22 (bg)
6/6/2016	89.3	206							
6/7/2016			98.2	81.4	147			152 (o)	
6/8/2016						281	37.2		
8/15/2016	80.7	199				311	146		
8/16/2016			88.8	75.4	139			117	
10/10/2016	83.3						185	118	
10/11/2016		203	89.3	75.7	140	308			
12/12/2016			94.5	85.6	147		178		
12/14/2016	86.5	244				333		109	
2/17/2017	81.2	233	86.8			268			
2/21/2017				68.8	126		118	89.9	
4/17/2017	79.2	226	85.9	56.3	130	310		96.5	
4/18/2017							110		
6/19/2017	83.6							113	
6/20/2017			88.7		140		149		
6/21/2017		186		72.9		307			
8/7/2017	85.5		89.7					91.3	
8/8/2017		206		71.2	139	296	163		
10/16/2017	83.3		85.3				62.3	77	
10/17/2017		218		71.9	136	310			
11/28/2017		217 (R)				301 (R)			
3/5/2018	77.3								
3/6/2018			95.8	74.1	134		25.1	74.7	69.8
3/7/2018		229				278			
6/19/2018	88.5						159	115	91.5
6/20/2018		102				297			
6/21/2018			91.4	80.1	147				
8/27/2018	85.4							83.6	80.7
8/28/2018			91.3				78.7		
8/29/2018		155		73.3	146	309			
3/18/2019								97.6	
3/19/2019	76.3		99.7	73.2	134				91.6
3/20/2019		118				290	142		
8/6/2019								132	83.8
8/7/2019	78.9	111	93.8	80.9	139	255	145		
4/7/2020	75.4	163	89.6	85.1	117	245	104	92.4	80.9
9/18/2020	74.2	134	89	87.9	108	244	101	77.7	75.5
4/5/2021	78.8	128	94.1	87.6	104	259	79.5	81.2	78.4
9/1/2021	80	125	95.1	90.6	108	270	93.5	78.3	79.4
4/20/2022	90.4	127	106	96.5	117	289	97.5	69.6	80.2
9/14/2022	82	132	92.3	89	117	301	88.2	76.8	79.6
4/10/2023									80.4
4/11/2023		110				318	76	78.2	
4/12/2023	83.7		91.3	95.4	107				
9/18/2023	84.7								79
9/19/2023		126				291	96	79.4	
9/20/2023			90.4	82.1	115				
4/11/2024	96.2								83.1
4/12/2024							59.9	84.2	
4/15/2024		118	97.7	92.4	112	344			
9/10/2024	97.8						96.6		84.3
9/11/2024		129				327		88.6	

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-4B	MW-6A	MW-5B	MW-14A	MW-21	MW-08 (bg)	MW-22 (bg)
9/12/2024			102	99.4	123				
4/15/2025									74.5
4/16/2025	99.6						87.4	84.1	
4/17/2025		125				286			
4/18/2025			86.8	85.2	106				

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-23 (bg)	MW-24	MW-27	MW-26
6/6/2016				
6/7/2016				
6/8/2016				
8/15/2016				
8/16/2016				
10/10/2016				
10/11/2016				
12/12/2016				
12/14/2016				
2/17/2017				
2/21/2017				
4/17/2017				
4/18/2017				
6/19/2017				
6/20/2017				
6/21/2017				
8/7/2017				
8/8/2017				
10/16/2017				
10/17/2017				
11/28/2017				
3/5/2018				
3/6/2018				
3/7/2018				
6/19/2018				
6/20/2018	70.5	88		
6/21/2018				
8/27/2018	63.9	72.8		
8/28/2018				
8/29/2018				
3/18/2019		75		
3/19/2019	59.7			
3/20/2019				
8/6/2019	59.5	103		
8/7/2019				
4/7/2020	61	94.3		
9/18/2020	52.1	69.9	61	134
4/5/2021	56.3	74.6	57.6	130
9/1/2021	56.1	69	68.4	134
4/20/2022	54	62.8	29.6	121
9/14/2022	54.5	66.8	38.7	133
4/10/2023				
4/11/2023		78.6		
4/12/2023	55.3		26.8	141
9/18/2023	56			
9/19/2023		70.5		
9/20/2023			33.4	127
4/11/2024	59.7			
4/12/2024		71.6	35.4	134
4/15/2024				
9/10/2024	58			
9/11/2024		73.6	63.1	126

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-23 (bg)	MW-24	MW-27	MW-26
9/12/2024				
4/15/2025	56			
4/16/2025		71.6	26.4	114
4/17/2025				
4/18/2025				

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-6A	MW-5B	MW-08 (bg)	MW-4B	MW-21	MW-14A	MW-22 (bg)
6/6/2016	6.22	17.1							
6/7/2016			5.97	67	19.8	12.6			
6/8/2016							27.7	28.7	
8/15/2016	<5	17.2					16.6	28.7	
8/16/2016			<5	65.9	17.8	13.2			
10/10/2016	<5				16.2		24.4		
10/11/2016		17.6	<5	66		13.6		37	
12/12/2016			9.08	67		13.5	19.2		
12/14/2016	<5	19			17.2			31.9	
2/17/2017	<5	21.5				15.1		33.5	
2/21/2017			9.93	70.4	15.4		14.2		
4/17/2017	<5	47.4 (o)	<5	62.1	17.1	12.5		39.4	
4/18/2017							15.6		
6/19/2017	<5				14.1				
6/20/2017				63.4		13.2	15.1		
6/21/2017		12.8	<5					29.7	
8/7/2017	<5				14	13.2			
8/8/2017		15.4	<5	64			16.1	32.9	
10/16/2017	<5				14.4	14.7	5.09		
10/17/2017		20.5	<5	73				35.4	
11/28/2017		20.7 (R)		67.8 (R)				33.2 (R)	
3/5/2018	<5								
3/6/2018			5.33	68.2	14.5	8.81	<5		30
3/7/2018		24.2						37.4	
6/19/2018	<5				14.9		10.9		27.2
6/20/2018		<5						29	
6/21/2018			<5	65		15.3			
8/27/2018	<5				15.6				29.8
8/28/2018						19.4	<5		
8/29/2018		10.1	<5	70.8				33.1	
3/18/2019					16.1				
3/19/2019	<5		<5	55		16			27.6
3/20/2019		8.54					8.3	25.8	
8/6/2019					17.1				26.9
8/7/2019	<5	9.91	<5	64.1		15.6	14	22.1	
4/7/2020	<5	13	12.2	44	17.2	14.8	8.05	22.5	24.8
9/18/2020	<5	8.63	15.6	41	14.7	15.1	7.21	22.8	23.2
4/5/2021	<5	15	19.3	42.7	22.3	22.9	5.14	27.1	28.1
9/1/2021	<5	8.86	17.4	37.6	16.3	16.7	6.58	23.2	20
4/20/2022	<5	7.71	14.2	38.1	15.8	20.8	7.19	25.5	20.2
9/14/2022	<5	8.29	13.3	39	16.7	16.8	18	22.4	7.04
4/10/2023									18.2
4/11/2023		7.3			17.9		5.93	20.3	
4/12/2023	5.86		15.4	38.7		18			
9/18/2023	<5								18.4
9/19/2023		8.41			19.9		8.23	20.9	
9/20/2023			12.2	41.8		17.4			
4/11/2024	<5								15.8
4/12/2024					17.2		<5		
4/15/2024		7.01	15.5	39.3		18.1		16.4	
9/10/2024	9.65						13.5		16.6
9/11/2024		7.41			20.1			16.3	

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-6A	MW-5B	MW-08 (bg)	MW-4B	MW-21	MW-14A	MW-22 (bg)
9/12/2024			14.4	40.5		14.6			
4/15/2025									16.1
4/16/2025	12.8				18.6		10.9		
4/17/2025		7.79						18	
4/18/2025			15.8	32.1		18.9			

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-23 (bg)	MW-24	MW-26	MW-27
6/6/2016				
6/7/2016				
6/8/2016				
8/15/2016				
8/16/2016				
10/10/2016				
10/11/2016				
12/12/2016				
12/14/2016				
2/17/2017				
2/21/2017				
4/17/2017				
4/18/2017				
6/19/2017				
6/20/2017				
6/21/2017				
8/7/2017				
8/8/2017				
10/16/2017				
10/17/2017				
11/28/2017				
3/5/2018				
3/6/2018				
3/7/2018				
6/19/2018				
6/20/2018	15.9	19.9		
6/21/2018				
8/27/2018	14.2	18.1		
8/28/2018				
8/29/2018				
3/18/2019		17.3		
3/19/2019	10.5			
3/20/2019				
8/6/2019	13.8	22.4		
8/7/2019				
4/7/2020	15.7	24.8		
9/18/2020	14.4	19.5	19.7	13.6
4/5/2021	21.4	28.9	21.1	10.4
9/1/2021	15.2	21.9	19.3	15
4/20/2022	16.9	19.9	19.9	19.1
9/14/2022	16.2	19.9	18.4	19
4/10/2023				
4/11/2023		23.4		
4/12/2023	17.7		3.83	2.45
9/18/2023	19.2			
9/19/2023		22.8		
9/20/2023			18.8	28.9
4/11/2024	19.2			
4/12/2024		19.5	17.4	19.5
4/15/2024				
9/10/2024	21.7			
9/11/2024		22.8	17.3	27.2

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-23 (bg)	MW-24	MW-26	MW-27
9/12/2024				
4/15/2025	25.1			
4/16/2025		23.6	17.2	23
4/17/2025				
4/18/2025				

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-08 (bg)	MW-4B	MW-22 (bg)	MW-23 (bg)	MW-27
6/6/2016	0.000555					
6/7/2016		<0.0005	0.000681			
8/15/2016	<0.0005					
8/16/2016		<0.0005	<0.0005			
10/10/2016	0.000523	<0.0005				
10/11/2016			<0.0005			
12/12/2016			<0.0005			
12/14/2016	0.000638	<0.0005				
2/17/2017	0.000663		<0.0005			
2/21/2017		<0.0005				
4/17/2017	0.000779	<0.0005	<0.0005			
6/19/2017	0.000621	0.000601				
6/20/2017			<0.0005			
8/7/2017	0.000695	0.00051	<0.0005			
3/5/2018	0.000627					
3/6/2018		<0.0005	<0.0005	0.00142		
5/14/2018				0.0012		
6/19/2018	0.00107	<0.0005		0.00129		
6/20/2018					0.00161	
6/21/2018			<0.0005			
8/27/2018	0.00088	<0.0005		0.00149	0.00066	
8/28/2018			<0.0005			
3/18/2019		0.00177				
3/19/2019	0.000783		<0.0005	<0.0005	0.00176	
8/6/2019		0.00558		<0.0005	<0.0005	
8/7/2019	0.000572		<0.0005			
4/7/2020	0.000581	0.000517	<0.0005	<0.0005	0.000817	
9/18/2020	0.000751	0.000738	0.00147	<0.0005	<0.0005	<0.0005
4/5/2021	0.000752	0.000839	0.00132	<0.0005	0.000517	<0.0005
9/1/2021	0.000576	0.00127	0.00335	<0.0005	<0.0005	<0.0005
4/20/2022	0.00104	0.00143	0.00135	<0.0005	0.000561	<0.0005
9/14/2022	0.00109	0.00164	0.00459	<0.0005	<0.0005	<0.0005
4/10/2023				<0.0005		
4/11/2023		0.0014				
4/12/2023	0.00142		0.00271		<0.0005	<0.0005
9/18/2023	0.000995			<0.0005	<0.0005	
9/19/2023		0.00126				
9/20/2023			0.00374			<0.0005
4/11/2024	0.00122			<0.0005	<0.0005	
4/12/2024		0.0018				<0.0005
4/15/2024			0.00172			
9/10/2024	0.000977			<0.0005	<0.0005	
9/11/2024		0.00216				<0.0005
9/12/2024			0.0028			
4/15/2025				<0.0005	0.000879	
4/16/2025	0.00154	0.00163				0.000855
4/18/2025			0.00119			

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Copper (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-23 (bg)	MW-22 (bg)	MW-26
10/10/2016	<0.005	<0.005			
8/7/2017	<0.005	<0.005			
8/6/2019	<0.005		<0.005	<0.005	
8/7/2019		<0.005			
4/7/2020	<0.005	<0.005	<0.005	<0.005	
9/18/2020	<0.005	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005	<0.005
4/10/2023				<0.005	
4/11/2023	<0.005				
4/12/2023		<0.005	<0.005		0.00512
9/18/2023		<0.005	<0.005	<0.005	
9/19/2023	<0.005				
9/20/2023					<0.005
4/11/2024		<0.005	<0.005	<0.005	
4/12/2024	<0.005				<0.005
9/10/2024		<0.005	<0.005	<0.005	
9/11/2024	<0.005				<0.005
4/15/2025			<0.005	<0.005	
4/16/2025	<0.005	<0.005			<0.005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-08 (bg)	MW-6A	MW-5B	MW-4B	MW-14A	MW-21	MW-22 (bg)
6/6/2016	0.731	<1							
6/7/2016			<1	<1	<1	<1			
6/8/2016							<1	<1	
8/15/2016	<1	0.549					<1	<1	
8/16/2016			<1	<1	<1	<1			
10/10/2016	<1		<1					<1	
10/11/2016		<1		<1	<1	<1	0.867		
12/12/2016				2.02	1.88	<1		<1	
12/14/2016	<1	<1	0.72				<1		
2/17/2017	<1	<1				0.664	<1		
2/21/2017			<1	1.89	2.14			0.993	
4/17/2017	0.774	6.7 (o)	1.69 (o)	0.814	0.627	0.801	1.93 (o)		
4/18/2017								0.768	
6/19/2017	<1		<1						
6/20/2017					<1	<1		<1	
6/21/2017		<1		<1			<1		
8/7/2017	<1		<1			<1			
8/8/2017		<1		<1	<1		<1	<1	
10/16/2017	<1		<1			<1		<1	
10/17/2017		<1		<1	<1		<1		
3/5/2018	<1								
3/6/2018			<1	<1	<1	<1		<1	<1
3/7/2018		<1					<1		
6/19/2018	<1		0.826					<1	<1
6/20/2018		<1					0.684		
6/21/2018				<1	<1	<1			
8/27/2018	<1		<1						<1
8/28/2018						<1		<1	
8/29/2018		<1		<1	<1		<1		
3/18/2019			<1						
3/19/2019	<1			<1	<1	0.771			<1
3/20/2019		0.523					<1	<1	
8/6/2019			0.643						0.507
8/7/2019	0.596	0.625		0.535	<1	0.525	<1	<1	
4/7/2020	<1	<1	0.864	0.652	<1	<1	<1	<1	<1
9/18/2020	<1	<1	<1	<1	<1	<1	<1	<1	<1
4/5/2021	<1	0.516	<1	<1	<1	<1	<1	<1	<1
9/1/2021	<1	<1	<1	<1	<1	<1	<1	<1	<1
4/20/2022	<1	<1	<1	<1	<1	<1	<1	<1	<1
9/14/2022	<1	<1	<1	<1	<1	<1	<1	<1	<1
4/10/2023									<1
4/11/2023		<1	<1				<1	<1	
4/12/2023	<1			<1	<1	<1			
9/18/2023	<1								<1
9/19/2023		<1	<1				<1	<1	
9/20/2023				<1	<1	<1			
4/11/2024	<1								<1
4/12/2024			<1					<1	
4/15/2024		<1		<1	<1	<1	<1		
9/10/2024	<1							<1	<1
9/11/2024		<1	<1				<1		
9/12/2024				<1	<1	<1			

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-08 (bg)	MW-6A	MW-5B	MW-4B	MW-14A	MW-21	MW-22 (bg)
4/15/2025									0.268
4/16/2025	0.281		0.312					0.154	
4/17/2025		0.257					0.262		
4/18/2025				0.303	0.193	0.268			

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-23 (bg)	MW-24	MW-26
6/6/2016			
6/7/2016			
6/8/2016			
8/15/2016			
8/16/2016			
10/10/2016			
10/11/2016			
12/12/2016			
12/14/2016			
2/17/2017			
2/21/2017			
4/17/2017			
4/18/2017			
6/19/2017			
6/20/2017			
6/21/2017			
8/7/2017			
8/8/2017			
10/16/2017			
10/17/2017			
3/5/2018			
3/6/2018			
3/7/2018			
6/19/2018			
6/20/2018	<1	0.653	
6/21/2018			
8/27/2018	<1	<1	
8/28/2018			
8/29/2018			
3/18/2019		<1	
3/19/2019	<1		
3/20/2019			
8/6/2019	<1	<1	
8/7/2019			
4/7/2020	<1	<1	
9/18/2020	<1	<1	<1
4/5/2021	<1	<1	<1
9/1/2021	<1	<1	<1
4/20/2022	<1	<1	<1
9/14/2022	<1	<1	<1
4/10/2023			
4/11/2023		<1	
4/12/2023	<1		<1
9/18/2023	<1		
9/19/2023		<1	
9/20/2023			<1
4/11/2024	<1		
4/12/2024		<1	<1
4/15/2024			
9/10/2024	<1		
9/11/2024		<1	<1
9/12/2024			

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-23 (bg)	MW-24	MW-26
4/15/2025	0.236		
4/16/2025		0.22	0.181
4/17/2025			
4/18/2025			

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-4B	MW-6A	MW-14A	MW-5B	MW-23 (bg)	MW-22 (bg)	MW-27
10/10/2016	<0.1	1.8							
10/11/2016			1.5	3.12	<0.1	2.49			
8/7/2017	<0.1	1.58	1.68						
8/8/2017				3.09	<0.1	2.51			
8/6/2019	<0.1						0.231	<0.1	
8/7/2019		3.33	1.61	3.39	<0.1	2.6			
4/7/2020	<0.1	3.36	5.55	3.47	<0.1	1.88	0.485	<0.1	
9/18/2020	<0.1	4.38	0.895	3.45	<0.1	1.86	<0.1	<0.1	<0.1
4/5/2021	0.167	2.08	<0.1	3.57	<0.1	1.85	0.348	<0.1	<0.1
9/1/2021	0.141	4.37	<0.1	3.83	<0.1	2.21	0.136	<0.1	0.11
4/20/2022	0.565	2.49	<0.1	3.61	0.165	1.99	0.492	<0.1	0.281
9/14/2022	0.609	2.7	0.25	3.43	<0.1	2.03	0.117	<0.1	0.594
4/10/2023								<0.1	
4/11/2023	0.708				<0.1				
4/12/2023		1.09	0.423	3.43		1.83	0.21		0.338
9/18/2023		2.45					<0.1	<0.1	
9/19/2023	0.451				<0.1				
9/20/2023			0.559	3.09		2.18			<0.1
4/11/2024		0.982					0.239	<0.1	
4/12/2024	1.29								0.181
4/15/2024			0.309	3.42	<0.1	1.78			
9/10/2024		2.86					0.16	0.189	
9/11/2024	1.53				<0.1				<0.1
9/12/2024			0.797	3.6		2.06			
4/15/2025							2.53	0.215	
4/16/2025	1.44	1.4							2.37
4/17/2025					0.163				
4/18/2025			0.31	3.2		2.25			

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26
10/10/2016	
10/11/2016	
8/7/2017	
8/8/2017	
8/6/2019	
8/7/2019	
4/7/2020	
9/18/2020	<0.1
4/5/2021	<0.1
9/1/2021	<0.1
4/20/2022	<0.1
9/14/2022	<0.1
4/10/2023	
4/11/2023	
4/12/2023	0.456
9/18/2023	
9/19/2023	
9/20/2023	<0.1
4/11/2024	
4/12/2024	<0.1
4/15/2024	
9/10/2024	
9/11/2024	<0.1
9/12/2024	
4/15/2025	
4/16/2025	<0.1
4/17/2025	
4/18/2025	

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-08 (bg)	MW-5B	MW-21	MW-4B	MW-22 (bg)	MW-23 (bg)	MW-27
6/6/2016	<0.0005							
6/7/2016		<0.0005	<0.0005		0.00147 (o)			
6/8/2016				<0.0005				
8/15/2016	<0.0005			<0.0005				
8/16/2016		<0.0005	<0.0005		<0.0005			
10/10/2016	<0.0005	<0.0005		<0.0005				
10/11/2016			<0.0005		<0.0005			
12/12/2016			<0.0005	<0.0005	<0.0005			
12/14/2016	<0.0005	<0.0005						
2/17/2017	<0.0005				<0.0005			
2/21/2017		<0.0005	<0.0005	<0.0005				
4/17/2017	<0.0005	<0.0005	<0.0005		<0.0005			
4/18/2017				<0.0005				
6/19/2017	<0.0005	<0.0005						
6/20/2017			<0.0005	<0.0005	<0.0005			
8/7/2017	<0.0005	<0.0005			<0.0005			
8/8/2017			<0.0005	<0.0005				
3/5/2018	<0.0005							
3/6/2018		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		
6/19/2018	<0.0005	<0.0005		0.000633		<0.0005		
6/20/2018							0.00151	
6/21/2018			<0.0005		<0.0005			
8/27/2018	<0.0005	<0.0005				<0.0005	0.000626	
8/28/2018				<0.0005	<0.0005			
8/29/2018			<0.0005					
3/18/2019		<0.0005						
3/19/2019	<0.0005		<0.0005		<0.0005	<0.0005	0.00204	
3/20/2019				<0.0005				
8/6/2019		<0.0005				<0.0005	0.000663	
8/7/2019	<0.0005		<0.0005	<0.0005	<0.0005			
4/7/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00116	
9/18/2020	<0.0005	<0.0005	<0.0005	<0.0005	0.000532	<0.0005	<0.0005	<0.0005
4/5/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.000624	<0.0005
9/1/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
4/20/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.000596	<0.0005
9/14/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.000536
4/10/2023						<0.0005		
4/11/2023		<0.0005		<0.0005				
4/12/2023	<0.0005		<0.0005		<0.0005		<0.0005	0.000528
9/18/2023	<0.0005					<0.0005	<0.0005	
9/19/2023		<0.0005		<0.0005				
9/20/2023			0.000627		0.000576			<0.0005
4/11/2024	<0.0005					<0.0005	<0.0005	
4/12/2024		<0.0005		<0.0005				<0.0005
4/15/2024			<0.0005		<0.0005			
9/10/2024	<0.0005			<0.0005		<0.0005	<0.0005	
9/11/2024		<0.0005						<0.0005
9/12/2024			<0.0005		<0.0005			
4/15/2025						<0.0005	0.00115	
4/16/2025	<0.0005	<0.0005		<0.0005				0.00108
4/18/2025			<0.0005		<0.0005			

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-21	MW-10 (bg)	MW-14A	MW-4B	MW-5B	MW-15A	MW-6A	MW-23 (bg)
10/10/2016	44.1	76.6	33.8						
10/11/2016				122	31.4	42	79.3	23.5	
8/7/2017	36.4		37.8		33.4				
8/8/2017		72.1		124		43.8	86	24.7	
8/6/2019	50.1								24.7
8/7/2019		62.5	30	103	34	42.8	46.9	25.4	
4/7/2020	37.1	46.9	31.4	102	34	39.6	71	29.4	28.5
9/18/2020	31.8	45.6	31.9	104	33.2	36.6	59	28.5	24.3
4/5/2021	31.8	34.9	32.2	116	34.3	35.7	55.4	28.8	25.3
9/1/2021	31	40.8	31.3	119	35.6	35.2	54	29.6	24.8
4/20/2022	27.7	40.2	35	120	35.1	35	56	28.6	23.3
9/14/2022	30.1	39.1	33.3	122	33.6	36.8	56.1	29.4	24.6
4/10/2023									
4/11/2023	31.1	33		122			48.7		
4/12/2023			34.5		33.9	34.8		31.2	24.4
9/18/2023			34.7						25.4
9/19/2023	31.5	42.8		122			54		
9/20/2023					33.6	37.6		27.2	
4/11/2024			41.5						26.6
4/12/2024	32.7	24.9							
4/15/2024				135	35.6	36.5	51.6	31	
9/10/2024		41.3	41.1						25.9
9/11/2024	34.3			134			53.8		
9/12/2024					35.9	36.4		30.8	
4/15/2025									27.1
4/16/2025	34.4	40.5	46.1						
4/17/2025				134			53.2		
4/18/2025					32.3	36.3		28.8	

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-22 (bg)	MW-26	MW-27
10/10/2016				
10/11/2016				
8/7/2017				
8/8/2017				
8/6/2019	44.2	33		
8/7/2019				
4/7/2020	43	34.5		
9/18/2020	32	31.1	53.4	29.2
4/5/2021	33	31	49.5	10.7
9/1/2021	30.3	31.4	50.8	28.4
4/20/2022	28.3	29.6	46.4	12.9
9/14/2022	29.1	31.8	49.9	17.3
4/10/2023		31.5		
4/11/2023	34.7			
4/12/2023			52.3	11.9
9/18/2023		32		
9/19/2023	29.9			
9/20/2023			48.9	15.5
4/11/2024		33		
4/12/2024	30.7		50.5	15.4
4/15/2024				
9/10/2024		33.1		
9/11/2024	31		45.3	27.9
9/12/2024				
4/15/2025		30.7		
4/16/2025	32.7		43.3	13
4/17/2025				
4/18/2025				

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-4B	MW-5B	MW-6A	MW-14A	MW-23 (bg)	MW-24	MW-22 (bg)
10/10/2016	0.28	0.151							
10/11/2016			0.133	0.69	0.0818	<0.01			
8/7/2017	0.237	0.166	0.132						
8/8/2017				0.689	0.0802	<0.01			
8/6/2019	0.758						0.0443	0.0223	1.74 (o)
8/7/2019		0.177	0.145	0.784	0.0941	<0.01			
4/7/2020	0.119	0.184	0.13	0.492	0.103	<0.01	0.0718	0.0156	0.0896
9/18/2020	0.652	0.251	0.686	0.546	0.113	<0.01	0.0127	<0.01	1.36
4/5/2021	0.185	0.199	1.39	0.467	0.109	<0.01	0.0634	<0.01	0.175
9/1/2021	0.663	0.221	1.39	0.512	0.117	<0.01	0.0444	0.0126	1.27
4/20/2022	0.411	0.231	0.91	0.454	0.112	0.0264	0.0588	<0.01	0.106
9/14/2022	0.749	0.31	0.871	0.532	0.112	<0.01	0.0222	<0.01	0.795
4/10/2023									0.0633
4/11/2023	0.309					<0.01		0.0144	
4/12/2023		0.396	0.51	0.453	0.113		0.0372		
9/18/2023		0.266					0.0169		0.767
9/19/2023	0.37					<0.01		0.0183	
9/20/2023			0.612	0.594	0.0995				
4/11/2024		0.233					0.037		0.118
4/12/2024	0.509							0.0156	
4/15/2024			0.395	0.506	0.114	<0.01			
9/10/2024		0.255					0.0301		0.677
9/11/2024	0.491					<0.01		0.0111	
9/12/2024			0.491	0.554	0.118				
4/15/2025							0.0499		0.382
4/16/2025	0.434	0.285						0.0166	
4/17/2025						<0.01			
4/18/2025			0.241	0.478	0.111				

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27
10/10/2016		
10/11/2016		
8/7/2017		
8/8/2017		
8/6/2019		
8/7/2019		
4/7/2020		
9/18/2020	0.0501	0.0345
4/5/2021	0.0395	0.0278
9/1/2021	0.0629	0.0375
4/20/2022	0.019	0.0722
9/14/2022	0.0917	0.0406
4/10/2023		
4/11/2023		
4/12/2023	0.0983	0.0378
9/18/2023		
9/19/2023		
9/20/2023	0.111	0.0231
4/11/2024		
4/12/2024	0.0697	0.0376
4/15/2024		
9/10/2024		
9/11/2024	0.0458	0.0168
9/12/2024		
4/15/2025		
4/16/2025	0.0423	0.094
4/17/2025		
4/18/2025		

Prediction Limit

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-08 (bg)	MW-5B	MW-4B	MW-14A	MW-21	MW-22 (bg)	MW-24
6/6/2016	<0.002	<0.002							
6/7/2016			<0.002	<0.002	<0.002				
6/8/2016						<0.002	<0.002		
8/15/2016	<0.002	<0.002				<0.002	<0.002		
8/16/2016			<0.002	<0.002	<0.002				
10/10/2016		<0.002	<0.002				<0.002		
10/11/2016	<0.002			<0.002	<0.002	<0.002			
12/12/2016				<0.002	<0.002		<0.002		
12/14/2016	<0.002	<0.002	<0.002			<0.002			
2/17/2017	<0.002	<0.002			<0.002	<0.002			
2/21/2017			<0.002	<0.002			<0.002		
4/17/2017	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002			
4/18/2017							<0.002		
6/19/2017		<0.002	<0.002						
6/20/2017				<0.002	<0.002		<0.002		
6/21/2017	<0.002					<0.002			
8/7/2017		<0.002	<0.002		<0.002				
8/8/2017	<0.002			<0.002		<0.002	<0.002		
3/5/2018		<0.002							
3/6/2018			0.0022	<0.002	<0.002		<0.002	0.00568	
3/7/2018	<0.002					<0.002			
5/14/2018			<0.002					0.00385	
6/19/2018		<0.002	<0.002				0.00383	0.00423	
6/20/2018	<0.002					<0.002			0.00447
6/21/2018				<0.002	<0.002				
8/27/2018		0.0022	0.00224					0.00424	<0.002
8/28/2018					<0.002		<0.002		
8/29/2018	<0.002			<0.002		<0.002			
3/18/2019			<0.002						<0.002
3/19/2019		0.00341		0.00212	<0.002			0.00263	
3/20/2019	<0.002					<0.002	<0.002		
8/6/2019			<0.002					0.00574	<0.002
8/7/2019	<0.002	0.00219		<0.002	<0.002	<0.002	<0.002		
4/7/2020	<0.002	0.00215	<0.002	<0.002	<0.002	<0.002	<0.002	0.00297	<0.002
9/18/2020	<0.002	<0.002	<0.002	<0.002	0.00296	<0.002	<0.002	0.00529	<0.002
4/5/2021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
9/1/2021	<0.002	0.00217	0.00218	<0.002	<0.002	<0.002	<0.002	0.00558	<0.002
4/20/2022	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.0042	<0.002
9/14/2022	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.00446	<0.002
4/10/2023								0.00364	
4/11/2023	<0.002		<0.002			<0.002	<0.002		<0.002
4/12/2023		<0.002		<0.002	<0.002				
9/18/2023		<0.002						0.00661	
9/19/2023	<0.002		<0.002			<0.002	<0.002		<0.002
9/20/2023				<0.002	<0.002				
4/11/2024		<0.002						0.00217	
4/12/2024			<0.002				<0.002		<0.002
4/15/2024	<0.002			<0.002	<0.002	<0.002			
9/10/2024		0.00287					<0.002	0.00578	
9/11/2024	<0.002		0.00205			<0.002			<0.002
9/12/2024				<0.002	<0.002				
4/15/2025								0.00415	

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-08 (bg)	MW-5B	MW-4B	MW-14A	MW-21	MW-22 (bg)	MW-24
4/16/2025		<0.002	<0.002				<0.002		<0.002
4/17/2025	0.0109					0.00322			
4/18/2025				<0.002	<0.002				

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-23 (bg)	MW-26
6/6/2016		
6/7/2016		
6/8/2016		
8/15/2016		
8/16/2016		
10/10/2016		
10/11/2016		
12/12/2016		
12/14/2016		
2/17/2017		
2/21/2017		
4/17/2017		
4/18/2017		
6/19/2017		
6/20/2017		
6/21/2017		
8/7/2017		
8/8/2017		
3/5/2018		
3/6/2018		
3/7/2018		
5/14/2018		
6/19/2018		
6/20/2018	0.00822	
6/21/2018		
8/27/2018	0.00617	
8/28/2018		
8/29/2018		
3/18/2019		
3/19/2019	<0.002	
3/20/2019		
8/6/2019	<0.002	
8/7/2019		
4/7/2020	<0.002	
9/18/2020	<0.002	<0.002
4/5/2021	<0.002	0.00239
9/1/2021	<0.002	<0.002
4/20/2022	<0.002	<0.002
9/14/2022	<0.002	<0.002
4/10/2023		
4/11/2023		
4/12/2023	<0.002	<0.002
9/18/2023	<0.002	
9/19/2023		
9/20/2023		<0.002
4/11/2024	<0.002	
4/12/2024		<0.002
4/15/2024		
9/10/2024	<0.002	
9/11/2024		<0.002
9/12/2024		
4/15/2025	<0.002	

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-23 (bg)	MW-26
4/16/2025		<0.002
4/17/2025		
4/18/2025		

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Nickel (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-21	MW-10 (bg)	MW-4B	MW-23 (bg)	MW-22 (bg)
10/10/2016	<0.005	0.00799	<0.005			
10/11/2016				<0.005		
8/7/2017	<0.005		<0.005	<0.005		
8/8/2017		0.00699				
8/6/2019	<0.005				<0.005	<0.005
8/7/2019		0.0079	<0.005	<0.005		
4/7/2020	<0.005	0.00576	<0.005	<0.005	<0.005	<0.005
9/18/2020	0.00628	0.00604	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	0.00518	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	0.00578	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	0.00503	<0.005	<0.005
4/10/2023						<0.005
4/11/2023	<0.005	<0.005				
4/12/2023			<0.005	0.0051	<0.005	
9/18/2023			<0.005		<0.005	<0.005
9/19/2023	<0.005	<0.005				
9/20/2023				<0.005		
4/11/2024			<0.005		<0.005	<0.005
4/12/2024	<0.005	<0.005				
4/15/2024				<0.005		
9/10/2024		<0.005	<0.005		<0.005	<0.005
9/11/2024	<0.005					
9/12/2024				<0.005		
4/15/2025					<0.005	<0.005
4/16/2025	<0.005	<0.005	<0.005			
4/18/2025				<0.005		

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-08 (bg)	MW-21	MW-14A	MW-22 (bg)	MW-23 (bg)
6/6/2016	<0.005	<0.005					
6/7/2016			<0.005				
6/8/2016				0.0165	0.0071		
8/15/2016	<0.005	<0.005		0.0103	0.00811		
8/16/2016			<0.005				
10/10/2016	<0.005		<0.005	0.0137			
10/11/2016		<0.005			0.00821		
12/12/2016				0.0119			
12/14/2016	<0.005	<0.005	<0.005		0.00834		
2/17/2017	<0.005	<0.005			0.00752		
2/21/2017			<0.005	0.0074			
4/17/2017	<0.005	<0.005	<0.005		0.00823		
4/18/2017				0.00674			
6/19/2017	<0.005		<0.005				
6/20/2017				0.0106			
6/21/2017		<0.005			0.00829		
8/7/2017	<0.005		<0.005				
8/8/2017		<0.005		0.0109	0.00759		
3/5/2018	<0.005						
3/6/2018			<0.005	<0.005		<0.005	
3/7/2018		0.00502			<0.005		
6/19/2018	<0.005		<0.005	0.00939		<0.005	
6/20/2018		<0.005			0.00739		<0.005
8/27/2018	<0.005		<0.005			<0.005	<0.005
8/28/2018				<0.005			
8/29/2018		<0.005			0.00827		
3/18/2019			<0.005				
3/19/2019	<0.005					<0.005	<0.005
3/20/2019		<0.005		0.0102	0.00569		
8/6/2019			<0.005			<0.005	<0.005
8/7/2019	<0.005	<0.005		0.0108	<0.005		
4/7/2020	<0.005	<0.005	<0.005	0.00632	<0.005	<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	0.00762	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	0.00617	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	0.00634	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4/10/2023						<0.005	
4/11/2023		<0.005	<0.005	<0.005	<0.005		
4/12/2023	<0.005						<0.005
9/18/2023	<0.005					<0.005	<0.005
9/19/2023		<0.005	<0.005	0.0053	<0.005		
4/11/2024	<0.005					<0.005	<0.005
4/12/2024			<0.005	<0.005			
4/15/2024		<0.005			<0.005		
9/10/2024	<0.005			0.00666		<0.005	<0.005
9/11/2024		<0.005	<0.005		<0.005		
4/15/2025						<0.005	<0.005
4/16/2025	<0.005		<0.005	0.00832			
4/17/2025		<0.005			<0.005		

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Strontium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-21	MW-10 (bg)	MW-14A	MW-4B	MW-5B	MW-15A	MW-6A	MW-23 (bg)
10/10/2016	0.338	0.291	0.156						
10/11/2016				0.279	0.103	0.193	0.185	0.156	
8/7/2017	0.243		0.165		0.11				
8/8/2017		0.256		0.257		0.197	0.178	0.161	
8/6/2019	0.323								0.0872
8/7/2019		0.263	0.199	0.274	0.115	0.208	0.134	0.178	
4/7/2020	0.233	0.175	0.19	0.246	0.103	0.166	0.154	0.173	0.0661
9/18/2020	0.176	0.184	0.19	0.259	0.146	0.167	0.153	0.187	0.0602
4/5/2021	0.188	0.148	0.179	0.261	0.129	0.163	0.133	0.188	0.0639
9/1/2021	0.172	0.178	0.227	0.282	0.14	0.17	0.136	0.204	0.068
4/20/2022	0.164	0.169	0.173	0.247	0.122	0.168	0.149	0.194	0.0595
9/14/2022	0.16	0.155	0.191	0.266	0.101	0.167	0.127	0.184	0.0592
4/10/2023									
4/11/2023	0.148	0.153		0.293			0.0985		
4/12/2023			0.178		0.091	0.149		0.194	0.0526
9/18/2023			0.207						0.0601
9/19/2023	0.151	0.164		0.282			0.113		
9/20/2023					0.0958	0.163		0.165	
4/11/2024			0.188						0.0585
4/12/2024	0.172	0.153							
4/15/2024				0.301	0.0951	0.166	0.125	0.19	
9/10/2024		0.181	0.197						0.0598
9/11/2024	0.181			0.298			0.117		
9/12/2024					0.103	0.162		0.188	
4/15/2025									0.0665
4/16/2025	0.159	0.173	0.169						
4/17/2025				0.229			0.107		
4/18/2025					0.0917	0.159		0.175	

Prediction Limit

Constituent: Strontium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-22 (bg)	MW-26	MW-27
10/10/2016				
10/11/2016				
8/7/2017				
8/8/2017				
8/6/2019	0.123	0.133		
8/7/2019				
4/7/2020	0.109	0.129		
9/18/2020	0.0824	0.108	0.174	0.106
4/5/2021	0.0899	0.13	0.159	0.0986
9/1/2021	0.085	0.115	0.159	0.128
4/20/2022	0.0802	0.127	0.145	0.0575
9/14/2022	0.0746	0.111	0.145	0.0659
4/10/2023		0.137		
4/11/2023	0.0795			
4/12/2023			0.133	0.0512
9/18/2023		0.101		
9/19/2023	0.0768			
9/20/2023			0.135	0.0752
4/11/2024		0.103		
4/12/2024	0.0703		0.147	0.069
4/15/2024				
9/10/2024		0.106		
9/11/2024	0.0754		0.127	0.113
9/12/2024				
4/15/2025		0.124		
4/16/2025	0.0806		0.119	0.067
4/17/2025				
4/18/2025				

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-08 (bg)	MW-5B	MW-4B	MW-6A	MW-21	MW-14A	MW-22 (bg)
6/6/2016	42.1	827							
6/7/2016			366	109	32.2	<5			
6/8/2016							713	1050	
8/15/2016	33.8	605					520	1040	
8/16/2016			187	109	28.4	<5			
10/10/2016	36.4		187				603		
10/11/2016		607		105	27.2	<5		1010	
12/12/2016				109	32.7	<5	645		
12/14/2016	38.4	732	149					1140	
2/17/2017	47.3	849			36			1190	
2/21/2017			145	111		5.94	415		
4/17/2017	38.3	853	145	108	39.5	<5		1200	
4/18/2017							461		
6/19/2017	35.4		190						
6/20/2017				108	33		541		
6/21/2017		537				<5		1020	
8/7/2017	39		119		35.3				
8/8/2017		664		114		<5	590	1110	
10/16/2017	46.9		106		45.4		206		
10/17/2017		835		135		<5		1210	
11/28/2017		779 (R)						1140 (R)	
3/5/2018	51.4								
3/6/2018			87.3	122	162	<5	53.7		123
3/7/2018		824						1110	
6/19/2018	37.3		136				489		134
6/20/2018		210						1090	
6/21/2018				119	51.3	<5			
8/27/2018	34.3		94.7						125
8/28/2018					52.2		96.6		
8/29/2018		400		120		<5		1070	
3/18/2019			223						
3/19/2019	42.8			85	48	<5			134
3/20/2019		351					442	1050	
8/6/2019			276						139
8/7/2019	28.8	327		112	47	<5	529	837	
4/7/2020	18.6	496	123	58.9	41.5	13.6	373	888	143
9/18/2020	36.5	403	100	61.9	46.9	19.1	356	924	151
4/5/2021	27.6	338	99.7	57.4	60.1	27.3	237	952	154
9/1/2021	32.3	333	82.7	53.7	50.2	22.7	303	1010	154
4/20/2022	48.3	297	72.8	44.7	58.4	18.9	293	1030	158
9/14/2022	31.2	319	67.1	49.9	49.5	16.4	151	978	220
4/10/2023									147
4/11/2023		254	72.2				215	1150	
4/12/2023	39.8			45.8	54	20.5			
9/18/2023	57.4								208
9/19/2023		365	94.2				303	1440	
9/20/2023				53.4	53.1	10.1			
4/11/2024	49.6								160
4/12/2024			65.7				138		
4/15/2024		256		46.3	56.1	18.1		1160	
9/10/2024	59.9						248		161
9/11/2024		273	68.9					1110	

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-08 (bg)	MW-5B	MW-4B	MW-6A	MW-21	MW-14A	MW-22 (bg)
9/12/2024				50.4	65.8	16.3			
4/15/2025									143
4/16/2025	84.7		63.5				230		
4/17/2025		309						808	
4/18/2025				35.7	50.8	18.5			

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-23 (bg)	MW-27	MW-26
6/6/2016				
6/7/2016				
6/8/2016				
8/15/2016				
8/16/2016				
10/10/2016				
10/11/2016				
12/12/2016				
12/14/2016				
2/17/2017				
2/21/2017				
4/17/2017				
4/18/2017				
6/19/2017				
6/20/2017				
6/21/2017				
8/7/2017				
8/8/2017				
10/16/2017				
10/17/2017				
11/28/2017				
3/5/2018				
3/6/2018				
3/7/2018				
6/19/2018				
6/20/2018	101	38.4		
6/21/2018				
8/27/2018	70	31.7		
8/28/2018				
8/29/2018				
3/18/2019	90.8			
3/19/2019		26.2		
3/20/2019				
8/6/2019	169	29.7		
8/7/2019				
4/7/2020	164	25.5		
9/18/2020	81	25.8	119	376
4/5/2021	91.2	35.5	7.63	341
9/1/2021	59.3	25.8	111	358
4/20/2022	48.5	25.4	30.7	322
9/14/2022	44.5	23	38.2	313
4/10/2023				
4/11/2023	87.8			
4/12/2023		25	5.13	72.5
9/18/2023		28.6		
9/19/2023	62.9			
9/20/2023			27	380
4/11/2024		21.8		
4/12/2024	43.8		36.7	309
4/15/2024				
9/10/2024		23.8		
9/11/2024	43.8		85	234

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-23 (bg)	MW-27	MW-26
9/12/2024				
4/15/2025		23.4		
4/16/2025	40.5		11.4	269
4/17/2025				
4/18/2025				

Prediction Limit

Constituent: Vanadium (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-23 (bg)	MW-22 (bg)	MW-27
10/10/2016	<0.005	<0.005			
8/7/2017	<0.005	<0.005			
8/6/2019	<0.005		<0.005	<0.005	
8/7/2019		<0.005			
4/7/2020	<0.005	<0.005	<0.005	<0.005	
9/18/2020	<0.005	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005	<0.005
4/10/2023				<0.005	
4/11/2023	<0.005				
4/12/2023		<0.005	<0.005		<0.005
9/18/2023		<0.005	<0.005	<0.005	
9/19/2023	<0.005				
9/20/2023					<0.005
4/11/2024		<0.005	<0.005	<0.005	
4/12/2024	<0.005				<0.005
9/10/2024		<0.005	<0.005	<0.005	
9/11/2024	<0.005				<0.005
4/15/2025			0.00547	<0.005	
4/16/2025	<0.005	<0.005			0.00613

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Zinc (mg/L) Analysis Run 12/15/2025 3:16 PM View: State Wells Prediciton Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-23 (bg)	MW-22 (bg)
10/10/2016	<0.02	<0.02			
10/11/2016			<0.02		
8/7/2017	<0.02	<0.02			
8/8/2017			<0.02		
8/6/2019	<0.02			<0.02	<0.02
8/7/2019		<0.02	<0.02		
4/7/2020	<0.02	<0.02	<0.02	<0.02	<0.02
9/18/2020	<0.02	<0.02	<0.02	<0.02	<0.02
4/5/2021	<0.02	<0.02	<0.02	<0.02	<0.02
9/1/2021	<0.02	<0.02	<0.02	<0.02	<0.02
4/20/2022	<0.02	<0.02	<0.02	<0.02	<0.02
9/14/2022	<0.02	<0.02	<0.02	<0.02	<0.02
4/10/2023					<0.02
4/11/2023	<0.02		<0.02		
4/12/2023		<0.02		<0.02	
9/18/2023		<0.02		<0.02	<0.02
9/19/2023	<0.02		<0.02		
4/11/2024		<0.02		<0.02	<0.02
4/12/2024	<0.02				
4/15/2024			<0.02		
9/10/2024		<0.02		<0.02	<0.02
9/11/2024	<0.02		0.022		
4/15/2025				<0.02	<0.02
4/16/2025	<0.02	<0.02			
4/17/2025			<0.02		

ND substitution: RL or RL/2 if <15% NDs.

FIGURE F.

Interwell Prediction Limits - Monitoring Wells (September 2025) - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:19 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**MW-14A**	**0.322**	**n/a**	**9/9/2025**	**16.1**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-15A**	**0.322**	**n/a**	**9/10/2025**	**5.51**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-21**	**0.322**	**n/a**	**9/9/2025**	**1.65**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-26**	**0.322**	**n/a**	**9/9/2025**	**4.81**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-27**	**0.322**	**n/a**	**9/9/2025**	**2.46**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Calcium (mg/L)	**MW-14A**	**132**	**n/a**	**9/9/2025**	**277**	**Yes**	**84**	**0**	**n/a**	**0.0002731**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**MW-5B**	**30**	**n/a**	**9/10/2025**	**42**	**Yes**	**85**	**24.71**	**n/a**	**0.000267**	**NP Inter (normality) 1 of 2**
Magnesium (mg/L)	**MW-14A**	**45.4**	**n/a**	**9/9/2025**	**124**	**Yes**	**56**	**0**	**x^(1/3)**	**0.0002787**	**Param Inter 1 of 2**
Nickel (mg/L)	**MW-21**	**0.00628**	**n/a**	**9/9/2025**	**0.0206**	**Yes**	**56**	**98.21**	**n/a**	**0.0006037**	**NP Inter (NDs) 1 of 2**
Sulfate (mg/L)	**MW-14A**	**366**	**n/a**	**9/9/2025**	**953**	**Yes**	**85**	**0**	**n/a**	**0.000267**	**NP Inter (normality) 1 of 2**

Interwell Prediction Limits - Monitoring Wells (September 2025) - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:19 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Aluminum (mg/L)	MW-14A	2.76	n/a	9/9/2025	0.05ND	No	56	75	n/a	0.0006037	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-26	2.76	n/a	9/9/2025	0.05ND	No	56	75	n/a	0.0006037	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-27	2.76	n/a	9/9/2025	0.0623	No	56	75	n/a	0.0006037	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-4B	2.76	n/a	9/10/2025	0.05ND	No	56	75	n/a	0.0006037	NP Inter (NDs) 1 of 2
Aluminum (mg/L)	MW-5B	2.76	n/a	9/10/2025	0.05ND	No	56	75	n/a	0.0006037	NP Inter (NDs) 1 of 2
Arsenic (mg/L)	n/a	0.00784	n/a	n/a	9 future	n/a	83	54.22	n/a	0.0002792	NP Inter (NDs) 1 of 2
Barium (mg/L)	MW-14A	0.271	n/a	9/9/2025	0.0331	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-15A	0.271	n/a	9/10/2025	0.0302	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-21	0.271	n/a	9/9/2025	0.0412	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-24	0.271	n/a	9/9/2025	0.101	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-26	0.271	n/a	9/9/2025	0.0589	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-27	0.271	n/a	9/9/2025	0.0804	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-4B	0.271	n/a	9/10/2025	0.175	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-5B	0.271	n/a	9/10/2025	0.252	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Barium (mg/L)	MW-6A	0.271	n/a	9/10/2025	0.213	No	83	0	n/a	0.0002792	NP Inter (normality) 1 of 2
Beryllium (mg/L)	n/a	0.001	n/a	n/a	9 future	n/a	83	100	n/a	0.0002792	NP Inter (NDs) 1 of 2
Boron (mg/L)	**MW-14A**	**0.322**	**n/a**	**9/9/2025**	**16.1**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-15A**	**0.322**	**n/a**	**9/10/2025**	**5.51**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-21**	**0.322**	**n/a**	**9/9/2025**	**1.65**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	MW-24	0.322	n/a	9/9/2025	0.126	No	85	83.53	n/a	0.000267	NP Inter (NDs) 1 of 2
Boron (mg/L)	**MW-26**	**0.322**	**n/a**	**9/9/2025**	**4.81**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**MW-27**	**0.322**	**n/a**	**9/9/2025**	**2.46**	**Yes**	**85**	**83.53**	**n/a**	**0.000267**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	MW-4B	0.322	n/a	9/10/2025	0.1ND	No	85	83.53	n/a	0.000267	NP Inter (NDs) 1 of 2
Calcium (mg/L)	**MW-14A**	**132**	**n/a**	**9/9/2025**	**277**	**Yes**	**84**	**0**	**n/a**	**0.0002731**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	MW-15A	132	n/a	9/10/2025	77.2	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-21	132	n/a	9/9/2025	52.8	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-24	132	n/a	9/9/2025	72.9	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-26	132	n/a	9/9/2025	114	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-27	132	n/a	9/9/2025	55.5	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-4B	132	n/a	9/10/2025	94.9	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-5B	132	n/a	9/10/2025	114	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Calcium (mg/L)	MW-6A	132	n/a	9/10/2025	79	No	84	0	n/a	0.0002731	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-14A	30	n/a	9/9/2025	15.4	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-15A	30	n/a	9/10/2025	4.5	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-21	30	n/a	9/9/2025	5.1	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-24	30	n/a	9/9/2025	26.5	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-26	30	n/a	9/9/2025	17.1	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-27	30	n/a	9/9/2025	24.4	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	MW-4B	30	n/a	9/10/2025	18.9	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Chloride (mg/L)	**MW-5B**	**30**	**n/a**	**9/10/2025**	**42**	**Yes**	**85**	**24.71**	**n/a**	**0.000267**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	MW-6A	30	n/a	9/10/2025	16.8	No	85	24.71	n/a	0.000267	NP Inter (normality) 1 of 2
Cobalt (mg/L)	MW-27	0.00558	n/a	9/9/2025	0.0005ND	No	84	39.29	n/a	0.0002731	NP Inter (normality) 1 of 2
Cobalt (mg/L)	MW-4B	0.00558	n/a	9/10/2025	0.00247	No	84	39.29	n/a	0.0002731	NP Inter (normality) 1 of 2
Copper (mg/L)	MW-26	0.005	n/a	9/9/2025	0.005ND	No	56	100	n/a	0.0006037	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-14A	1	n/a	9/9/2025	0.261	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-15A	1	n/a	9/10/2025	0.293	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-21	1	n/a	9/9/2025	0.174	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-24	1	n/a	9/9/2025	0.222	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-26	1	n/a	9/9/2025	0.187	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-27	1	n/a	9/9/2025	0.173	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-4B	1	n/a	9/10/2025	0.274	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-5B	1	n/a	9/10/2025	0.173	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-6A	1	n/a	9/10/2025	0.273	No	84	80.95	n/a	0.0002731	NP Inter (NDs) 1 of 2
Iron (mg/L)	MW-14A	4.38	n/a	9/9/2025	0.1ND	No	56	30.36	n/a	0.0006037	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-26	4.38	n/a	9/9/2025	0.1ND	No	56	30.36	n/a	0.0006037	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-27	4.38	n/a	9/9/2025	0.1ND	No	56	30.36	n/a	0.0006037	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-4B	4.38	n/a	9/10/2025	0.931	No	56	30.36	n/a	0.0006037	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-5B	4.38	n/a	9/10/2025	2.07	No	56	30.36	n/a	0.0006037	NP Inter (normality) 1 of 2
Iron (mg/L)	MW-6A	4.38	n/a	9/10/2025	3.11	No	56	30.36	n/a	0.0006037	NP Inter (normality) 1 of 2
Lead (mg/L)	MW-21	0.00204	n/a	9/9/2025	0.0005ND	No	83	90.36	n/a	0.0002792	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-27	0.00204	n/a	9/9/2025	0.0005ND	No	83	90.36	n/a	0.0002792	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-4B	0.00204	n/a	9/10/2025	0.0005ND	No	83	90.36	n/a	0.0002792	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-5B	0.00204	n/a	9/10/2025	0.0005ND	No	83	90.36	n/a	0.0002792	NP Inter (NDs) 1 of 2
Magnesium (mg/L)	**MW-14A**	**45.4**	**n/a**	**9/9/2025**	**124**	**Yes**	**56**	**0**	**x^(1/3)**	**0.0002787**	**Param Inter 1 of 2**
Magnesium (mg/L)	MW-15A	45.4	n/a	9/10/2025	34.2	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-21	45.4	n/a	9/9/2025	23.7	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-24	45.4	n/a	9/9/2025	34.6	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-26	45.4	n/a	9/9/2025	44.8	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2

Interwell Prediction Limits - Monitoring Wells (September 2025) - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:19 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Magnesium (mg/L)	MW-27	45.4	n/a	9/9/2025	24.2	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-4B	45.4	n/a	9/10/2025	35.7	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-5B	45.4	n/a	9/10/2025	38.3	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Magnesium (mg/L)	MW-6A	45.4	n/a	9/10/2025	27.5	No	56	0	x^(1/3)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-14A	1.137	n/a	9/9/2025	0.005ND	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-21	1.137	n/a	9/9/2025	0.32	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-24	1.137	n/a	9/9/2025	0.0326	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-26	1.137	n/a	9/9/2025	0.146	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-27	1.137	n/a	9/9/2025	0.0138	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-4B	1.137	n/a	9/10/2025	0.386	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-5B	1.137	n/a	9/10/2025	0.53	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Manganese (mg/L)	MW-6A	1.137	n/a	9/10/2025	0.0942	No	55	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Molybdenum (mg/L)	MW-14A	0.00822	n/a	9/9/2025	0.002ND	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-15A	0.00822	n/a	9/10/2025	0.002ND	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-21	0.00822	n/a	9/9/2025	0.002ND	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-24	0.00822	n/a	9/9/2025	0.0025	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-26	0.00822	n/a	9/9/2025	0.002ND	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-4B	0.00822	n/a	9/10/2025	0.002ND	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	MW-5B	0.00822	n/a	9/10/2025	0.002ND	No	85	64.71	n/a	0.000267	NP Inter (NDs) 1 of 2
Nickel (mg/L)	**MW-21**	**0.00628**	**n/a**	**9/9/2025**	**0.0206**	**Yes**	**56**	**98.21**	**n/a**	**0.0006037**	**NP Inter (NDs) 1 of 2**
Nickel (mg/L)	MW-4B	0.00628	n/a	9/10/2025	0.005ND	No	56	98.21	n/a	0.0006037	NP Inter (NDs) 1 of 2
Selenium (mg/L)	MW-14A	0.005	n/a	9/9/2025	0.005ND	No	83	100	n/a	0.0002792	NP Inter (NDs) 1 of 2
Selenium (mg/L)	MW-15A	0.005	n/a	9/10/2025	0.005ND	No	83	100	n/a	0.0002792	NP Inter (NDs) 1 of 2
Selenium (mg/L)	MW-21	0.005	n/a	9/9/2025	0.005ND	No	83	100	n/a	0.0002792	NP Inter (NDs) 1 of 2
Strontium (mg/L)	MW-14A	0.3166	n/a	9/9/2025	0.243	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-15A	0.3166	n/a	9/10/2025	0.0826	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-21	0.3166	n/a	9/9/2025	0.166	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-24	0.3166	n/a	9/9/2025	0.079	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-26	0.3166	n/a	9/9/2025	0.12	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-27	0.3166	n/a	9/9/2025	0.122	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-4B	0.3166	n/a	9/10/2025	0.101	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-5B	0.3166	n/a	9/10/2025	0.161	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Strontium (mg/L)	MW-6A	0.3166	n/a	9/10/2025	0.162	No	56	0	sqrt(x)	0.0002787	Param Inter 1 of 2
Sulfate (mg/L)	**MW-14A**	**366**	**n/a**	**9/9/2025**	**953**	**Yes**	**85**	**0**	**n/a**	**0.000267**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	MW-15A	366	n/a	9/10/2025	162	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-21	366	n/a	9/9/2025	135	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-24	366	n/a	9/9/2025	38.2	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-26	366	n/a	9/9/2025	264	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-27	366	n/a	9/9/2025	55.2	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-4B	366	n/a	9/10/2025	55.8	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-5B	366	n/a	9/10/2025	47.6	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Sulfate (mg/L)	MW-6A	366	n/a	9/10/2025	20.7	No	85	0	n/a	0.000267	NP Inter (normality) 1 of 2
Vanadium (mg/L)	MW-27	0.00547	n/a	9/9/2025	0.005ND	No	56	98.21	n/a	0.0006037	NP Inter (NDs) 1 of 2
Zinc (mg/L)	MW-14A	0.02	n/a	9/9/2025	0.02ND	No	56	100	n/a	0.0006037	NP Inter (NDs) 1 of 2

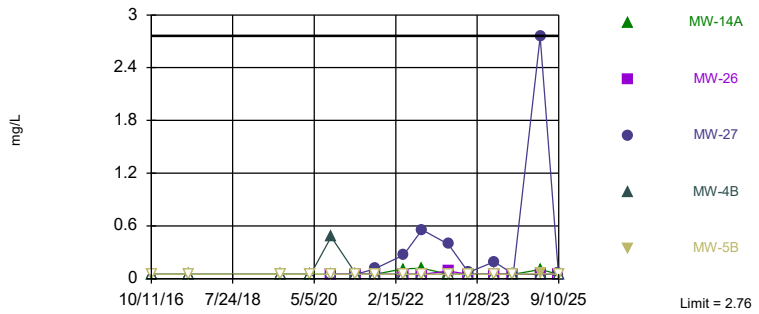
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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 56 background values. 75% NDs. Annual per-constituent alpha = 0.01081. Individual comparison alpha = 0.0006037 (1 of 2). Comparing 5 points to limit. Assumes 4 future values.

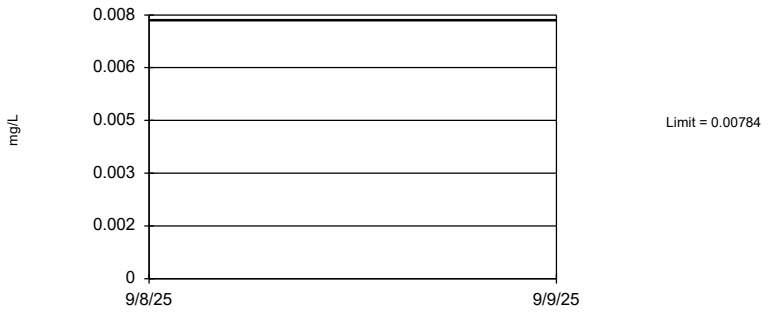
Constituent: Aluminum Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 83 background values. 54.22% NDs. Annual per-constituent alpha = 0.005014. Individual comparison alpha = 0.0002792 (1 of 2). Assumes 9 future values.

Constituent: Arsenic Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits

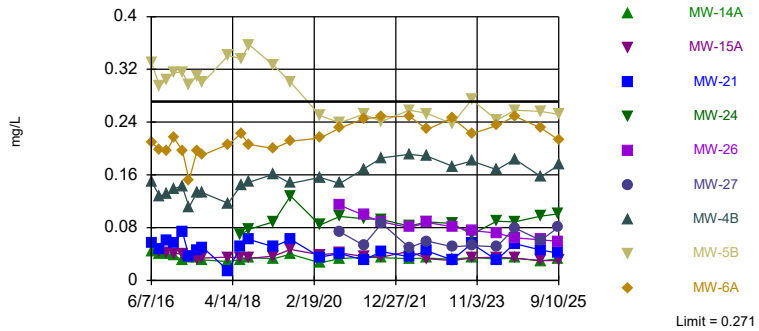
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 83 background values. Annual per-constituent alpha = 0.005014. Individual comparison alpha = 0.0002792 (1 of 2). Comparing 9 points to limit.

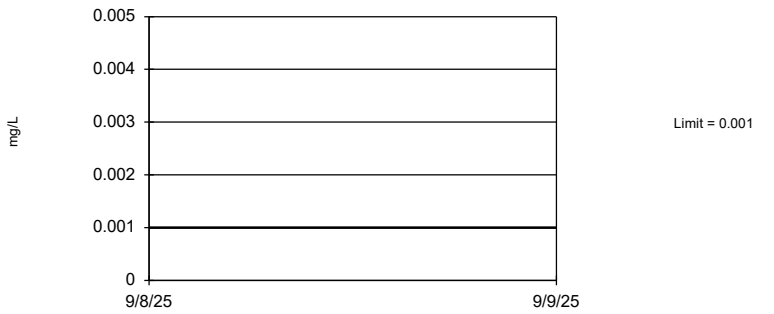
Constituent: Barium Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 83) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.005014. Individual comparison alpha = 0.0002792 (1 of 2). Assumes 9 future values.

Constituent: Beryllium Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits

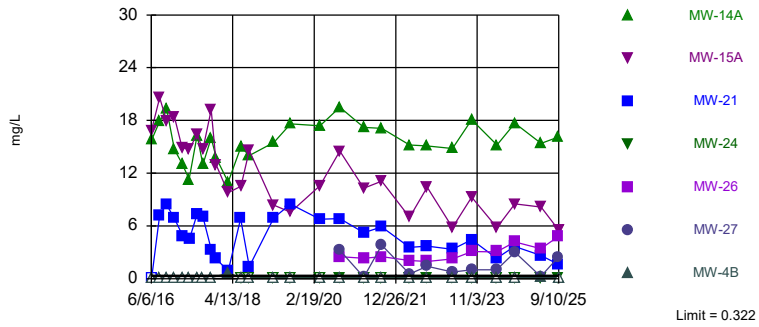
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Exceeds Limit: MW-14A, MW-15A, MW-21, MW-26, MW-27

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 85 background values. 83.53% NDs. Annual per-constituent alpha = 0.004795. Individual comparison alpha = 0.000267 (1 of 2). Comparing 7 points to limit. Assumes 2 future values.

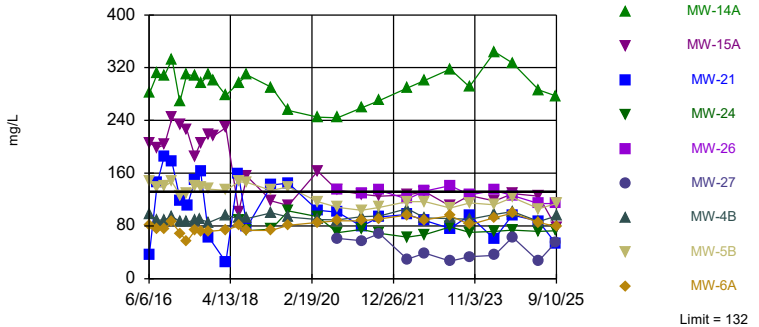
Constituent: Boron Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Exceeds Limit: MW-14A

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 84 background values. Annual per-constituent alpha = 0.004904. Individual comparison alpha = 0.0002731 (1 of 2). Comparing 9 points to limit.

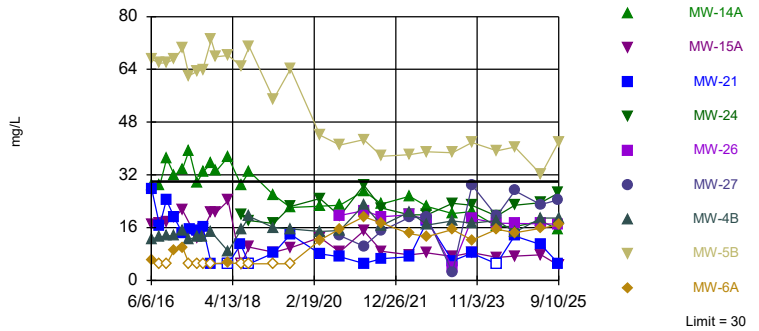
Constituent: Calcium Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Exceeds Limit: MW-5B

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 85 background values. 24.71% NDs. Annual per-constituent alpha = 0.004795. Individual comparison alpha = 0.000267 (1 of 2). Comparing 9 points to limit.

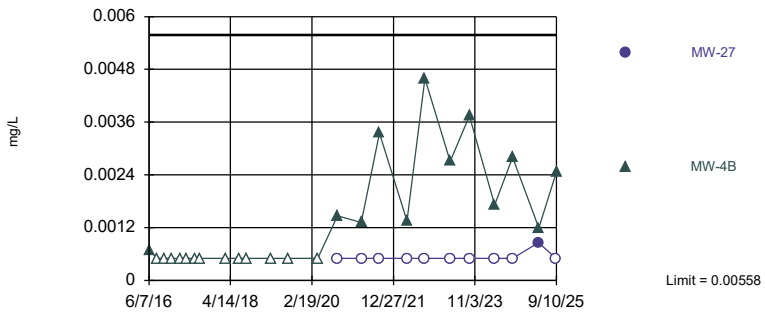
Constituent: Chloride Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



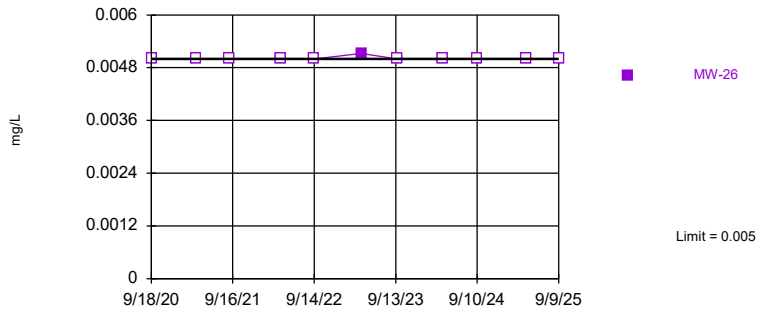
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 84 background values. 39.29% NDs. Annual per-constituent alpha = 0.004904. Individual comparison alpha = 0.0002731 (1 of 2). Comparing 2 points to limit. Assumes 7 future values.

Constituent: Cobalt Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Interwell Non-parametric



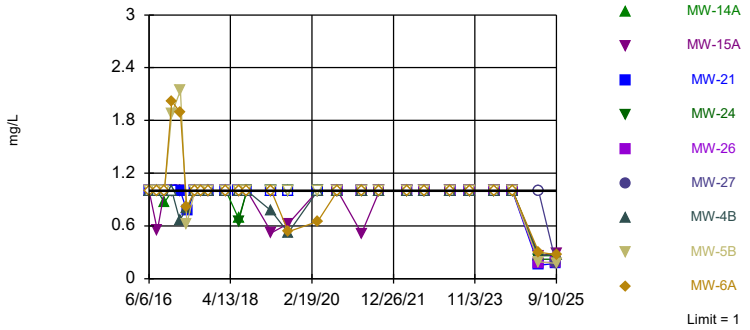
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 56) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.01081. Individual comparison alpha = 0.0006037 (1 of 2). Assumes 8 future values.

Constituent: Copper Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Interwell Non-parametric



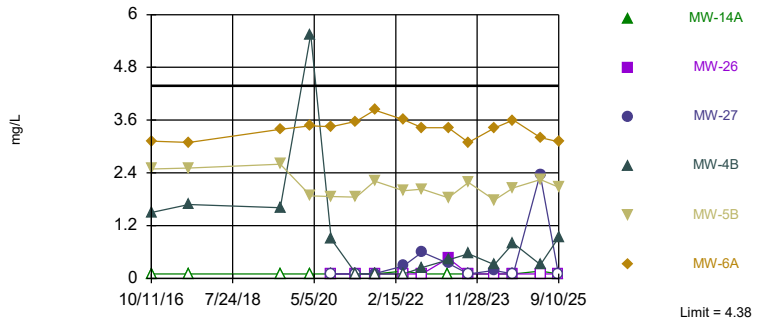
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 84 background values. 80.95% NDs. Annual per-constituent alpha = 0.004904. Individual comparison alpha = 0.0002731 (1 of 2). Comparing 9 points to limit.

Constituent: Fluoride Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Interwell Non-parametric



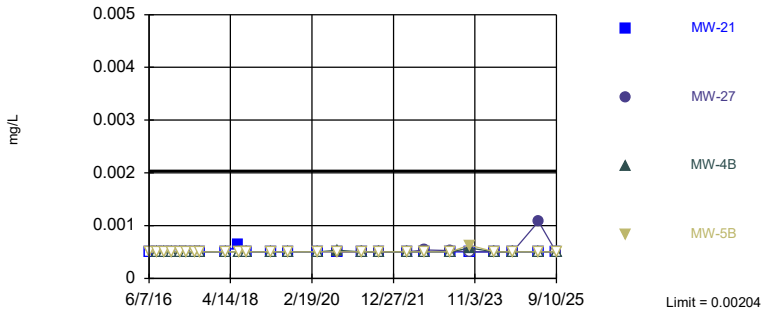
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 56 background values. 30.36% NDs. Annual per-constituent alpha = 0.01081. Individual comparison alpha = 0.0006037 (1 of 2). Comparing 6 points to limit. Assumes 3 future values.

Constituent: Iron Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.
Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 83 background values. 90.36% NDs. Annual per-constituent alpha = 0.005014. Individual comparison alpha = 0.0002792 (1 of 2). Comparing 4 points to limit. Assumes 5 future values.

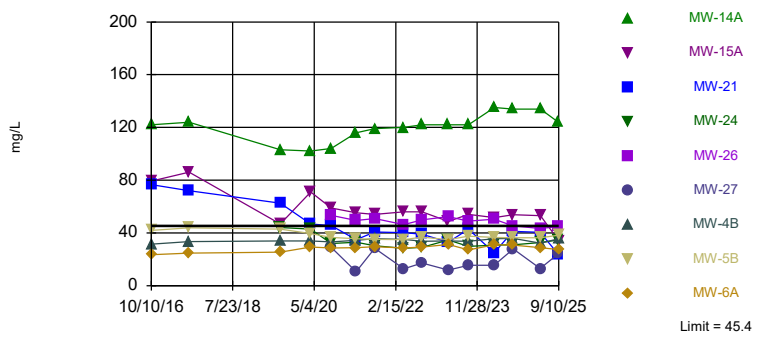
Constituent: Lead Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Exceeds Limit: MW-14A

Prediction Limit

Interwell Parametric



Background Data Summary (based on cube root transformation): Mean=3.163, Std. Dev.=0.1782, n=56. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9464, critical = 0.942. Kappa = 2.272 (c=21, w=9, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0002787. Comparing 9 points to limit.

Constituent: Magnesium Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

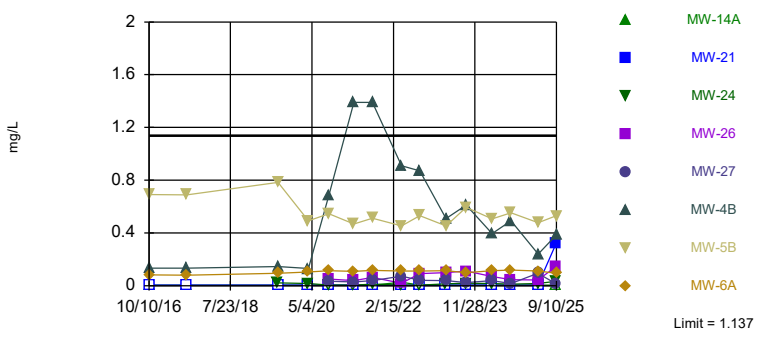
Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.4934, Std. Dev.=0.2519, n=55. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.963, critical = 0.94. Kappa = 2.276 (c=21, w=9, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0002787. Comparing 8 points to limit. Assumes 1 future value.

Constituent: Manganese Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

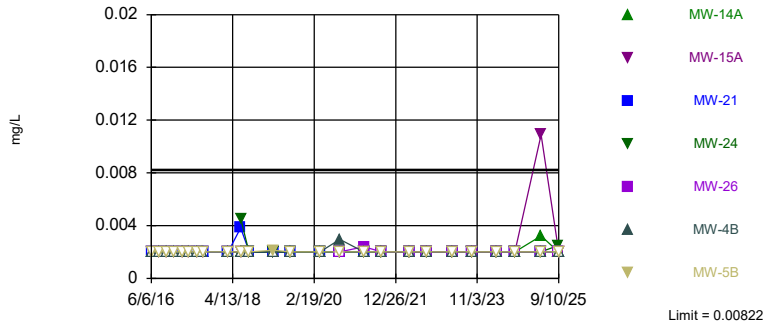
Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 85 background values. 64.71% NDs. Annual per-constituent alpha = 0.004795. Individual comparison alpha = 0.000267 (1 of 2). Comparing 7 points to limit. Assumes 2 future values.

Constituent: Molybdenum Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

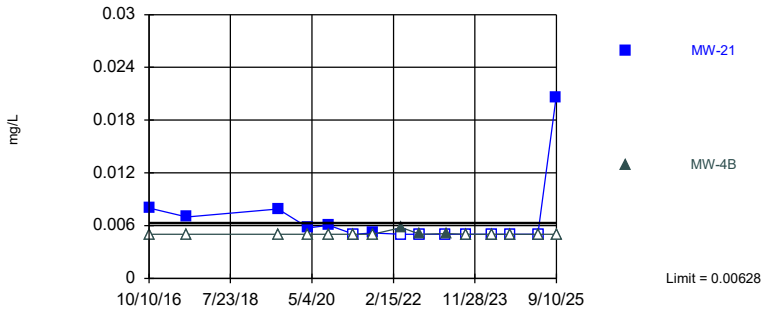
Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Exceeds Limit: MW-21

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 56 background values. 98.21% NDs. Annual per-constituent alpha = 0.01081. Individual comparison alpha = 0.0006037 (1 of 2). Comparing 2 points to limit. Assumes 7 future values.

Constituent: Nickel Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits

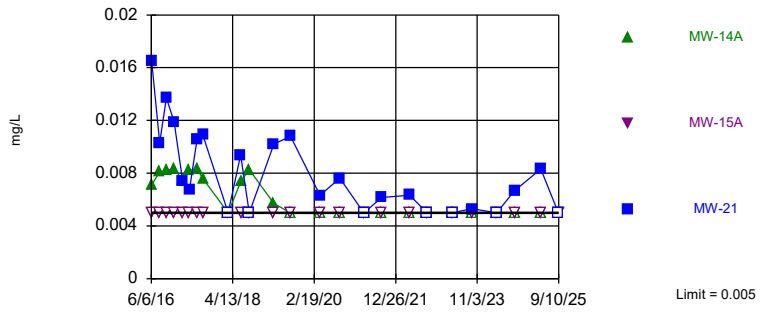
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 83) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.005014. Individual comparison alpha = 0.0002792 (1 of 2). Comparing 3 points to limit. Assumes 6 future values.

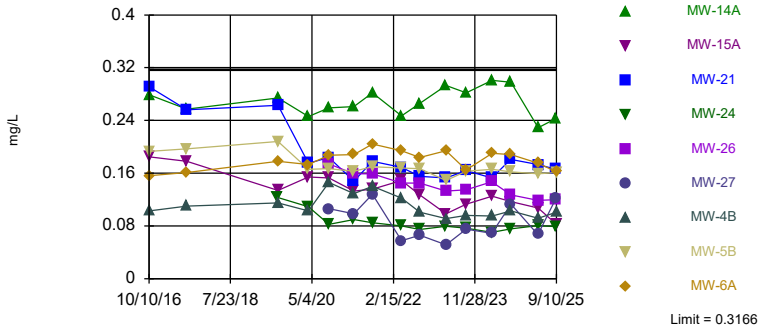
Constituent: Selenium Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.3707, Std. Dev.=0.08446, n=56. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9527, critical = 0.942. Kappa = 2.272 (c=21, w=9, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0002787. Comparing 9 points to limit.

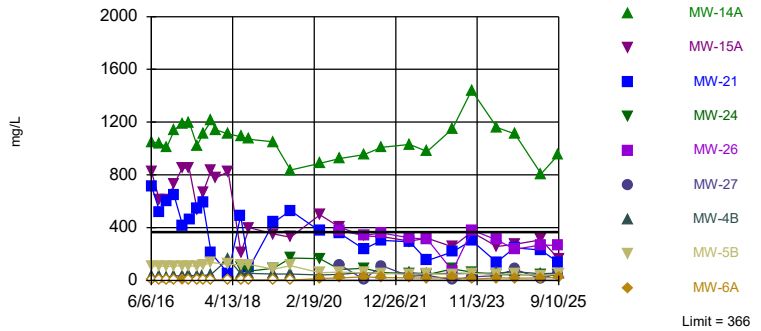
Constituent: Strontium Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Exceeds Limit: MW-14A

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 85 background values. Annual per-constituent alpha = 0.004795. Individual comparison alpha = 0.000267 (1 of 2). Comparing 9 points to limit.

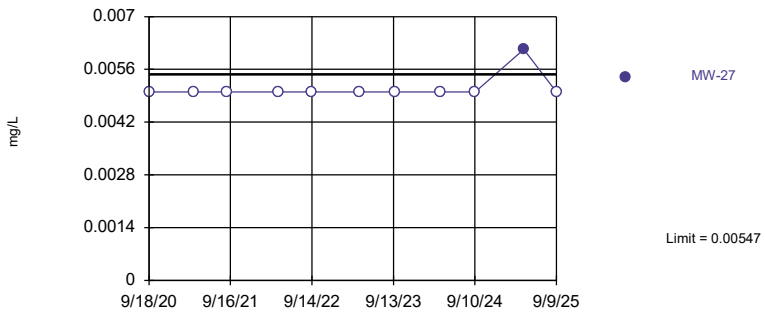
Constituent: Sulfate Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 56 background values. 98.21% NDs. Annual per-constituent alpha = 0.01081. Individual comparison alpha = 0.0006037 (1 of 2). Assumes 8 future values.

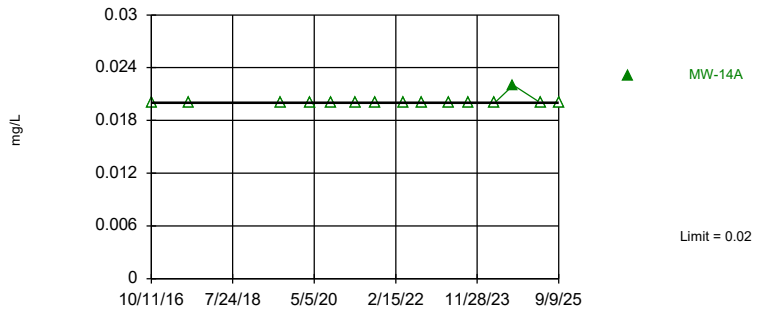
Constituent: Vanadium Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 56) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.01081. Individual comparison alpha = 0.0006037 (1 of 2). Assumes 8 future values.

Constituent: Zinc Analysis Run 12/15/2025 3:18 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Prediction Limit

Constituent: Aluminum (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-4B	MW-5B	MW-23 (bg)	MW-22 (bg)	MW-26	MW-27
10/10/2016	<0.05	0.0826							
10/11/2016			<0.05	<0.05	<0.05				
8/7/2017	<0.05	<0.05		<0.05					
8/8/2017			<0.05		<0.05				
8/6/2019	<0.05					0.253	<0.05		
8/7/2019		<0.05	<0.05	<0.05	<0.05				
4/7/2020	<0.05	<0.05	<0.05	<0.05	<0.05	0.552	<0.05		
9/18/2020	<0.05	<0.05	<0.05	0.475	<0.05	<0.05	<0.05	<0.05	<0.05
4/5/2021	<0.05	<0.05	<0.05	<0.05	<0.05	0.39	<0.05	<0.05	<0.05
9/1/2021	<0.05	<0.05	<0.05	<0.05	<0.05	0.135	<0.05	<0.05	0.112
4/20/2022	<0.05	<0.05	0.111	<0.05	<0.05	0.478	<0.05	<0.05	0.27
9/14/2022	<0.05	<0.05	0.119	<0.05	<0.05	0.142	<0.05	<0.05	0.558
4/10/2023							<0.05		
4/11/2023	<0.05		<0.05						
4/12/2023		<0.05		<0.05	<0.05	0.233		0.0884	0.394
9/18/2023		<0.05				0.105	<0.05		
9/19/2023	<0.05		<0.05						
9/20/2023				<0.05	<0.05			<0.05	0.0737
4/11/2024		<0.05				0.243	<0.05		
4/12/2024	<0.05							<0.05	0.191
4/15/2024			<0.05	<0.05	<0.05				
9/10/2024		<0.05				0.168	<0.05		
9/11/2024	<0.05		<0.05					<0.05	0.0529
9/12/2024				<0.05	<0.05				
4/15/2025						2.76	0.139		
4/16/2025	<0.05	<0.05						0.0503	2.75
4/17/2025			0.104						
4/18/2025				<0.05	0.0574				
9/8/2025		<0.05				0.209	<0.05		
9/9/2025	<0.05		<0.05					<0.05	0.0623
9/10/2025				<0.05	<0.05				

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-08 (bg)	MW-22 (bg)	MW-23 (bg)
6/6/2016	0.00298			
6/7/2016		<0.002		
8/15/2016	0.00369			
8/16/2016		<0.002		
10/10/2016	0.00328	<0.002		
12/14/2016	0.00312	<0.002		
2/17/2017	0.00298			
2/21/2017		<0.002		
4/17/2017	<0.002	<0.002		
6/19/2017	0.00262	<0.002		
8/7/2017	0.00317	<0.002		
3/5/2018	<0.002			
3/6/2018		<0.002	<0.002	
6/19/2018	0.00211	<0.002	0.00245	
6/20/2018				<0.002
8/27/2018	0.0036	<0.002	0.00261	<0.002
3/18/2019		<0.002		
3/19/2019	0.0056		<0.002	<0.002
8/6/2019		<0.002	<0.002	<0.002
8/7/2019	0.00784			
4/7/2020	0.00697	<0.002	<0.002	<0.002
9/18/2020	0.00748	<0.002	<0.002	<0.002
4/5/2021	0.00393	<0.002	0.00289	<0.002
9/1/2021	0.00781	<0.002	0.00267	<0.002
4/20/2022	0.00371	<0.002	0.0034	<0.002
9/14/2022	0.00497	<0.002	0.00285	<0.002
4/10/2023			0.00421	
4/11/2023		0.00247		
4/12/2023	0.00224			<0.002
9/18/2023	0.00501		0.00421	<0.002
9/19/2023		<0.002		
4/11/2024	<0.002		0.00634	<0.002
4/12/2024		0.0039		
9/10/2024	0.00525		0.00749	<0.002
9/11/2024		0.00466		
4/15/2025			0.00671	<0.002
4/16/2025	<0.002	0.0045		
9/8/2025	0.00429		0.00768	<0.002
9/9/2025		0.00317		

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-4B	MW-5B	MW-6A	MW-08 (bg)	MW-21	MW-14A	MW-15A	MW-22 (bg)
6/6/2016	0.168							2.13 (o)	
6/7/2016		0.15	0.331	0.209	0.0861				
6/8/2016						0.0573	0.0443		
8/15/2016	0.161					0.0482	0.0402	0.044	
8/16/2016		0.128	0.295	0.199	0.0671				
10/10/2016	0.163				0.0706	0.0606			
10/11/2016		0.131	0.304	0.196			0.0391	0.0426	
12/12/2016		0.139	0.315	0.216		0.056			
12/14/2016	0.15				0.0645		0.0383	0.0406	
2/17/2017	0.151	0.143					0.0306	0.0402	
2/21/2017			0.316	0.197	0.0594 (F1)	0.0735			
4/17/2017	0.138	0.111	0.296	0.152	0.0636		0.0341	0.0364	
4/18/2017						0.0356			
6/19/2017	0.154				0.076				
6/20/2017		0.133	0.31			0.0461			
6/21/2017				0.197			0.0338	0.0327	
8/7/2017	0.157	0.133			0.0596				
8/8/2017			0.3	0.19		0.0499	0.031	0.0338	
3/5/2018	0.129								
3/6/2018		0.117	0.341	0.206	0.0617	0.0148			0.15
3/7/2018							0.0285	0.0352	
6/19/2018	0.162				0.0761	0.0515			0.184
6/20/2018							0.0314	0.0338	
6/21/2018		0.144	0.336	0.222					
8/27/2018	0.216				0.0649				0.181
8/28/2018		0.149				0.0622			
8/29/2018			0.357	0.206			0.0344	0.0335	
3/18/2019					0.0751				
3/19/2019	0.185	0.161	0.326	0.2					0.209
3/20/2019						0.0511	0.0328	0.037	
8/6/2019					0.0733				0.215
8/7/2019	0.215	0.147	0.301	0.211		0.0624	0.0398	0.047	
4/7/2020	0.199	0.156	0.25	0.216	0.0613	0.0352	0.0266	0.0389	0.222
9/18/2020	0.227	0.147	0.239	0.231	0.0549	0.0407	0.0328	0.0416	0.222
4/5/2021	0.196	0.169	0.252	0.245	0.0596	0.0309	0.0355	0.0365	0.242
9/1/2021	0.233	0.186	0.241	0.248	0.0623	0.0434	0.0345	0.0355	0.247
4/20/2022	0.208	0.191	0.258	0.249	0.0631	0.036	0.0327	0.0443	0.239
9/14/2022	0.223	0.188	0.253	0.229	0.0703	0.0447	0.034	0.0327	0.243
4/10/2023									0.227
4/11/2023					0.07	0.031	0.032	0.0299	
4/12/2023	0.19	0.173	0.237	0.246					
9/18/2023	0.233								0.256
9/19/2023					0.0782	0.0559	0.0348	0.0338	
9/20/2023		0.181	0.274	0.222					
4/11/2024	0.193								0.271
4/12/2024					0.0857	0.031			
4/15/2024		0.168	0.243	0.235			0.0323	0.0353	
9/10/2024	0.219					0.0555			0.268
9/11/2024					0.0944		0.0338	0.0335	
9/12/2024		0.184	0.258	0.249					
4/15/2025									0.247
4/16/2025	0.19				0.0867	0.046			

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-4B	MW-5B	MW-6A	MW-08 (bg)	MW-21	MW-14A	MW-15A	MW-22 (bg)
4/17/2025							0.0294	0.03	
4/18/2025		0.157	0.256	0.231					
9/8/2025	0.172								0.262
9/9/2025					0.0852	0.0412	0.0331		
9/10/2025		0.175	0.252	0.213				0.0302	

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-23 (bg)	MW-26	MW-27
6/6/2016				
6/7/2016				
6/8/2016				
8/15/2016				
8/16/2016				
10/10/2016				
10/11/2016				
12/12/2016				
12/14/2016				
2/17/2017				
2/21/2017				
4/17/2017				
4/18/2017				
6/19/2017				
6/20/2017				
6/21/2017				
8/7/2017				
8/8/2017				
3/5/2018				
3/6/2018				
3/7/2018				
6/19/2018				
6/20/2018	0.0695	0.106		
6/21/2018				
8/27/2018	0.0776	0.0779		
8/28/2018				
8/29/2018				
3/18/2019	0.0889			
3/19/2019		0.0922		
3/20/2019				
8/6/2019	0.128	0.0635		
8/7/2019				
4/7/2020	0.084	0.0654		
9/18/2020	0.0969	0.0491	0.114	0.0738
4/5/2021	0.0936	0.0608	0.0989	0.0534
9/1/2021	0.0922	0.0497	0.0889	0.0862
4/20/2022	0.0826	0.0572	0.0802	0.0498
9/14/2022	0.0887	0.0507	0.0876	0.0594
4/10/2023				
4/11/2023	0.0863			
4/12/2023		0.0518	0.0815	0.0508
9/18/2023		0.0533		
9/19/2023	0.0698			
9/20/2023			0.0755	0.053
4/11/2024		0.0547		
4/12/2024	0.0899		0.0716	0.0511
4/15/2024				
9/10/2024		0.0521		
9/11/2024	0.0885		0.0643	0.0795
9/12/2024				
4/15/2025		0.067		
4/16/2025	0.0973		0.0617	0.0607

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-23 (bg)	MW-26	MW-27
4/17/2025				
4/18/2025				
9/8/2025		0.0468		
9/9/2025	0.101		0.0589	0.0804
9/10/2025				

Prediction Limit

Constituent: Beryllium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-08 (bg)	MW-22 (bg)	MW-23 (bg)
6/6/2016	<0.001			
6/7/2016		<0.001		
8/15/2016	<0.001			
8/16/2016		<0.001		
10/10/2016	<0.001	<0.001		
12/14/2016	<0.001	<0.001		
2/17/2017	<0.001			
2/21/2017		<0.001		
4/17/2017	<0.001	<0.001		
6/19/2017	<0.001	<0.001		
8/7/2017	<0.001	<0.001		
3/5/2018	<0.001			
3/6/2018		<0.001	<0.001	
6/19/2018	<0.001	<0.001	<0.001	
6/20/2018				<0.001
8/27/2018	<0.001	<0.001	<0.001	<0.001
3/18/2019		<0.001		
3/19/2019	<0.001		<0.001	<0.001
8/6/2019		<0.001	<0.001	<0.001
8/7/2019	<0.001			
4/7/2020	<0.001	<0.001	<0.001	<0.001
9/18/2020	<0.001	<0.001	<0.001	<0.001
4/5/2021	<0.001	<0.001	<0.001	<0.001
9/1/2021	<0.001	<0.001	<0.001	<0.001
4/20/2022	<0.001	<0.001	<0.001	<0.001
9/14/2022	<0.001	<0.001	<0.001	<0.001
4/10/2023			<0.001	
4/11/2023		<0.001		
4/12/2023	<0.001			<0.001
9/18/2023	<0.001		<0.001	<0.001
9/19/2023		<0.001		
4/11/2024	<0.001		<0.001	<0.001
4/12/2024		<0.001		
9/10/2024	<0.001		<0.001	<0.001
9/11/2024		<0.001		
4/15/2025			<0.001	<0.001
4/16/2025	<0.001	<0.001		
9/8/2025	<0.001		<0.001	<0.001
9/9/2025		<0.001		

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-08 (bg)	MW-4B	MW-21	MW-14A	MW-22 (bg)	MW-23 (bg)	MW-24
6/6/2016	16.8	<0.1							
6/7/2016			<0.1	<0.1					
6/8/2016					<0.1	15.8			
8/15/2016	20.6	<0.1			7.23	17.9			
8/16/2016			<0.1	<0.1					
10/10/2016		<0.1	<0.1		8.45				
10/11/2016	17.9			<0.1		19.3			
12/12/2016				<0.1	6.93				
12/14/2016	18.4	<0.1	<0.1			14.7			
2/17/2017	14.9	<0.1		<0.1		13.1			
2/21/2017			<0.1		4.87				
4/17/2017	14.7	<0.1	<0.1	<0.1		11.3			
4/18/2017					4.49				
6/19/2017		<0.1	<0.1						
6/20/2017				<0.1	7.36				
6/21/2017	16.4					16.3			
8/7/2017		<0.1	<0.1	<0.1					
8/8/2017	14.7				7.05	13			
10/16/2017		<0.1	<0.1	<0.1	3.33				
10/17/2017	19.2					16			
11/28/2017	12.9 (R)				2.24 (R)	13.7 (R)			
3/5/2018		<0.1							
3/6/2018			<0.1	0.66	0.885		<0.1		
3/7/2018	9.8					11			
6/19/2018		<0.1	<0.1		6.84		<0.1		
6/20/2018	10.5					15		<0.1	<0.1
6/21/2018				<0.1					
8/27/2018		<0.1	<0.1				<0.1	<0.1	<0.1
8/28/2018				<0.1	1.36				
8/29/2018	14.6					14			
3/18/2019			<0.1						<0.1
3/19/2019		<0.1		<0.1			0.299	<0.1	
3/20/2019	8.35				6.95	15.5			
8/6/2019			0.205				<0.1	<0.1	<0.1
8/7/2019	7.56	<0.1		<0.1	8.46	17.6			
4/7/2020	10.6	<0.1	<0.1	<0.1	6.76	17.4	<0.1	<0.1	<0.1
9/18/2020	14.5	<0.1	<0.1	<0.1	6.82	19.5	0.263	0.15	0.109
4/5/2021	10.3	<0.1	<0.1	<0.1	5.24	17.2	<0.1	<0.1	<0.1
9/1/2021	11.1	<0.1	<0.1	<0.1	5.88	17.1	<0.1	<0.1	<0.1
4/20/2022	6.98	<0.1	<0.1	<0.1	3.57	15.2	<0.1	<0.1	<0.1
9/14/2022	10.4	<0.1	<0.1	<0.1	3.69	15.1	0.322	0.204	0.134
4/10/2023							0.247		
4/11/2023	5.8		<0.1		3.35	14.8			0.114
4/12/2023		<0.1		<0.1				0.145	
9/18/2023		<0.1					0.207	0.128	
9/19/2023	9.28		<0.1		4.42	18.1			<0.1
9/20/2023				<0.1					
4/11/2024		<0.1					<0.1	<0.1	
4/12/2024			<0.1		2.31				<0.1
4/15/2024	5.8			<0.1		15.2			
9/10/2024		<0.1			3.68		0.243	0.126	
9/11/2024	8.5		<0.1			17.7			<0.1

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-08 (bg)	MW-4B	MW-21	MW-14A	MW-22 (bg)	MW-23 (bg)	MW-24
9/12/2024				<0.1					
4/15/2025							<0.1	<0.1	
4/16/2025		<0.1	<0.1		2.64				<0.1
4/17/2025	8.16					15.4			
4/18/2025				0.169					
9/8/2025		<0.1					0.187	0.123	
9/9/2025			<0.1		1.65	16.1			0.126
9/10/2025	5.51			<0.1					

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27
6/6/2016		
6/7/2016		
6/8/2016		
8/15/2016		
8/16/2016		
10/10/2016		
10/11/2016		
12/12/2016		
12/14/2016		
2/17/2017		
2/21/2017		
4/17/2017		
4/18/2017		
6/19/2017		
6/20/2017		
6/21/2017		
8/7/2017		
8/8/2017		
10/16/2017		
10/17/2017		
11/28/2017		
3/5/2018		
3/6/2018		
3/7/2018		
6/19/2018		
6/20/2018		
6/21/2018		
8/27/2018		
8/28/2018		
8/29/2018		
3/18/2019		
3/19/2019		
3/20/2019		
8/6/2019		
8/7/2019		
4/7/2020		
9/18/2020	2.5	3.25
4/5/2021	2.33	0.17
9/1/2021	2.49	3.82
4/20/2022	2.07	0.549
9/14/2022	1.97	1.41
4/10/2023		
4/11/2023		
4/12/2023	2.26	0.741
9/18/2023		
9/19/2023		
9/20/2023	3.08	1
4/11/2024		
4/12/2024	3.07	1.01
4/15/2024		
9/10/2024		
9/11/2024	4.19	3.02

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-26	MW-27
9/12/2024		
4/15/2025		
4/16/2025	3.4	0.244
4/17/2025		
4/18/2025		
9/8/2025		
9/9/2025	4.81	2.46
9/10/2025		

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-6A	MW-4B	MW-5B	MW-14A	MW-21	MW-08 (bg)	MW-22 (bg)
6/6/2016	206	89.3							
6/7/2016			81.4	98.2	147			152 (o)	
6/8/2016						281	37.2		
8/15/2016	199	80.7				311	146		
8/16/2016			75.4	88.8	139			117	
10/10/2016		83.3					185	118	
10/11/2016	203		75.7	89.3	140	308			
12/12/2016			85.6	94.5	147		178		
12/14/2016	244	86.5				333		109	
2/17/2017	233	81.2		86.8		268			
2/21/2017			68.8		126		118	89.9	
4/17/2017	226	79.2	56.3	85.9	130	310		96.5	
4/18/2017							110		
6/19/2017		83.6						113	
6/20/2017				88.7	140		149		
6/21/2017	186		72.9			307			
8/7/2017		85.5		89.7				91.3	
8/8/2017	206		71.2		139	296	163		
10/16/2017		83.3		85.3			62.3	77	
10/17/2017	218		71.9		136	310			
11/28/2017	217 (R)					301 (R)			
3/5/2018		77.3							
3/6/2018			74.1	95.8	134		25.1	74.7	69.8
3/7/2018	229					278			
6/19/2018		88.5					159	115	91.5
6/20/2018	102					297			
6/21/2018			80.1	91.4	147				
8/27/2018		85.4						83.6	80.7
8/28/2018				91.3			78.7		
8/29/2018	155		73.3		146	309			
3/18/2019								97.6	
3/19/2019		76.3	73.2	99.7	134				91.6
3/20/2019	118					290	142		
8/6/2019								132	83.8
8/7/2019	111	78.9	80.9	93.8	139	255	145		
4/7/2020	163	75.4	85.1	89.6	117	245	104	92.4	80.9
9/18/2020	134	74.2	87.9	89	108	244	101	77.7	75.5
4/5/2021	128	78.8	87.6	94.1	104	259	79.5	81.2	78.4
9/1/2021	125	80	90.6	95.1	108	270	93.5	78.3	79.4
4/20/2022	127	90.4	96.5	106	117	289	97.5	69.6	80.2
9/14/2022	132	82	89	92.3	117	301	88.2	76.8	79.6
4/10/2023									80.4
4/11/2023	110					318	76	78.2	
4/12/2023		83.7	95.4	91.3	107				
9/18/2023		84.7							79
9/19/2023	126					291	96	79.4	
9/20/2023			82.1	90.4	115				
4/11/2024		96.2							83.1
4/12/2024							59.9	84.2	
4/15/2024	118		92.4	97.7	112	344			
9/10/2024		97.8					96.6		84.3
9/11/2024	129					327		88.6	

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-6A	MW-4B	MW-5B	MW-14A	MW-21	MW-08 (bg)	MW-22 (bg)
9/12/2024			99.4	102	123				
4/15/2025									74.5
4/16/2025		99.6					87.4	84.1	
4/17/2025	125					286			
4/18/2025			85.2	86.8	106				
9/8/2025		82.6							74.6
9/9/2025						277	52.8	79.6	
9/10/2025	77.2		79	94.9	114				

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-23 (bg)	MW-26	MW-27
6/6/2016				
6/7/2016				
6/8/2016				
8/15/2016				
8/16/2016				
10/10/2016				
10/11/2016				
12/12/2016				
12/14/2016				
2/17/2017				
2/21/2017				
4/17/2017				
4/18/2017				
6/19/2017				
6/20/2017				
6/21/2017				
8/7/2017				
8/8/2017				
10/16/2017				
10/17/2017				
11/28/2017				
3/5/2018				
3/6/2018				
3/7/2018				
6/19/2018				
6/20/2018	88	70.5		
6/21/2018				
8/27/2018	72.8	63.9		
8/28/2018				
8/29/2018				
3/18/2019	75			
3/19/2019		59.7		
3/20/2019				
8/6/2019	103	59.5		
8/7/2019				
4/7/2020	94.3	61		
9/18/2020	69.9	52.1	134	61
4/5/2021	74.6	56.3	130	57.6
9/1/2021	69	56.1	134	68.4
4/20/2022	62.8	54	121	29.6
9/14/2022	66.8	54.5	133	38.7
4/10/2023				
4/11/2023	78.6			
4/12/2023		55.3	141	26.8
9/18/2023		56		
9/19/2023	70.5			
9/20/2023			127	33.4
4/11/2024		59.7		
4/12/2024	71.6		134	35.4
4/15/2024				
9/10/2024		58		
9/11/2024	73.6		126	63.1

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-23 (bg)	MW-26	MW-27
9/12/2024				
4/15/2025		56		
4/16/2025	71.6		114	26.4
4/17/2025				
4/18/2025				
9/8/2025		44.9		
9/9/2025	72.9		114	55.5
9/10/2025				

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-08 (bg)	MW-6A	MW-4B	MW-5B	MW-14A	MW-21	MW-22 (bg)
6/6/2016	6.22	17.1							
6/7/2016			19.8	5.97	12.6	67			
6/8/2016							28.7	27.7	
8/15/2016	<5	17.2					28.7	16.6	
8/16/2016			17.8	<5	13.2	65.9			
10/10/2016	<5		16.2					24.4	
10/11/2016		17.6		<5	13.6	66	37		
12/12/2016				9.08	13.5	67		19.2	
12/14/2016	<5	19	17.2				31.9		
2/17/2017	<5	21.5			15.1		33.5		
2/21/2017			15.4	9.93		70.4		14.2	
4/17/2017	<5	47.4 (o)	17.1	<5	12.5	62.1	39.4		
4/18/2017								15.6	
6/19/2017	<5		14.1						
6/20/2017					13.2	63.4		15.1	
6/21/2017		12.8		<5			29.7		
8/7/2017	<5		14		13.2				
8/8/2017		15.4		<5		64	32.9	16.1	
10/16/2017	<5		14.4		14.7			5.09	
10/17/2017		20.5		<5		73	35.4		
11/28/2017		20.7 (R)				67.8 (R)	33.2 (R)		
3/5/2018	<5								
3/6/2018			14.5	5.33	8.81	68.2		<5	30
3/7/2018		24.2					37.4		
6/19/2018	<5		14.9					10.9	27.2
6/20/2018		<5					29		
6/21/2018				<5	15.3	65			
8/27/2018	<5		15.6						29.8
8/28/2018					19.4			<5	
8/29/2018		10.1		<5		70.8	33.1		
3/18/2019			16.1						
3/19/2019	<5			<5	16	55			27.6
3/20/2019		8.54					25.8	8.3	
8/6/2019			17.1						26.9
8/7/2019	<5	9.91		<5	15.6	64.1	22.1	14	
4/7/2020	<5	13	17.2	12.2	14.8	44	22.5	8.05	24.8
9/18/2020	<5	8.63	14.7	15.6	15.1	41	22.8	7.21	23.2
4/5/2021	<5	15	22.3	19.3	22.9	42.7	27.1	5.14	28.1
9/1/2021	<5	8.86	16.3	17.4	16.7	37.6	23.2	6.58	20
4/20/2022	<5	7.71	15.8	14.2	20.8	38.1	25.5	7.19	20.2
9/14/2022	<5	8.29	16.7	13.3	16.8	39	22.4	18	7.04
4/10/2023									18.2
4/11/2023		7.3	17.9				20.3	5.93	
4/12/2023	5.86			15.4	18	38.7			
9/18/2023	<5								18.4
9/19/2023		8.41	19.9				20.9	8.23	
9/20/2023				12.2	17.4	41.8			
4/11/2024	<5								15.8
4/12/2024			17.2					<5	
4/15/2024		7.01		15.5	18.1	39.3	16.4		
9/10/2024	9.65							13.5	16.6
9/11/2024		7.41	20.1				16.3		

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-08 (bg)	MW-6A	MW-4B	MW-5B	MW-14A	MW-21	MW-22 (bg)
9/12/2024				14.4	14.6	40.5			
4/15/2025									16.1
4/16/2025	12.8		18.6					10.9	
4/17/2025		7.79					18		
4/18/2025				15.8	18.9	32.1			
9/8/2025	8.5								14.5
9/9/2025			20.8				15.4	5.1	
9/10/2025		4.5		16.8	18.9	42			

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-23 (bg)	MW-27	MW-26
6/6/2016				
6/7/2016				
6/8/2016				
8/15/2016				
8/16/2016				
10/10/2016				
10/11/2016				
12/12/2016				
12/14/2016				
2/17/2017				
2/21/2017				
4/17/2017				
4/18/2017				
6/19/2017				
6/20/2017				
6/21/2017				
8/7/2017				
8/8/2017				
10/16/2017				
10/17/2017				
11/28/2017				
3/5/2018				
3/6/2018				
3/7/2018				
6/19/2018				
6/20/2018	19.9	15.9		
6/21/2018				
8/27/2018	18.1	14.2		
8/28/2018				
8/29/2018				
3/18/2019	17.3			
3/19/2019		10.5		
3/20/2019				
8/6/2019	22.4	13.8		
8/7/2019				
4/7/2020	24.8	15.7		
9/18/2020	19.5	14.4	13.6	19.7
4/5/2021	28.9	21.4	10.4	21.1
9/1/2021	21.9	15.2	15	19.3
4/20/2022	19.9	16.9	19.1	19.9
9/14/2022	19.9	16.2	19	18.4
4/10/2023				
4/11/2023	23.4			
4/12/2023		17.7	2.45	3.83
9/18/2023		19.2		
9/19/2023	22.8			
9/20/2023			28.9	18.8
4/11/2024		19.2		
4/12/2024	19.5		19.5	17.4
4/15/2024				
9/10/2024		21.7		
9/11/2024	22.8		27.2	17.3

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-23 (bg)	MW-27	MW-26
9/12/2024				
4/15/2025		25.1		
4/16/2025	23.6		23	17.2
4/17/2025				
4/18/2025				
9/8/2025		25.2		
9/9/2025	26.5		24.4	17.1
9/10/2025				

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-08 (bg)	MW-4B	MW-22 (bg)	MW-23 (bg)	MW-27
6/6/2016	0.000555					
6/7/2016		<0.0005	0.000681			
8/15/2016	<0.0005					
8/16/2016		<0.0005	<0.0005			
10/10/2016	0.000523	<0.0005				
10/11/2016			<0.0005			
12/12/2016			<0.0005			
12/14/2016	0.000638	<0.0005				
2/17/2017	0.000663		<0.0005			
2/21/2017		<0.0005				
4/17/2017	0.000779	<0.0005	<0.0005			
6/19/2017	0.000621	0.000601				
6/20/2017			<0.0005			
8/7/2017	0.000695	0.00051	<0.0005			
3/5/2018	0.000627					
3/6/2018		<0.0005	<0.0005	0.00142		
5/14/2018				0.0012		
6/19/2018	0.00107	<0.0005		0.00129		
6/20/2018					0.00161	
6/21/2018			<0.0005			
8/27/2018	0.00088	<0.0005		0.00149	0.00066	
8/28/2018			<0.0005			
3/18/2019		0.00177				
3/19/2019	0.000783		<0.0005	<0.0005	0.00176	
8/6/2019		0.00558		<0.0005	<0.0005	
8/7/2019	0.000572		<0.0005			
4/7/2020	0.000581	0.000517	<0.0005	<0.0005	0.000817	
9/18/2020	0.000751	0.000738	0.00147	<0.0005	<0.0005	<0.0005
4/5/2021	0.000752	0.000839	0.00132	<0.0005	0.000517	<0.0005
9/1/2021	0.000576	0.00127	0.00335	<0.0005	<0.0005	<0.0005
4/20/2022	0.00104	0.00143	0.00135	<0.0005	0.000561	<0.0005
9/14/2022	0.00109	0.00164	0.00459	<0.0005	<0.0005	<0.0005
4/10/2023				<0.0005		
4/11/2023		0.0014				
4/12/2023	0.00142		0.00271		<0.0005	<0.0005
9/18/2023	0.000995			<0.0005	<0.0005	
9/19/2023		0.00126				
9/20/2023			0.00374			<0.0005
4/11/2024	0.00122			<0.0005	<0.0005	
4/12/2024		0.0018				<0.0005
4/15/2024			0.00172			
9/10/2024	0.000977			<0.0005	<0.0005	
9/11/2024		0.00216				<0.0005
9/12/2024			0.0028			
4/15/2025				<0.0005	0.000879	
4/16/2025	0.00154	0.00163				0.000855
4/18/2025			0.00119			
9/8/2025	0.0009			<0.0005	<0.0005	
9/9/2025		0.00142				<0.0005
9/10/2025			0.00247			

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Copper (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-22 (bg)	MW-23 (bg)	MW-26
10/10/2016	<0.005	<0.005			
8/7/2017	<0.005	<0.005			
8/6/2019	<0.005		<0.005	<0.005	
8/7/2019		<0.005			
4/7/2020	<0.005	<0.005	<0.005	<0.005	
9/18/2020	<0.005	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005	<0.005
4/10/2023			<0.005		
4/11/2023	<0.005				
4/12/2023		<0.005		<0.005	0.00512
9/18/2023		<0.005	<0.005	<0.005	
9/19/2023	<0.005				
9/20/2023					<0.005
4/11/2024		<0.005	<0.005	<0.005	
4/12/2024	<0.005				<0.005
9/10/2024		<0.005	<0.005	<0.005	
9/11/2024	<0.005				<0.005
4/15/2025			<0.005	<0.005	
4/16/2025	<0.005	<0.005			<0.005
9/8/2025		<0.005	<0.005	<0.005	
9/9/2025	<0.005				<0.005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-08 (bg)	MW-5B	MW-4B	MW-6A	MW-21	MW-14A	MW-22 (bg)
6/6/2016	<1	0.731							
6/7/2016			<1	<1	<1	<1			
6/8/2016							<1	<1	
8/15/2016	0.549	<1					<1	<1	
8/16/2016			<1	<1	<1	<1			
10/10/2016		<1	<1				<1		
10/11/2016	<1			<1	<1	<1		0.867	
12/12/2016				1.88	<1	2.02	<1		
12/14/2016	<1	<1	0.72					<1	
2/17/2017	<1	<1			0.664			<1	
2/21/2017			<1	2.14		1.89	0.993		
4/17/2017	6.7 (o)	0.774	1.69 (o)	0.627	0.801	0.814		1.93 (o)	
4/18/2017							0.768		
6/19/2017		<1	<1						
6/20/2017				<1	<1		<1		
6/21/2017	<1					<1		<1	
8/7/2017		<1	<1		<1				
8/8/2017	<1			<1		<1	<1	<1	
10/16/2017		<1	<1		<1		<1		
10/17/2017	<1			<1		<1		<1	
3/5/2018		<1							
3/6/2018			<1	<1	<1	<1	<1		<1
3/7/2018	<1							<1	
6/19/2018		<1	0.826				<1		<1
6/20/2018	<1							0.684	
6/21/2018				<1	<1	<1			
8/27/2018		<1	<1						<1
8/28/2018					<1		<1		
8/29/2018	<1			<1		<1		<1	
3/18/2019			<1						
3/19/2019		<1		<1	0.771	<1			<1
3/20/2019	0.523						<1	<1	
8/6/2019			0.643						0.507
8/7/2019	0.625	0.596		<1	0.525	0.535	<1	<1	
4/7/2020	<1	<1	0.864	<1	<1	0.652	<1	<1	<1
9/18/2020	<1	<1	<1	<1	<1	<1	<1	<1	<1
4/5/2021	0.516	<1	<1	<1	<1	<1	<1	<1	<1
9/1/2021	<1	<1	<1	<1	<1	<1	<1	<1	<1
4/20/2022	<1	<1	<1	<1	<1	<1	<1	<1	<1
9/14/2022	<1	<1	<1	<1	<1	<1	<1	<1	<1
4/10/2023									<1
4/11/2023	<1		<1				<1	<1	
4/12/2023		<1		<1	<1	<1			
9/18/2023		<1							<1
9/19/2023	<1		<1				<1	<1	
9/20/2023				<1	<1	<1			
4/11/2024		<1							<1
4/12/2024			<1				<1		
4/15/2024	<1			<1	<1	<1		<1	
9/10/2024		<1					<1		<1
9/11/2024	<1		<1					<1	
9/12/2024				<1	<1	<1			

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-08 (bg)	MW-5B	MW-4B	MW-6A	MW-21	MW-14A	MW-22 (bg)
4/15/2025									0.268
4/16/2025		0.281	0.312				0.154		
4/17/2025	0.257							0.262	
4/18/2025				0.193	0.268	0.303			
9/8/2025		0.218							0.289
9/9/2025			0.311				0.174	0.261	
9/10/2025	0.293			0.173	0.274	0.273			

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-23 (bg)	MW-27	MW-26
6/6/2016				
6/7/2016				
6/8/2016				
8/15/2016				
8/16/2016				
10/10/2016				
10/11/2016				
12/12/2016				
12/14/2016				
2/17/2017				
2/21/2017				
4/17/2017				
4/18/2017				
6/19/2017				
6/20/2017				
6/21/2017				
8/7/2017				
8/8/2017				
10/16/2017				
10/17/2017				
3/5/2018				
3/6/2018				
3/7/2018				
6/19/2018				
6/20/2018	0.653	<1		
6/21/2018				
8/27/2018	<1	<1		
8/28/2018				
8/29/2018				
3/18/2019	<1			
3/19/2019		<1		
3/20/2019				
8/6/2019	<1	<1		
8/7/2019				
4/7/2020	<1	<1		
9/18/2020	<1	<1	<1	<1
4/5/2021	<1	<1	<1	<1
9/1/2021	<1	<1	<1	<1
4/20/2022	<1	<1	<1	<1
9/14/2022	<1	<1	<1	<1
4/10/2023				
4/11/2023	<1			
4/12/2023		<1	<1	<1
9/18/2023		<1		
9/19/2023	<1			
9/20/2023			<1	<1
4/11/2024		<1		
4/12/2024	<1		<1	<1
4/15/2024				
9/10/2024		<1		
9/11/2024	<1		<1	<1
9/12/2024				

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-23 (bg)	MW-27	MW-26
4/15/2025		0.236		
4/16/2025	0.22		<1	0.181
4/17/2025				
4/18/2025				
9/8/2025		0.281		
9/9/2025	0.222		0.173	0.187
9/10/2025				

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-4B	MW-6A	MW-14A	MW-5B	MW-22 (bg)	MW-23 (bg)	MW-26
10/10/2016	<0.1	1.8							
10/11/2016			1.5	3.12	<0.1	2.49			
8/7/2017	<0.1	1.58	1.68						
8/8/2017				3.09	<0.1	2.51			
8/6/2019	<0.1						<0.1	0.231	
8/7/2019		3.33	1.61	3.39	<0.1	2.6			
4/7/2020	<0.1	3.36	5.55	3.47	<0.1	1.88	<0.1	0.485	
9/18/2020	<0.1	4.38	0.895	3.45	<0.1	1.86	<0.1	<0.1	<0.1
4/5/2021	0.167	2.08	<0.1	3.57	<0.1	1.85	<0.1	0.348	<0.1
9/1/2021	0.141	4.37	<0.1	3.83	<0.1	2.21	<0.1	0.136	<0.1
4/20/2022	0.565	2.49	<0.1	3.61	0.165	1.99	<0.1	0.492	<0.1
9/14/2022	0.609	2.7	0.25	3.43	<0.1	2.03	<0.1	0.117	<0.1
4/10/2023							<0.1		
4/11/2023	0.708				<0.1				
4/12/2023		1.09	0.423	3.43		1.83		0.21	0.456
9/18/2023		2.45					<0.1	<0.1	
9/19/2023	0.451				<0.1				
9/20/2023			0.559	3.09		2.18			<0.1
4/11/2024		0.982					<0.1	0.239	
4/12/2024	1.29								<0.1
4/15/2024			0.309	3.42	<0.1	1.78			
9/10/2024		2.86					0.189	0.16	
9/11/2024	1.53				<0.1				<0.1
9/12/2024			0.797	3.6		2.06			
4/15/2025							0.215	2.53	
4/16/2025	1.44	1.4							<0.1
4/17/2025					0.163				
4/18/2025			0.31	3.2		2.25			
9/8/2025		2.58					0.196	0.192	
9/9/2025	1.13				<0.1				<0.1
9/10/2025			0.931	3.11		2.07			

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-27
10/10/2016	
10/11/2016	
8/7/2017	
8/8/2017	
8/6/2019	
8/7/2019	
4/7/2020	
9/18/2020	<0.1
4/5/2021	<0.1
9/1/2021	0.11
4/20/2022	0.281
9/14/2022	0.594
4/10/2023	
4/11/2023	
4/12/2023	0.338
9/18/2023	
9/19/2023	
9/20/2023	<0.1
4/11/2024	
4/12/2024	0.181
4/15/2024	
9/10/2024	
9/11/2024	<0.1
9/12/2024	
4/15/2025	
4/16/2025	2.37
4/17/2025	
4/18/2025	
9/8/2025	
9/9/2025	<0.1
9/10/2025	

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-08 (bg)	MW-5B	MW-21	MW-4B	MW-22 (bg)	MW-23 (bg)	MW-27
6/6/2016	<0.0005							
6/7/2016		<0.0005	<0.0005		0.00147 (o)			
6/8/2016				<0.0005				
8/15/2016	<0.0005			<0.0005				
8/16/2016		<0.0005	<0.0005		<0.0005			
10/10/2016	<0.0005	<0.0005		<0.0005				
10/11/2016			<0.0005		<0.0005			
12/12/2016			<0.0005	<0.0005	<0.0005			
12/14/2016	<0.0005	<0.0005						
2/17/2017	<0.0005				<0.0005			
2/21/2017		<0.0005	<0.0005	<0.0005				
4/17/2017	<0.0005	<0.0005	<0.0005		<0.0005			
4/18/2017				<0.0005				
6/19/2017	<0.0005	<0.0005						
6/20/2017			<0.0005	<0.0005	<0.0005			
8/7/2017	<0.0005	<0.0005			<0.0005			
8/8/2017			<0.0005	<0.0005				
3/5/2018	<0.0005							
3/6/2018		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		
6/19/2018	<0.0005	<0.0005		0.000633		<0.0005		
6/20/2018							0.00151	
6/21/2018			<0.0005		<0.0005			
8/27/2018	<0.0005	<0.0005				<0.0005	0.000626	
8/28/2018				<0.0005	<0.0005			
8/29/2018			<0.0005					
3/18/2019		<0.0005						
3/19/2019	<0.0005		<0.0005		<0.0005	<0.0005	0.00204	
3/20/2019				<0.0005				
8/6/2019		<0.0005				<0.0005	0.000663	
8/7/2019	<0.0005		<0.0005	<0.0005	<0.0005			
4/7/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00116	
9/18/2020	<0.0005	<0.0005	<0.0005	<0.0005	0.000532	<0.0005	<0.0005	<0.0005
4/5/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.000624	<0.0005
9/1/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
4/20/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.000596	<0.0005
9/14/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.000536
4/10/2023						<0.0005		
4/11/2023		<0.0005		<0.0005				
4/12/2023	<0.0005		<0.0005		<0.0005		<0.0005	0.000528
9/18/2023	<0.0005					<0.0005	<0.0005	
9/19/2023		<0.0005		<0.0005				
9/20/2023			0.000627		0.000576			<0.0005
4/11/2024	<0.0005					<0.0005	<0.0005	
4/12/2024		<0.0005		<0.0005				<0.0005
4/15/2024			<0.0005		<0.0005			
9/10/2024	<0.0005			<0.0005		<0.0005	<0.0005	
9/11/2024		<0.0005						<0.0005
9/12/2024			<0.0005		<0.0005			
4/15/2025						<0.0005	0.00115	
4/16/2025	<0.0005	<0.0005		<0.0005				0.00108
4/18/2025			<0.0005		<0.0005			
9/8/2025	<0.0005					<0.0005	<0.0005	

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-08 (bg)	MW-5B	MW-21	MW-4B	MW-22 (bg)	MW-23 (bg)	MW-27
9/9/2025		<0.0005		<0.0005				<0.0005
9/10/2025			<0.0005		<0.0005			

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-21	MW-10 (bg)	MW-14A	MW-15A	MW-4B	MW-6A	MW-5B	MW-22 (bg)
10/10/2016	44.1	76.6	33.8						
10/11/2016				122	79.3	31.4	23.5	42	
8/7/2017	36.4		37.8			33.4			
8/8/2017		72.1		124	86		24.7	43.8	
8/6/2019	50.1								33
8/7/2019		62.5	30	103	46.9	34	25.4	42.8	
4/7/2020	37.1	46.9	31.4	102	71	34	29.4	39.6	34.5
9/18/2020	31.8	45.6	31.9	104	59	33.2	28.5	36.6	31.1
4/5/2021	31.8	34.9	32.2	116	55.4	34.3	28.8	35.7	31
9/1/2021	31	40.8	31.3	119	54	35.6	29.6	35.2	31.4
4/20/2022	27.7	40.2	35	120	56	35.1	28.6	35	29.6
9/14/2022	30.1	39.1	33.3	122	56.1	33.6	29.4	36.8	31.8
4/10/2023									31.5
4/11/2023	31.1	33		122	48.7				
4/12/2023			34.5			33.9	31.2	34.8	
9/18/2023			34.7						32
9/19/2023	31.5	42.8		122	54				
9/20/2023						33.6	27.2	37.6	
4/11/2024			41.5						33
4/12/2024	32.7	24.9							
4/15/2024				135	51.6	35.6	31	36.5	
9/10/2024		41.3	41.1						33.1
9/11/2024	34.3			134	53.8				
9/12/2024						35.9	30.8	36.4	
4/15/2025									30.7
4/16/2025	34.4	40.5	46.1						
4/17/2025				134	53.2				
4/18/2025						32.3	28.8	36.3	
9/8/2025			36.4						31
9/9/2025	32.4	23.7		124					
9/10/2025					34.2	35.7	27.5	38.3	

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-23 (bg)	MW-24	MW-26	MW-27
10/10/2016				
10/11/2016				
8/7/2017				
8/8/2017				
8/6/2019	24.7	44.2		
8/7/2019				
4/7/2020	28.5	43		
9/18/2020	24.3	32	53.4	29.2
4/5/2021	25.3	33	49.5	10.7
9/1/2021	24.8	30.3	50.8	28.4
4/20/2022	23.3	28.3	46.4	12.9
9/14/2022	24.6	29.1	49.9	17.3
4/10/2023				
4/11/2023		34.7		
4/12/2023	24.4		52.3	11.9
9/18/2023	25.4			
9/19/2023		29.9		
9/20/2023			48.9	15.5
4/11/2024	26.6			
4/12/2024		30.7	50.5	15.4
4/15/2024				
9/10/2024	25.9			
9/11/2024		31	45.3	27.9
9/12/2024				
4/15/2025	27.1			
4/16/2025		32.7	43.3	13
4/17/2025				
4/18/2025				
9/8/2025	21.9			
9/9/2025		34.6	44.8	24.2
9/10/2025				

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-21	MW-10 (bg)	MW-5B	MW-4B	MW-6A	MW-14A	MW-24	MW-23 (bg)
10/10/2016	0.28	<0.01	0.151						
10/11/2016				0.69	0.133	0.0818	<0.01		
8/7/2017	0.237		0.166		0.132				
8/8/2017		<0.01		0.689		0.0802	<0.01		
8/6/2019	0.758							0.0223	0.0443
8/7/2019		<0.01	0.177	0.784	0.145	0.0941	<0.01		
4/7/2020	0.119	<0.01	0.184	0.492	0.13	0.103	<0.01	0.0156	0.0718
9/18/2020	0.652	<0.01	0.251	0.546	0.686	0.113	<0.01	<0.01	0.0127
4/5/2021	0.185	<0.01	0.199	0.467	1.39	0.109	<0.01	<0.01	0.0634
9/1/2021	0.663	<0.01	0.221	0.512	1.39	0.117	<0.01	0.0126	0.0444
4/20/2022	0.411	<0.01	0.231	0.454	0.91	0.112	0.0264	<0.01	0.0588
9/14/2022	0.749	<0.01	0.31	0.532	0.871	0.112	<0.01	<0.01	0.0222
4/10/2023									
4/11/2023	0.309	<0.01					<0.01	0.0144	
4/12/2023			0.396	0.453	0.51	0.113			0.0372
9/18/2023			0.266						0.0169
9/19/2023	0.37	<0.01					<0.01	0.0183	
9/20/2023				0.594	0.612	0.0995			
4/11/2024			0.233						0.037
4/12/2024	0.509	<0.01						0.0156	
4/15/2024				0.506	0.395	0.114	<0.01		
9/10/2024		<0.01	0.255						0.0301
9/11/2024	0.491						<0.01	0.0111	
9/12/2024				0.554	0.491	0.118			
4/15/2025									0.0499
4/16/2025	0.434	<0.01	0.285					0.0166	
4/17/2025							<0.01		
4/18/2025				0.478	0.241	0.111			
9/8/2025			0.165						0.02
9/9/2025	0.366	0.32					<0.01	0.0326	
9/10/2025				0.53	0.386	0.0942			

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-22 (bg)	MW-26	MW-27
10/10/2016			
10/11/2016			
8/7/2017			
8/8/2017			
8/6/2019	1.74 (o)		
8/7/2019			
4/7/2020	0.0896		
9/18/2020	1.36	0.0501	0.0345
4/5/2021	0.175	0.0395	0.0278
9/1/2021	1.27	0.0629	0.0375
4/20/2022	0.106	0.019	0.0722
9/14/2022	0.795	0.0917	0.0406
4/10/2023	0.0633		
4/11/2023			
4/12/2023		0.0983	0.0378
9/18/2023	0.767		
9/19/2023			
9/20/2023		0.111	0.0231
4/11/2024	0.118		
4/12/2024		0.0697	0.0376
4/15/2024			
9/10/2024	0.677		
9/11/2024		0.0458	0.0168
9/12/2024			
4/15/2025	0.382		
4/16/2025		0.0423	0.094
4/17/2025			
4/18/2025			
9/8/2025	0.48		
9/9/2025		0.146	0.0138
9/10/2025			

Prediction Limit

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-4B	MW-5B	MW-08 (bg)	MW-14A	MW-21	MW-22 (bg)	MW-23 (bg)
6/6/2016	<0.002	<0.002							
6/7/2016			<0.002	<0.002	<0.002				
6/8/2016						<0.002	<0.002		
8/15/2016	<0.002	<0.002				<0.002	<0.002		
8/16/2016			<0.002	<0.002	<0.002				
10/10/2016		<0.002			<0.002		<0.002		
10/11/2016	<0.002		<0.002	<0.002		<0.002			
12/12/2016			<0.002	<0.002			<0.002		
12/14/2016	<0.002	<0.002			<0.002	<0.002			
2/17/2017	<0.002	<0.002	<0.002			<0.002			
2/21/2017				<0.002	<0.002		<0.002		
4/17/2017	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002			
4/18/2017							<0.002		
6/19/2017		<0.002			<0.002				
6/20/2017			<0.002	<0.002			<0.002		
6/21/2017	<0.002					<0.002			
8/7/2017		<0.002	<0.002		<0.002				
8/8/2017	<0.002			<0.002		<0.002	<0.002		
3/5/2018		<0.002							
3/6/2018			<0.002	<0.002	0.0022		<0.002	0.00568	
3/7/2018	<0.002					<0.002			
5/14/2018					<0.002			0.00385	
6/19/2018		<0.002			<0.002		0.00383	0.00423	
6/20/2018	<0.002					<0.002			0.00822
6/21/2018			<0.002	<0.002					
8/27/2018		0.0022			0.00224			0.00424	0.00617
8/28/2018			<0.002				<0.002		
8/29/2018	<0.002			<0.002		<0.002			
3/18/2019					<0.002				
3/19/2019		0.00341	<0.002	0.00212				0.00263	<0.002
3/20/2019	<0.002					<0.002	<0.002		
8/6/2019					<0.002			0.00574	<0.002
8/7/2019	<0.002	0.00219	<0.002	<0.002		<0.002	<0.002		
4/7/2020	<0.002	0.00215	<0.002	<0.002	<0.002	<0.002	<0.002	0.00297	<0.002
9/18/2020	<0.002	<0.002	0.00296	<0.002	<0.002	<0.002	<0.002	0.00529	<0.002
4/5/2021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
9/1/2021	<0.002	0.00217	<0.002	<0.002	0.00218	<0.002	<0.002	0.00558	<0.002
4/20/2022	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.0042	<0.002
9/14/2022	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.00446	<0.002
4/10/2023								0.00364	
4/11/2023	<0.002				<0.002	<0.002	<0.002		
4/12/2023		<0.002	<0.002	<0.002					<0.002
9/18/2023		<0.002						0.00661	<0.002
9/19/2023	<0.002				<0.002	<0.002	<0.002		
9/20/2023			<0.002	<0.002					
4/11/2024		<0.002						0.00217	<0.002
4/12/2024					<0.002		<0.002		
4/15/2024	<0.002		<0.002	<0.002		<0.002			
9/10/2024		0.00287					<0.002	0.00578	<0.002
9/11/2024	<0.002				0.00205	<0.002			
9/12/2024			<0.002	<0.002					
4/15/2025								0.00415	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-4B	MW-5B	MW-08 (bg)	MW-14A	MW-21	MW-22 (bg)	MW-23 (bg)
4/16/2025		<0.002			<0.002		<0.002		
4/17/2025	0.0109					0.00322			
4/18/2025			<0.002	<0.002					
9/8/2025		0.00216						0.0051	<0.002
9/9/2025					<0.002	<0.002	<0.002		
9/10/2025	<0.002		<0.002	<0.002					

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-26
6/6/2016		
6/7/2016		
6/8/2016		
8/15/2016		
8/16/2016		
10/10/2016		
10/11/2016		
12/12/2016		
12/14/2016		
2/17/2017		
2/21/2017		
4/17/2017		
4/18/2017		
6/19/2017		
6/20/2017		
6/21/2017		
8/7/2017		
8/8/2017		
3/5/2018		
3/6/2018		
3/7/2018		
5/14/2018		
6/19/2018		
6/20/2018	0.00447	
6/21/2018		
8/27/2018	<0.002	
8/28/2018		
8/29/2018		
3/18/2019	<0.002	
3/19/2019		
3/20/2019		
8/6/2019	<0.002	
8/7/2019		
4/7/2020	<0.002	
9/18/2020	<0.002	<0.002
4/5/2021	<0.002	0.00239
9/1/2021	<0.002	<0.002
4/20/2022	<0.002	<0.002
9/14/2022	<0.002	<0.002
4/10/2023		
4/11/2023	<0.002	
4/12/2023		<0.002
9/18/2023		
9/19/2023	<0.002	
9/20/2023		<0.002
4/11/2024		
4/12/2024	<0.002	<0.002
4/15/2024		
9/10/2024		
9/11/2024	<0.002	<0.002
9/12/2024		
4/15/2025		

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Molybdenum (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-26
4/16/2025	<0.002	<0.002
4/17/2025		
4/18/2025		
9/8/2025		
9/9/2025	0.0025	<0.002
9/10/2025		

Prediction Limit

Constituent: Nickel (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-21	MW-4B	MW-23 (bg)	MW-22 (bg)
10/10/2016	<0.005	<0.005	0.00799			
10/11/2016				<0.005		
8/7/2017	<0.005	<0.005		<0.005		
8/8/2017			0.00699			
8/6/2019	<0.005				<0.005	<0.005
8/7/2019		<0.005	0.0079	<0.005		
4/7/2020	<0.005	<0.005	0.00576	<0.005	<0.005	<0.005
9/18/2020	0.00628	<0.005	0.00604	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	0.00518	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	0.00578	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	0.00503	<0.005	<0.005
4/10/2023						<0.005
4/11/2023	<0.005		<0.005			
4/12/2023		<0.005		0.0051	<0.005	
9/18/2023		<0.005			<0.005	<0.005
9/19/2023	<0.005		<0.005			
9/20/2023				<0.005		
4/11/2024		<0.005			<0.005	<0.005
4/12/2024	<0.005		<0.005			
4/15/2024				<0.005		
9/10/2024		<0.005	<0.005		<0.005	<0.005
9/11/2024	<0.005					
9/12/2024				<0.005		
4/15/2025					<0.005	<0.005
4/16/2025	<0.005	<0.005	<0.005			
4/18/2025				<0.005		
9/8/2025		<0.005			<0.005	<0.005
9/9/2025	<0.005		0.0206			
9/10/2025				<0.005		

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-08 (bg)	MW-21	MW-14A	MW-22 (bg)	MW-23 (bg)
6/6/2016	<0.005	<0.005					
6/7/2016			<0.005				
6/8/2016				0.0165	0.0071		
8/15/2016	<0.005	<0.005		0.0103	0.00811		
8/16/2016			<0.005				
10/10/2016	<0.005		<0.005	0.0137			
10/11/2016		<0.005			0.00821		
12/12/2016				0.0119			
12/14/2016	<0.005	<0.005	<0.005		0.00834		
2/17/2017	<0.005	<0.005			0.00752		
2/21/2017			<0.005	0.0074			
4/17/2017	<0.005	<0.005	<0.005		0.00823		
4/18/2017				0.00674			
6/19/2017	<0.005		<0.005				
6/20/2017				0.0106			
6/21/2017		<0.005			0.00829		
8/7/2017	<0.005		<0.005				
8/8/2017		<0.005		0.0109	0.00759		
3/5/2018	<0.005						
3/6/2018			<0.005	<0.005		<0.005	
3/7/2018		0.00502			<0.005		
6/19/2018	<0.005		<0.005	0.00939		<0.005	
6/20/2018		<0.005			0.00739		<0.005
8/27/2018	<0.005		<0.005			<0.005	<0.005
8/28/2018				<0.005			
8/29/2018		<0.005			0.00827		
3/18/2019			<0.005				
3/19/2019	<0.005					<0.005	<0.005
3/20/2019		<0.005		0.0102	0.00569		
8/6/2019			<0.005			<0.005	<0.005
8/7/2019	<0.005	<0.005		0.0108	<0.005		
4/7/2020	<0.005	<0.005	<0.005	0.00632	<0.005	<0.005	<0.005
9/18/2020	<0.005	<0.005	<0.005	0.00762	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	0.00617	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	0.00634	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4/10/2023						<0.005	
4/11/2023		<0.005	<0.005	<0.005	<0.005		
4/12/2023	<0.005						<0.005
9/18/2023	<0.005					<0.005	<0.005
9/19/2023		<0.005	<0.005	0.0053	<0.005		
4/11/2024	<0.005					<0.005	<0.005
4/12/2024			<0.005	<0.005			
4/15/2024		<0.005			<0.005		
9/10/2024	<0.005			0.00666		<0.005	<0.005
9/11/2024		<0.005	<0.005		<0.005		
4/15/2025						<0.005	<0.005
4/16/2025	<0.005		<0.005	0.00832			
4/17/2025		<0.005			<0.005		
9/8/2025	<0.005					<0.005	<0.005
9/9/2025			<0.005	<0.005	<0.005		

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-10 (bg)	MW-15A	MW-08 (bg)	MW-21	MW-14A	MW-22 (bg)	MW-23 (bg)
9/10/2025		<0.005					

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Strontium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-21	MW-10 (bg)	MW-14A	MW-15A	MW-4B	MW-6A	MW-5B	MW-22 (bg)
10/10/2016	0.338	0.291	0.156						
10/11/2016				0.279	0.185	0.103	0.156	0.193	
8/7/2017	0.243		0.165			0.11			
8/8/2017		0.256		0.257	0.178		0.161	0.197	
8/6/2019	0.323								0.133
8/7/2019		0.263	0.199	0.274	0.134	0.115	0.178	0.208	
4/7/2020	0.233	0.175	0.19	0.246	0.154	0.103	0.173	0.166	0.129
9/18/2020	0.176	0.184	0.19	0.259	0.153	0.146	0.187	0.167	0.108
4/5/2021	0.188	0.148	0.179	0.261	0.133	0.129	0.188	0.163	0.13
9/1/2021	0.172	0.178	0.227	0.282	0.136	0.14	0.204	0.17	0.115
4/20/2022	0.164	0.169	0.173	0.247	0.149	0.122	0.194	0.168	0.127
9/14/2022	0.16	0.155	0.191	0.266	0.127	0.101	0.184	0.167	0.111
4/10/2023									0.137
4/11/2023	0.148	0.153		0.293	0.0985				
4/12/2023			0.178			0.091	0.194	0.149	
9/18/2023			0.207						0.101
9/19/2023	0.151	0.164		0.282	0.113				
9/20/2023						0.0958	0.165	0.163	
4/11/2024			0.188						0.103
4/12/2024	0.172	0.153							
4/15/2024				0.301	0.125	0.0951	0.19	0.166	
9/10/2024		0.181	0.197						0.106
9/11/2024	0.181			0.298	0.117				
9/12/2024						0.103	0.188	0.162	
4/15/2025									0.124
4/16/2025	0.159	0.173	0.169						
4/17/2025				0.229	0.107				
4/18/2025						0.0917	0.175	0.159	
9/8/2025			0.164						0.119
9/9/2025	0.151	0.166		0.243					
9/10/2025					0.0826	0.101	0.162	0.161	

Prediction Limit

Constituent: Strontium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-23 (bg)	MW-24	MW-26	MW-27
10/10/2016				
10/11/2016				
8/7/2017				
8/8/2017				
8/6/2019	0.0872	0.123		
8/7/2019				
4/7/2020	0.0661	0.109		
9/18/2020	0.0602	0.0824	0.174	0.106
4/5/2021	0.0639	0.0899	0.159	0.0986
9/1/2021	0.068	0.085	0.159	0.128
4/20/2022	0.0595	0.0802	0.145	0.0575
9/14/2022	0.0592	0.0746	0.145	0.0659
4/10/2023				
4/11/2023		0.0795		
4/12/2023	0.0526		0.133	0.0512
9/18/2023	0.0601			
9/19/2023		0.0768		
9/20/2023			0.135	0.0752
4/11/2024	0.0585			
4/12/2024		0.0703	0.147	0.069
4/15/2024				
9/10/2024	0.0598			
9/11/2024		0.0754	0.127	0.113
9/12/2024				
4/15/2025	0.0665			
4/16/2025		0.0806	0.119	0.067
4/17/2025				
4/18/2025				
9/8/2025	0.053			
9/9/2025		0.079	0.12	0.122
9/10/2025				

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-08 (bg)	MW-4B	MW-6A	MW-5B	MW-14A	MW-21	MW-22 (bg)
6/6/2016	827	42.1							
6/7/2016			366	32.2	<5	109			
6/8/2016							1050	713	
8/15/2016	605	33.8					1040	520	
8/16/2016			187	28.4	<5	109			
10/10/2016		36.4	187					603	
10/11/2016	607			27.2	<5	105	1010		
12/12/2016				32.7	<5	109		645	
12/14/2016	732	38.4	149				1140		
2/17/2017	849	47.3		36			1190		
2/21/2017			145		5.94	111		415	
4/17/2017	853	38.3	145	39.5	<5	108	1200		
4/18/2017								461	
6/19/2017		35.4	190						
6/20/2017				33		108		541	
6/21/2017	537				<5		1020		
8/7/2017		39	119	35.3					
8/8/2017	664				<5	114	1110	590	
10/16/2017		46.9	106	45.4				206	
10/17/2017	835				<5	135	1210		
11/28/2017	779 (R)						1140 (R)		
3/5/2018		51.4							
3/6/2018			87.3	162	<5	122		53.7	123
3/7/2018	824						1110		
6/19/2018		37.3	136					489	134
6/20/2018	210						1090		
6/21/2018				51.3	<5	119			
8/27/2018		34.3	94.7						125
8/28/2018				52.2				96.6	
8/29/2018	400				<5	120	1070		
3/18/2019			223						
3/19/2019		42.8		48	<5	85			134
3/20/2019	351						1050	442	
8/6/2019			276						139
8/7/2019	327	28.8		47	<5	112	837	529	
4/7/2020	496	18.6	123	41.5	13.6	58.9	888	373	143
9/18/2020	403	36.5	100	46.9	19.1	61.9	924	356	151
4/5/2021	338	27.6	99.7	60.1	27.3	57.4	952	237	154
9/1/2021	333	32.3	82.7	50.2	22.7	53.7	1010	303	154
4/20/2022	297	48.3	72.8	58.4	18.9	44.7	1030	293	158
9/14/2022	319	31.2	67.1	49.5	16.4	49.9	978	151	220
4/10/2023									147
4/11/2023	254		72.2				1150	215	
4/12/2023		39.8		54	20.5	45.8			
9/18/2023		57.4							208
9/19/2023	365		94.2				1440	303	
9/20/2023				53.1	10.1	53.4			
4/11/2024		49.6							160
4/12/2024			65.7					138	
4/15/2024	256			56.1	18.1	46.3	1160		
9/10/2024		59.9						248	161
9/11/2024	273		68.9				1110		

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-15A	MW-10 (bg)	MW-08 (bg)	MW-4B	MW-6A	MW-5B	MW-14A	MW-21	MW-22 (bg)
9/12/2024				65.8	16.3	50.4			
4/15/2025									143
4/16/2025		84.7	63.5					230	
4/17/2025	309						808		
4/18/2025				50.8	18.5	35.7			
9/8/2025		57							149
9/9/2025			68.8				953	135	
9/10/2025	162			55.8	20.7	47.6			

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-23 (bg)	MW-26	MW-27
6/6/2016				
6/7/2016				
6/8/2016				
8/15/2016				
8/16/2016				
10/10/2016				
10/11/2016				
12/12/2016				
12/14/2016				
2/17/2017				
2/21/2017				
4/17/2017				
4/18/2017				
6/19/2017				
6/20/2017				
6/21/2017				
8/7/2017				
8/8/2017				
10/16/2017				
10/17/2017				
11/28/2017				
3/5/2018				
3/6/2018				
3/7/2018				
6/19/2018				
6/20/2018	101	38.4		
6/21/2018				
8/27/2018	70	31.7		
8/28/2018				
8/29/2018				
3/18/2019	90.8			
3/19/2019		26.2		
3/20/2019				
8/6/2019	169	29.7		
8/7/2019				
4/7/2020	164	25.5		
9/18/2020	81	25.8	376	119
4/5/2021	91.2	35.5	341	7.63
9/1/2021	59.3	25.8	358	111
4/20/2022	48.5	25.4	322	30.7
9/14/2022	44.5	23	313	38.2
4/10/2023				
4/11/2023	87.8			
4/12/2023		25	72.5	5.13
9/18/2023		28.6		
9/19/2023	62.9			
9/20/2023			380	27
4/11/2024		21.8		
4/12/2024	43.8		309	36.7
4/15/2024				
9/10/2024		23.8		
9/11/2024	43.8		234	85

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-24	MW-23 (bg)	MW-26	MW-27
9/12/2024				
4/15/2025		23.4		
4/16/2025	40.5		269	11.4
4/17/2025				
4/18/2025				
9/8/2025		25.7		
9/9/2025	38.2		264	55.2
9/10/2025				

Prediction Limit

Constituent: Vanadium (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-22 (bg)	MW-23 (bg)	MW-27
10/10/2016	<0.005	<0.005			
8/7/2017	<0.005	<0.005			
8/6/2019	<0.005		<0.005	<0.005	
8/7/2019		<0.005			
4/7/2020	<0.005	<0.005	<0.005	<0.005	
9/18/2020	<0.005	<0.005	<0.005	<0.005	<0.005
4/5/2021	<0.005	<0.005	<0.005	<0.005	<0.005
9/1/2021	<0.005	<0.005	<0.005	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005	<0.005	<0.005
9/14/2022	<0.005	<0.005	<0.005	<0.005	<0.005
4/10/2023			<0.005		
4/11/2023	<0.005				
4/12/2023		<0.005		<0.005	<0.005
9/18/2023		<0.005	<0.005	<0.005	
9/19/2023	<0.005				
9/20/2023					<0.005
4/11/2024		<0.005	<0.005	<0.005	
4/12/2024	<0.005				<0.005
9/10/2024		<0.005	<0.005	<0.005	
9/11/2024	<0.005				<0.005
4/15/2025			<0.005	0.00547	
4/16/2025	<0.005	<0.005			0.00613
9/8/2025		<0.005	<0.005	<0.005	
9/9/2025	<0.005				<0.005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Zinc (mg/L) Analysis Run 12/15/2025 3:19 PM View: State Wells Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	MW-08 (bg)	MW-10 (bg)	MW-14A	MW-22 (bg)	MW-23 (bg)
10/10/2016	<0.02	<0.02			
10/11/2016			<0.02		
8/7/2017	<0.02	<0.02			
8/8/2017			<0.02		
8/6/2019	<0.02			<0.02	<0.02
8/7/2019		<0.02	<0.02		
4/7/2020	<0.02	<0.02	<0.02	<0.02	<0.02
9/18/2020	<0.02	<0.02	<0.02	<0.02	<0.02
4/5/2021	<0.02	<0.02	<0.02	<0.02	<0.02
9/1/2021	<0.02	<0.02	<0.02	<0.02	<0.02
4/20/2022	<0.02	<0.02	<0.02	<0.02	<0.02
9/14/2022	<0.02	<0.02	<0.02	<0.02	<0.02
4/10/2023				<0.02	
4/11/2023	<0.02		<0.02		
4/12/2023		<0.02			<0.02
9/18/2023		<0.02		<0.02	<0.02
9/19/2023	<0.02		<0.02		
4/11/2024		<0.02		<0.02	<0.02
4/12/2024	<0.02				
4/15/2024			<0.02		
9/10/2024		<0.02		<0.02	<0.02
9/11/2024	<0.02		0.022		
4/15/2025				<0.02	<0.02
4/16/2025	<0.02	<0.02			
4/17/2025			<0.02		
9/8/2025		<0.02		<0.02	<0.02
9/9/2025	<0.02		<0.02		

ND substitution: RL or RL/2 if <15% NDs.

FIGURE G.

Trend Tests - Monitoring Wells Prediction Limit Exceedances - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:28 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**MW-15A**	**-1.271**	**-241**	**-124**	**Yes**	**27**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-22 (bg)**	**-2.056**	**-102**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-23 (bg)**	**1.516**	**85**	**58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-5B**	**-3.931**	**-190**	**-124**	**Yes**	**27**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Magnesium (mg/L)	**MW-14A**	**3.445**	**55**	**53**	**Yes**	**15**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Magnesium (mg/L)	**MW-15A**	**-3.296**	**-58**	**-53**	**Yes**	**15**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Selenium (mg/L)	**MW-21**	**-0.0006943**	**-141**	**-111**	**Yes**	**25**	**28**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-08 (bg)**	**-12.86**	**-221**	**-118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-22 (bg)**	**4.734**	**77**	**63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-23 (bg)**	**-0.8498**	**-65**	**-58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Trend Tests - Monitoring Wells Prediction Limit Exceedances - All Results

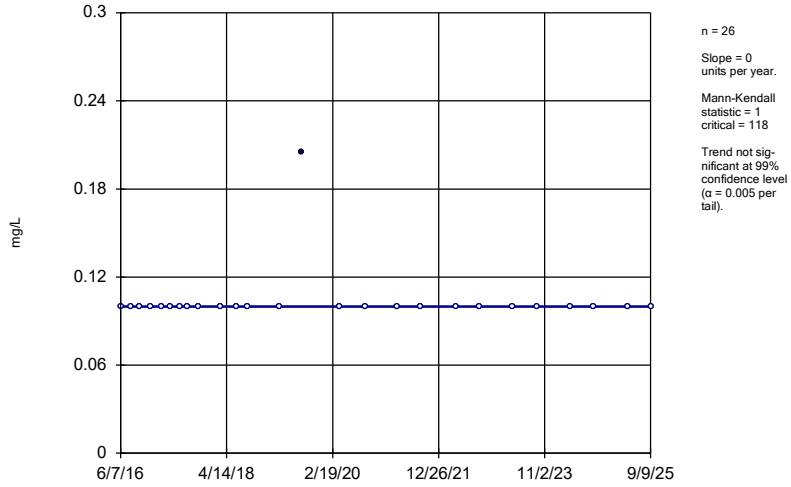
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/15/2025, 3:28 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	MW-08 (bg)	0	1	118	No	26	96.15	n/a	n/a	0.01	NP
Boron (mg/L)	MW-10 (bg)	0	0	118	No	26	100	n/a	n/a	0.01	NP
Boron (mg/L)	MW-14A	0.1732	50	124	No	27	0	n/a	n/a	0.01	NP
Boron (mg/L)	**MW-15A**	**-1.271**	**-241**	**-124**	**Yes**	**27**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	MW-21	-0.4056	-107	-124	No	27	3.704	n/a	n/a	0.01	NP
Boron (mg/L)	MW-22 (bg)	0	17	63	No	17	58.82	n/a	n/a	0.01	NP
Boron (mg/L)	MW-23 (bg)	0	23	58	No	16	62.5	n/a	n/a	0.01	NP
Boron (mg/L)	MW-26	0.4242	27	34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	MW-27	0.0178	1	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-08 (bg)	-2.922	-102	-111	No	25	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-10 (bg)	0.5172	40	118	No	26	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-14A	-1.662	-43	-124	No	27	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-22 (bg)	-0.4821	-22	-63	No	17	0	n/a	n/a	0.01	NP
Calcium (mg/L)	MW-23 (bg)	-1.457	-52	-58	No	16	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-08 (bg)	0.3471	107	118	No	26	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-10 (bg)	0	63	118	No	26	80.77	n/a	n/a	0.01	NP
Chloride (mg/L)	**MW-22 (bg)**	**-2.056**	**-102**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-23 (bg)**	**1.516**	**85**	**58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**MW-5B**	**-3.931**	**-190**	**-124**	**Yes**	**27**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Magnesium (mg/L)	MW-08 (bg)	-0.5535	-20	-53	No	15	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-10 (bg)	1.038	53	53	No	15	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	**MW-14A**	**3.445**	**55**	**53**	**Yes**	**15**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Magnesium (mg/L)	**MW-15A**	**-3.296**	**-58**	**-53**	**Yes**	**15**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Magnesium (mg/L)	MW-22 (bg)	-0.04727	-4	-43	No	13	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-23 (bg)	0.09952	6	43	No	13	0	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-08 (bg)	0	14	118	No	26	84.62	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-10 (bg)	0	41	111	No	25	72	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-15A	0	22	111	No	25	96	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-22 (bg)	0.00004331	7	68	No	18	5.556	n/a	n/a	0.01	NP
Molybdenum (mg/L)	MW-23 (bg)	0	-29	-58	No	16	87.5	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-08 (bg)	0	-6	-53	No	15	93.33	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-10 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-21	-0.0001716	-43	-53	No	15	53.33	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-23 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-08 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-10 (bg)	0	0	111	No	25	100	n/a	n/a	0.01	NP
Selenium (mg/L)	**MW-21**	**-0.0006943**	**-141**	**-111**	**Yes**	**25**	**28**	**n/a**	**n/a**	**0.01**	**NP**
Selenium (mg/L)	MW-22 (bg)	0	0	63	No	17	100	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-23 (bg)	0	0	58	No	16	100	n/a	n/a	0.01	NP
Sulfate (mg/L)	**MW-08 (bg)**	**-12.86**	**-221**	**-118**	**Yes**	**26**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	MW-10 (bg)	1.617	71	118	No	26	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-14A	-11.48	-57	-124	No	27	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**MW-22 (bg)**	**4.734**	**77**	**63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**MW-23 (bg)**	**-0.8498**	**-65**	**-58**	**Yes**	**16**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Vanadium (mg/L)	MW-08 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-10 (bg)	0	0	53	No	15	100	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-23 (bg)	0	10	43	No	13	92.31	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-27	0	8	34	No	11	90.91	n/a	n/a	0.01	NP

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 26

Slope = 0 units per year.

Mann-Kendall statistic = 1 critical = 118

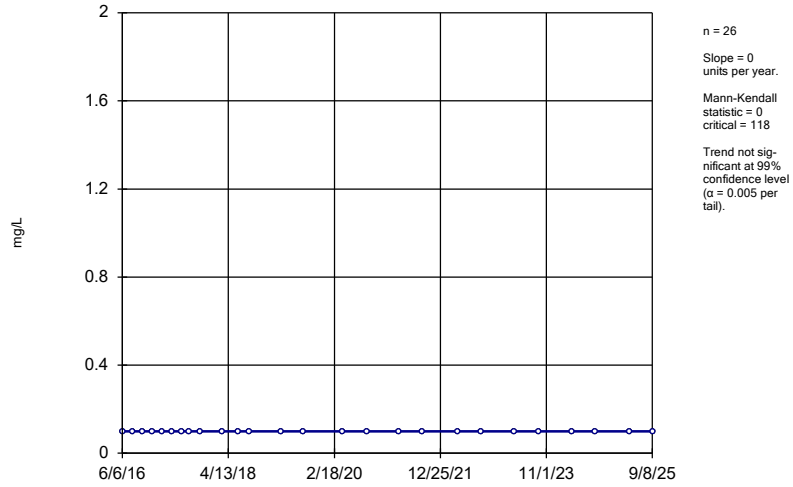
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 26

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 118

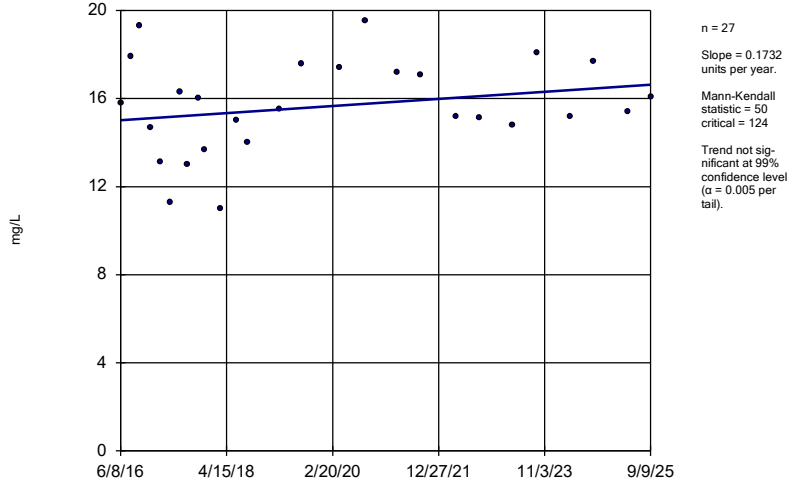
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-14A



n = 27

Slope = 0.1732 units per year.

Mann-Kendall statistic = 50 critical = 124

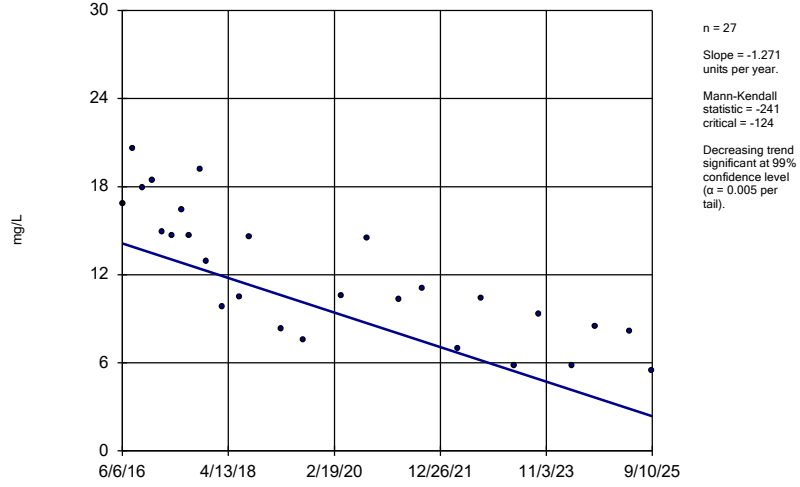
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-15A



n = 27

Slope = -1.271 units per year.

Mann-Kendall statistic = -241 critical = -124

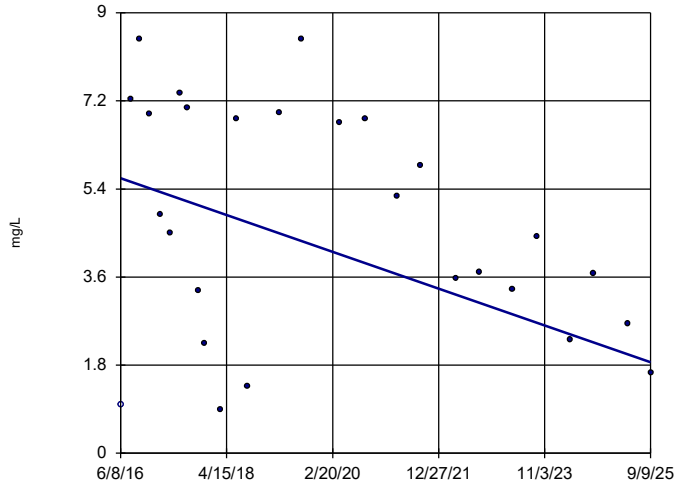
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-21



n = 27

Slope = -0.4056 units per year.

Mann-Kendall statistic = -107
critical = -124

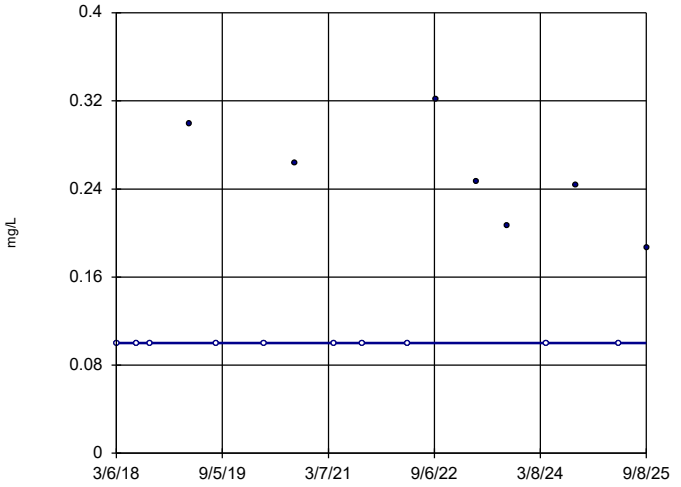
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = 0 units per year.

Mann-Kendall statistic = 17
critical = 63

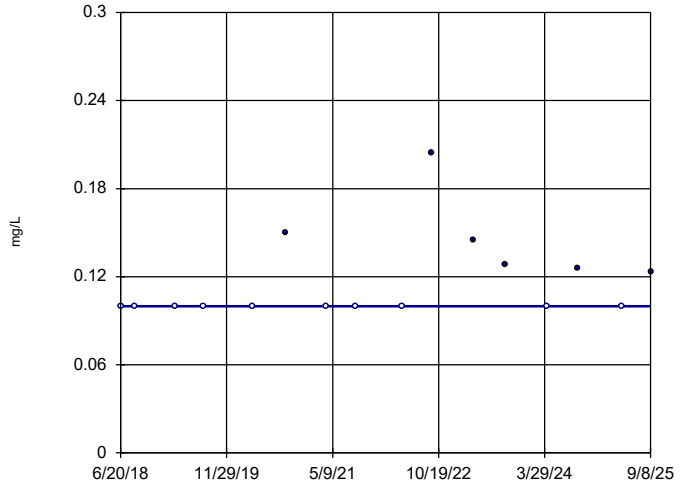
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = 0 units per year.

Mann-Kendall statistic = 23
critical = 58

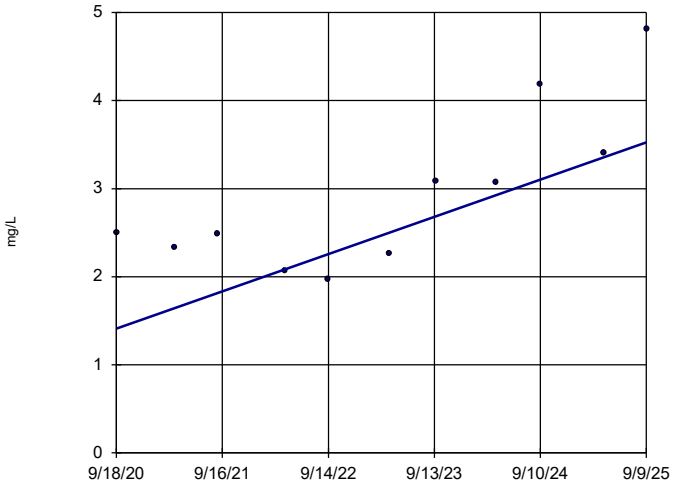
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-26



n = 11

Slope = 0.4242 units per year.

Mann-Kendall statistic = 27
critical = 34

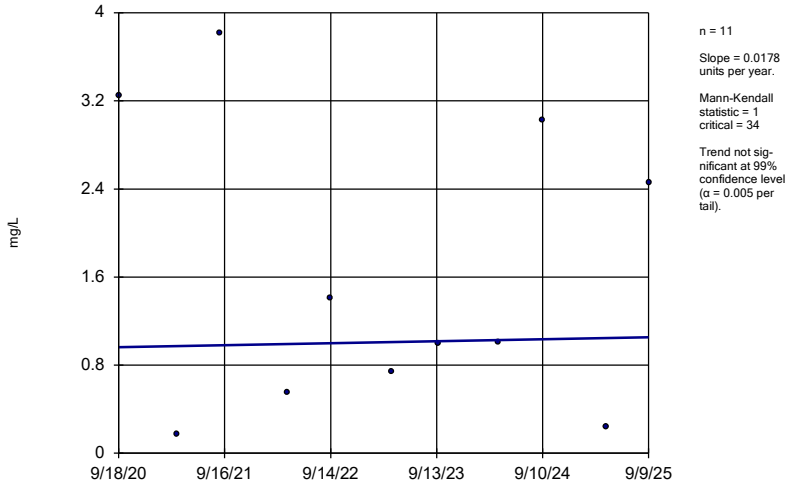
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-27



n = 11

Slope = 0.0178 units per year.

Mann-Kendall statistic = 1 critical = 34

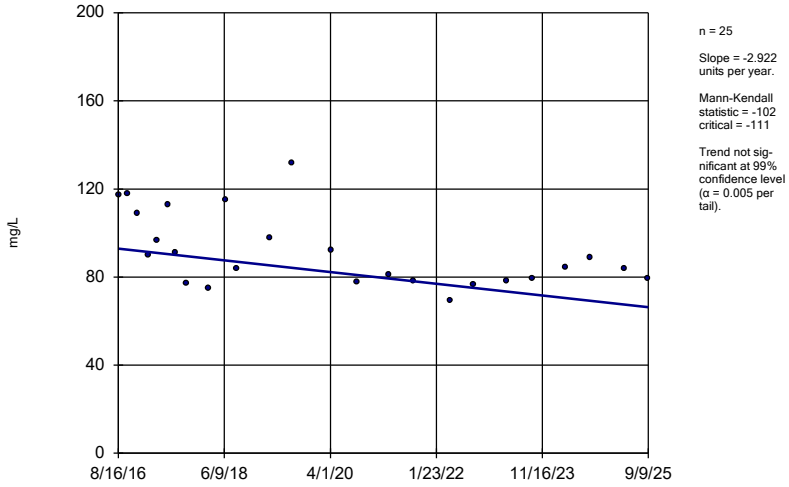
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-08 (bg)



n = 25

Slope = -2.922 units per year.

Mann-Kendall statistic = -102 critical = -111

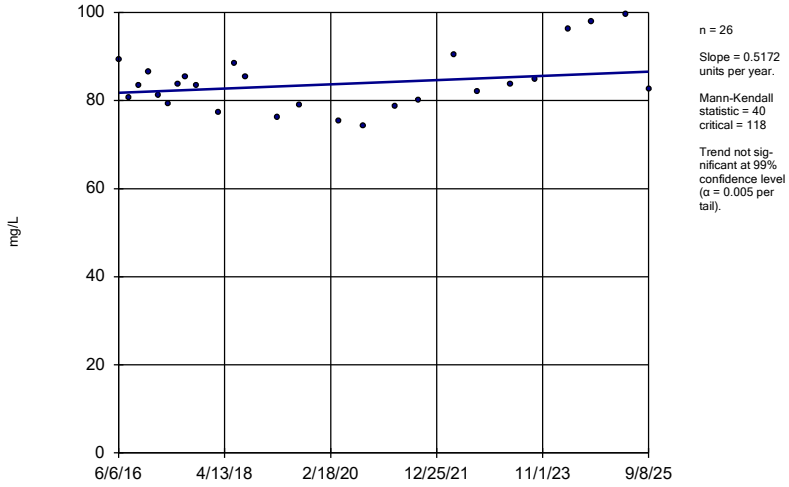
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-10 (bg)



n = 26

Slope = 0.5172 units per year.

Mann-Kendall statistic = 40 critical = 118

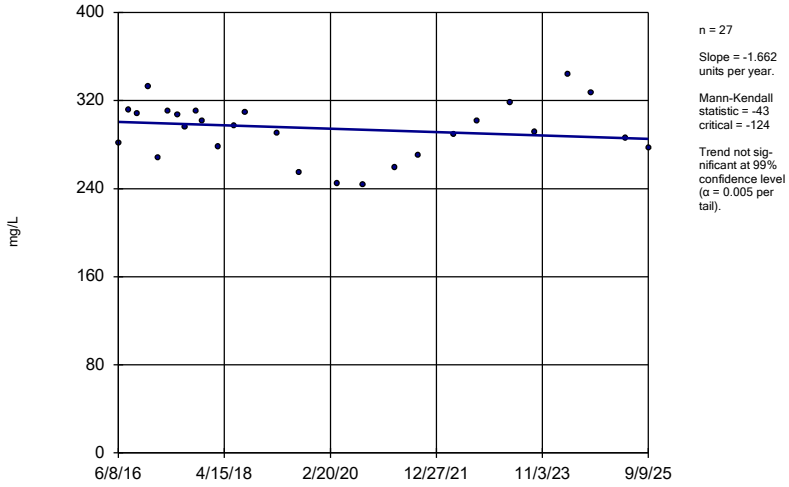
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-14A



n = 27

Slope = -1.662 units per year.

Mann-Kendall statistic = -43 critical = -124

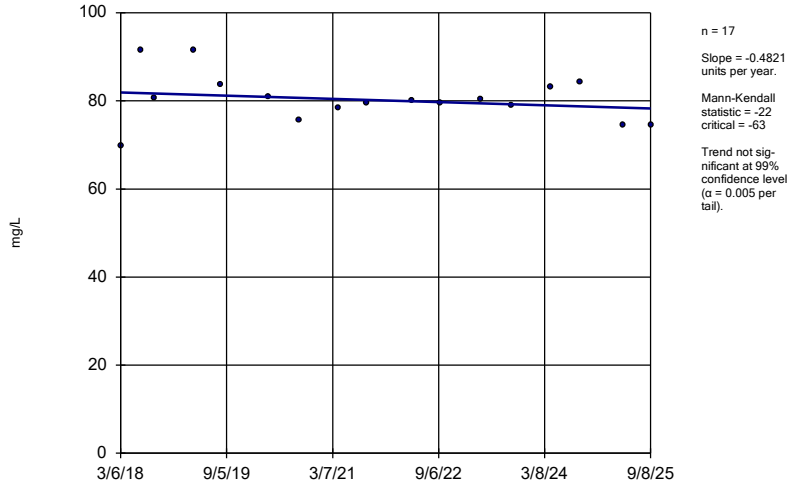
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = -0.4821 units per year.

Mann-Kendall statistic = -22
critical = -63

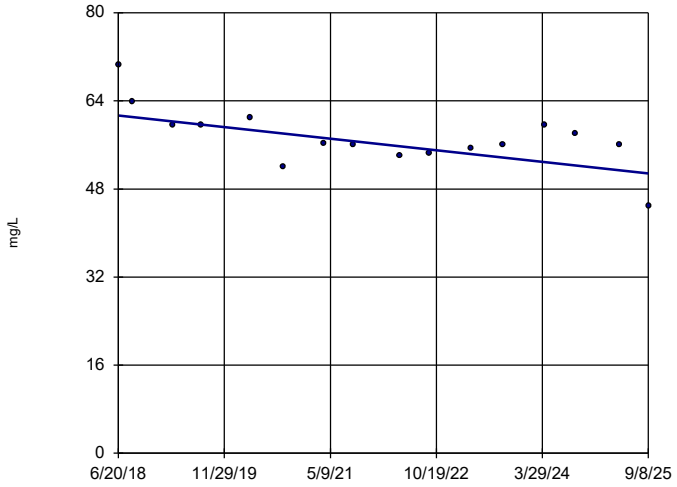
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = -1.457 units per year.

Mann-Kendall statistic = -52
critical = -58

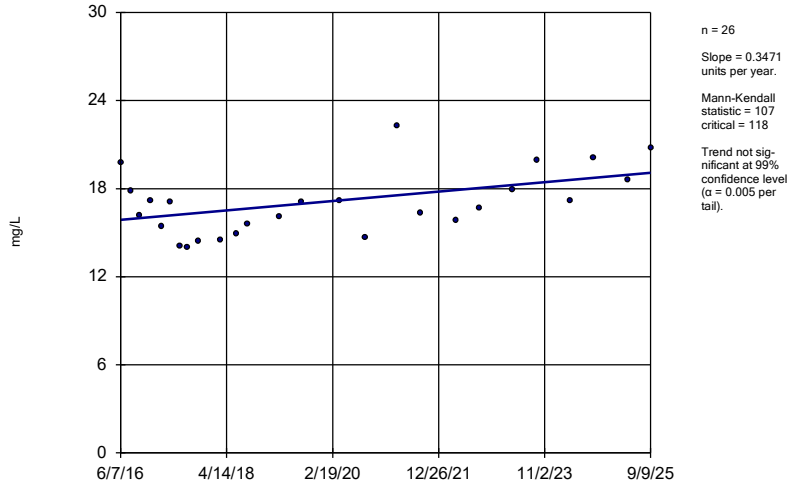
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-08 (bg)



n = 26

Slope = 0.3471 units per year.

Mann-Kendall statistic = 107
critical = 118

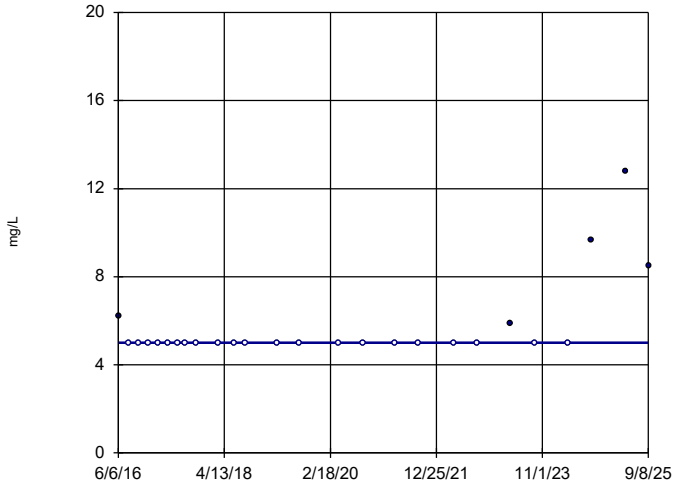
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 26

Slope = 0 units per year.

Mann-Kendall statistic = 63
critical = 118

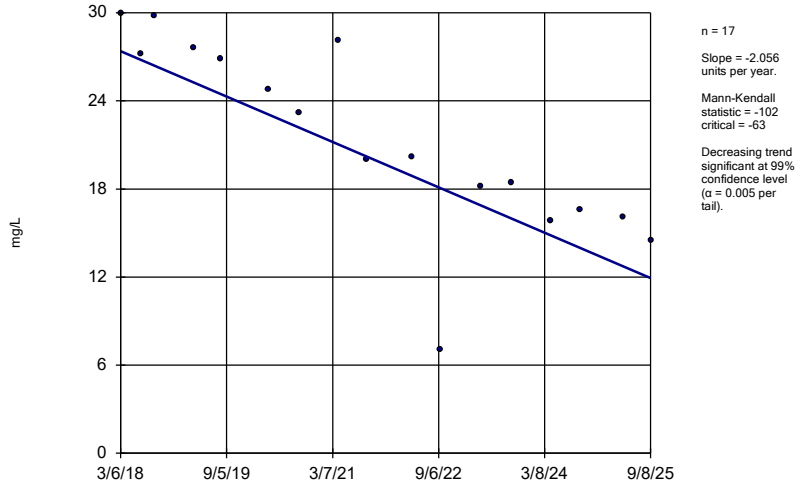
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = -2.056 units per year.

Mann-Kendall statistic = -102 critical = -63

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

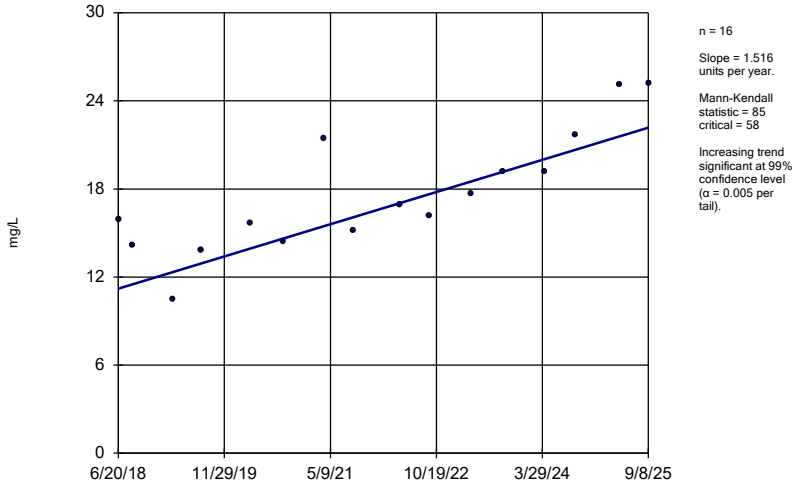
Constituent: Chloride Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = 1.516 units per year.

Mann-Kendall statistic = 85 critical = 58

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

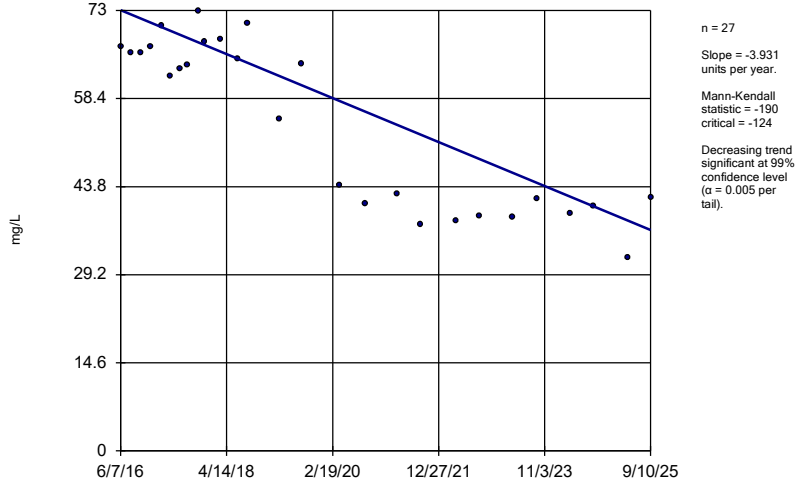
Constituent: Chloride Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-5B



n = 27

Slope = -3.931 units per year.

Mann-Kendall statistic = -190 critical = -124

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

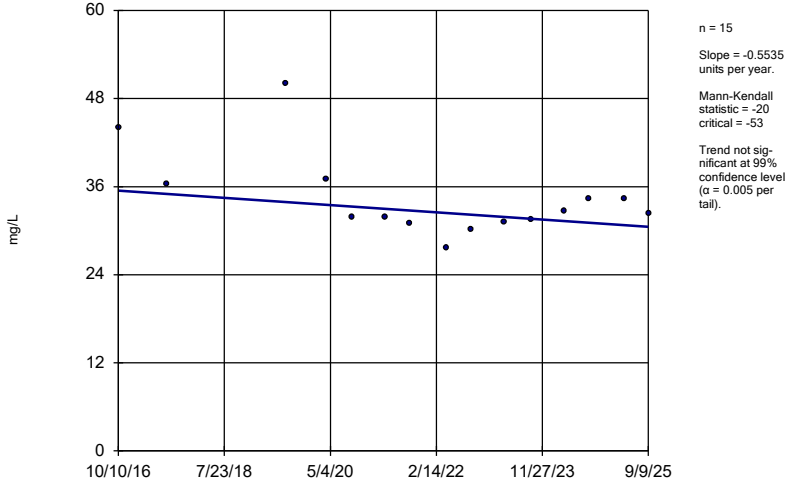
Constituent: Chloride Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-08 (bg)



n = 15

Slope = -0.5535 units per year.

Mann-Kendall statistic = -20 critical = -53

Trend not significant at 99% confidence level (α = 0.005 per tail).

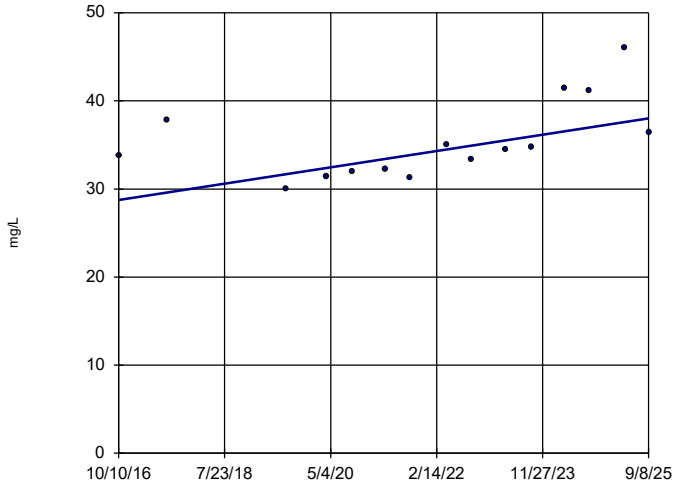
Constituent: Magnesium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-10 (bg)



n = 15

Slope = 1.038 units per year.

Mann-Kendall statistic = 53 critical = 53

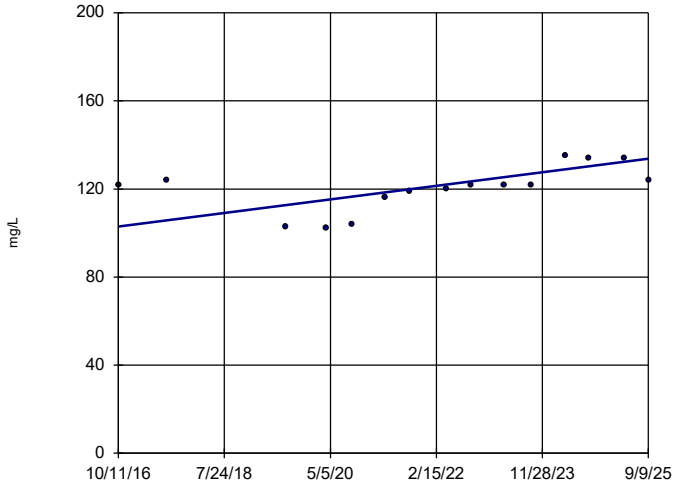
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Magnesium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

MW-14A



n = 15

Slope = 3.445 units per year.

Mann-Kendall statistic = 55 critical = 53

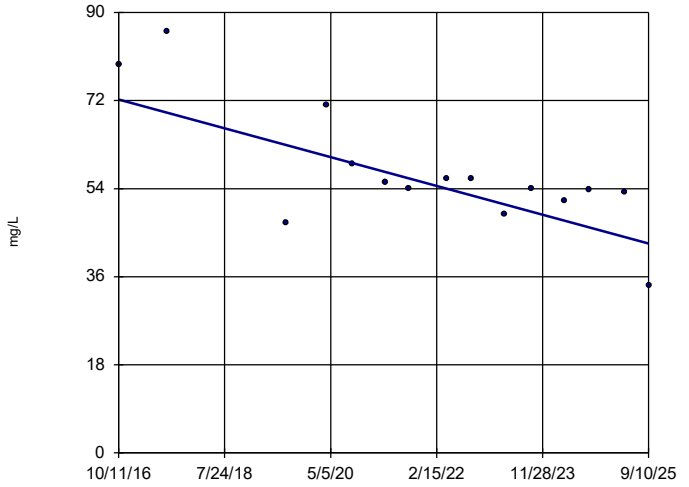
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Magnesium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-15A



n = 15

Slope = -3.296 units per year.

Mann-Kendall statistic = -58 critical = -53

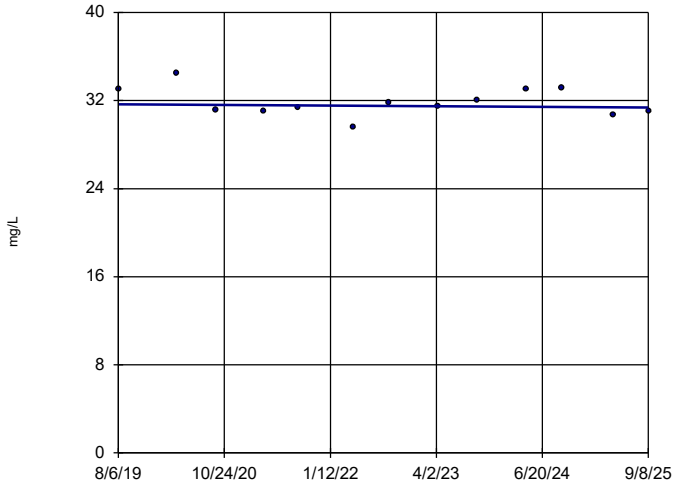
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Magnesium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-22 (bg)



n = 13

Slope = -0.04727 units per year.

Mann-Kendall statistic = -4 critical = -43

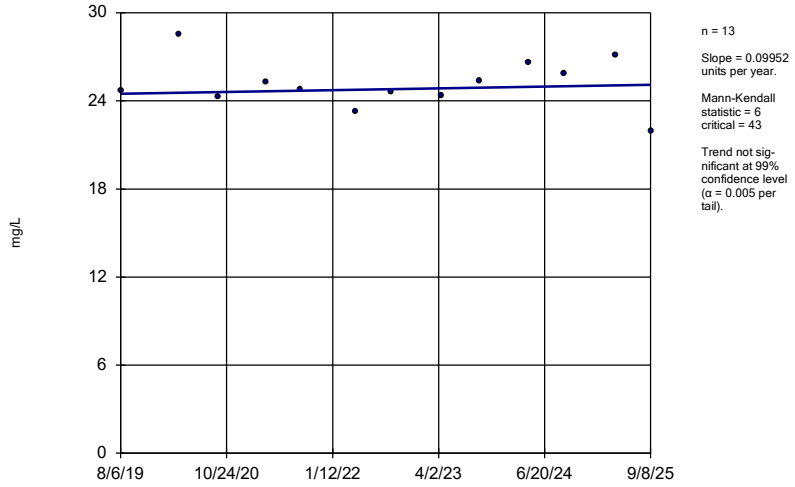
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Magnesium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-23 (bg)



n = 13

Slope = 0.09952 units per year.

Mann-Kendall statistic = 6
critical = 43

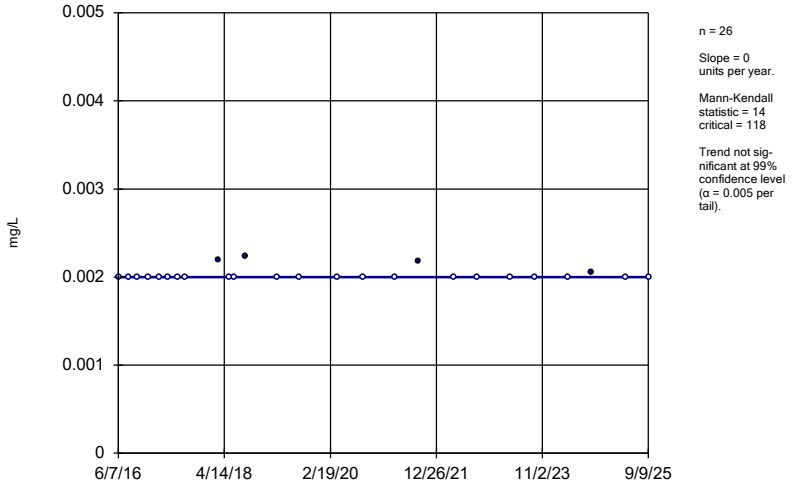
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Magnesium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 26

Slope = 0 units per year.

Mann-Kendall statistic = 14
critical = 118

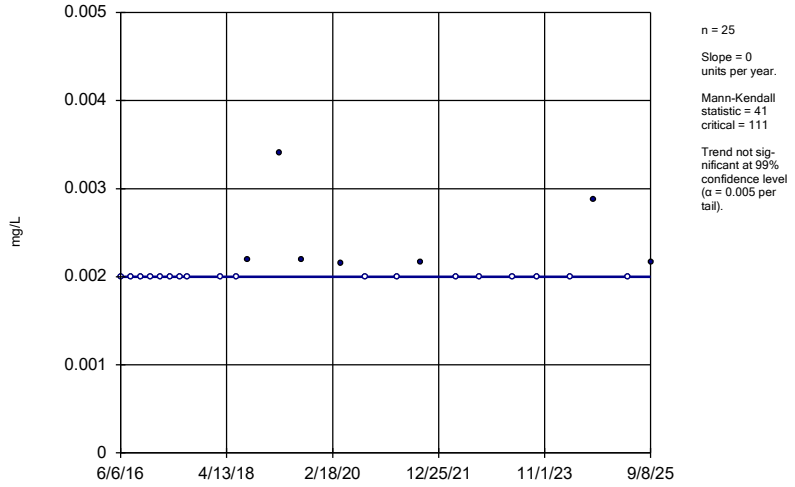
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Molybdenum Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 25

Slope = 0 units per year.

Mann-Kendall statistic = 41
critical = 111

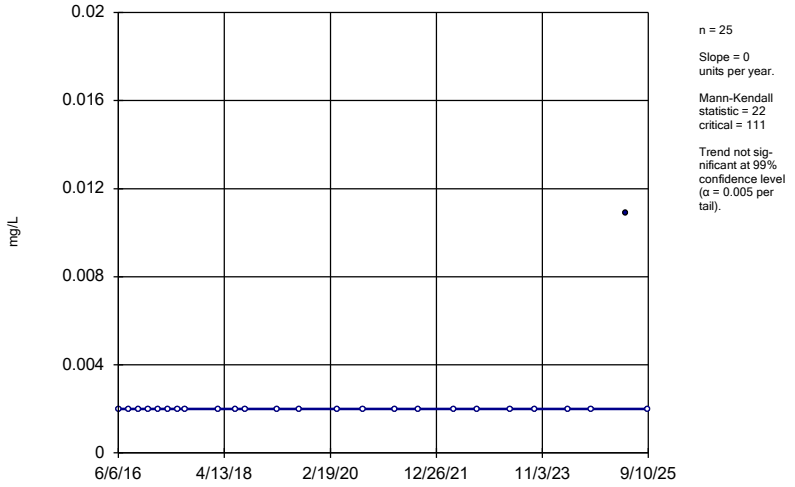
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Molybdenum Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-15A



n = 25

Slope = 0 units per year.

Mann-Kendall statistic = 22
critical = 111

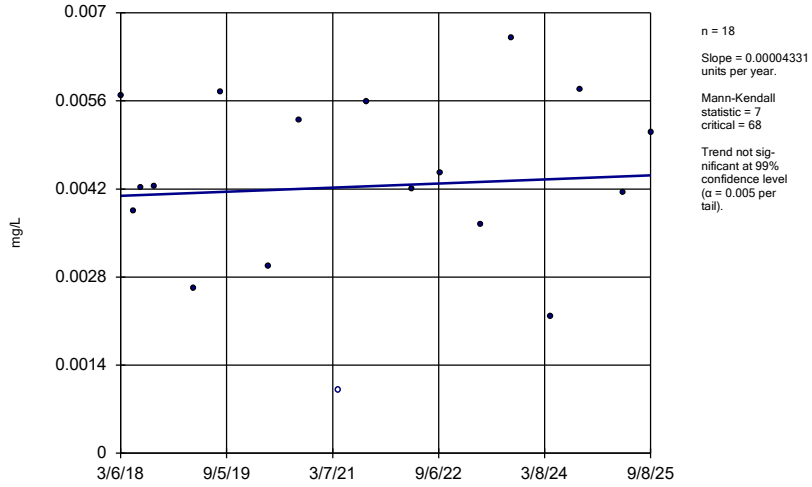
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Molybdenum Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 18

Slope = 0.00004331 units per year.

Mann-Kendall statistic = 7
critical = 68

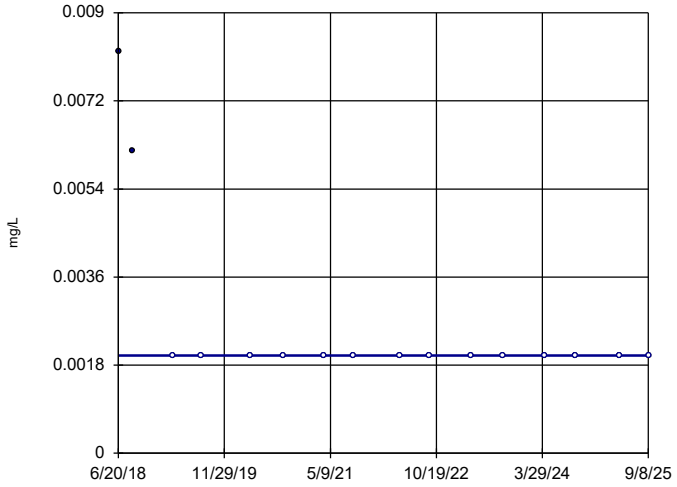
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Molybdenum Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = 0 units per year.

Mann-Kendall statistic = -29
critical = -58

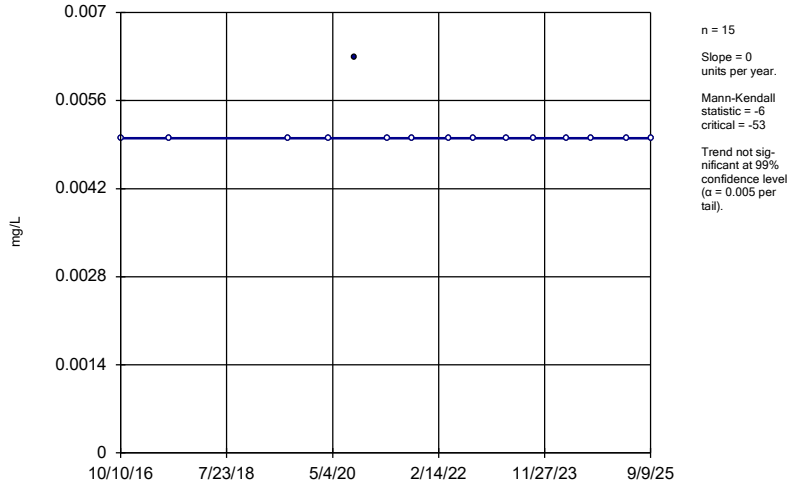
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Molybdenum Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 15

Slope = 0 units per year.

Mann-Kendall statistic = -6
critical = -53

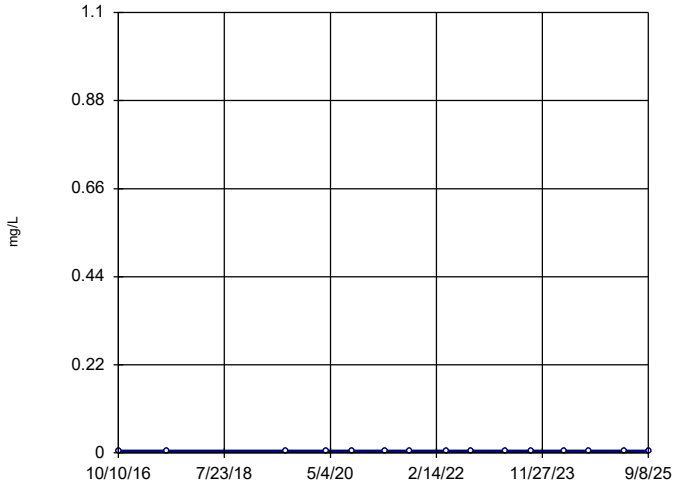
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 15

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 53

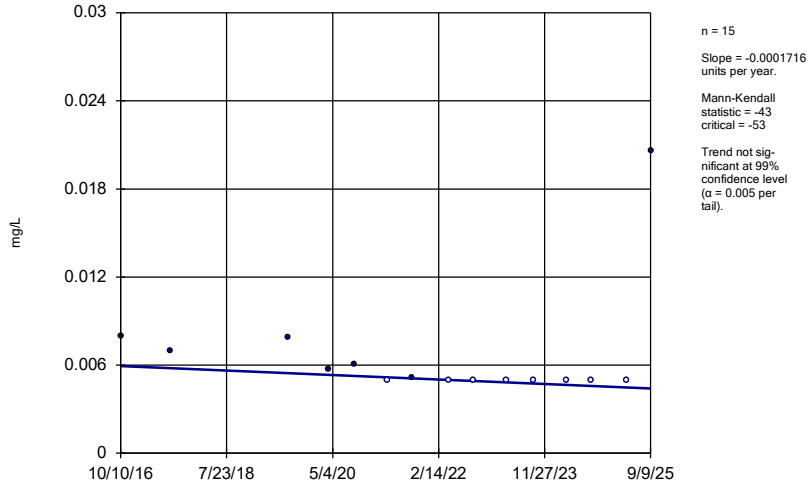
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-21



n = 15

Slope = -0.0001716 units per year.

Mann-Kendall statistic = -43
critical = -53

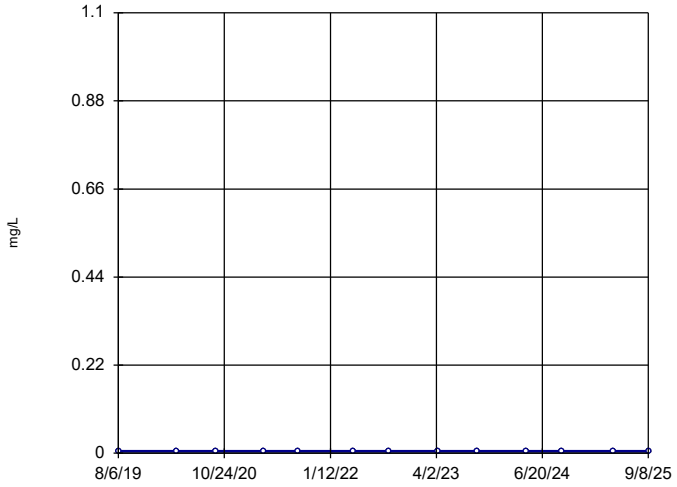
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 13

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 43

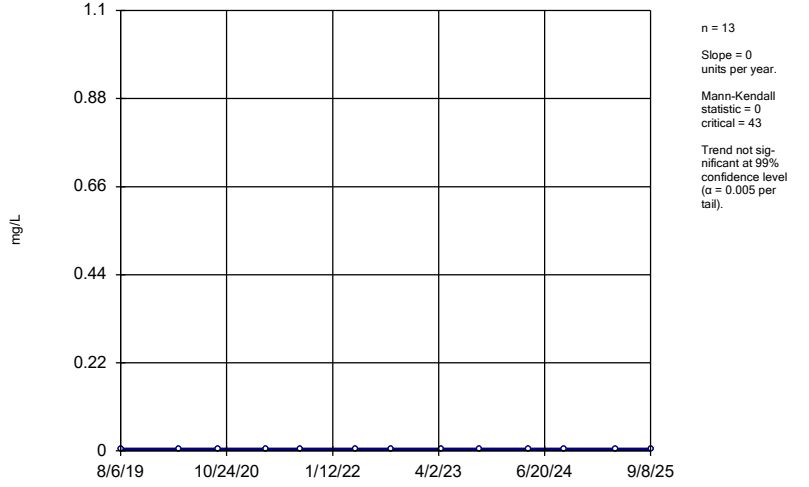
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 13

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 43

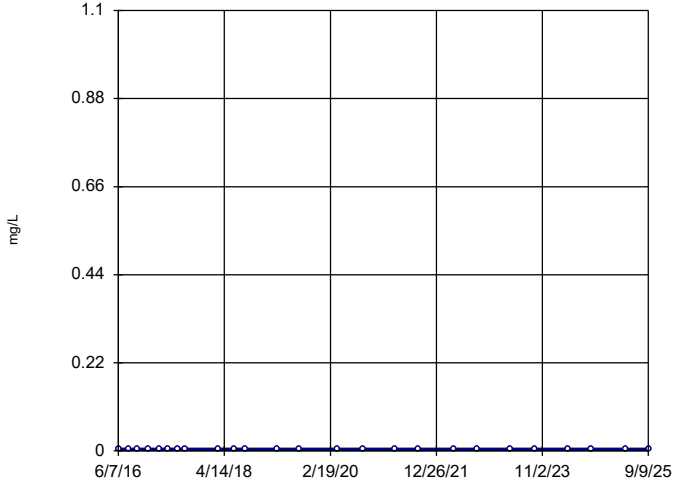
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 25

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 111

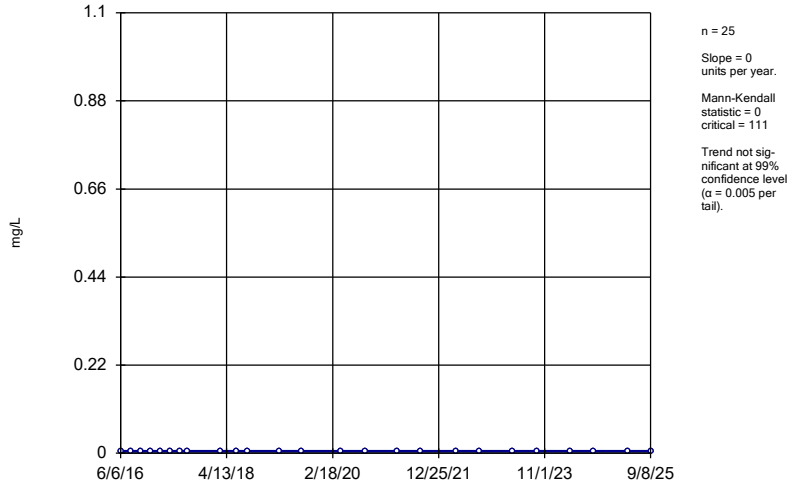
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Selenium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 25

Slope = 0
units per year.

Mann-Kendall
statistic = 0
critical = 111

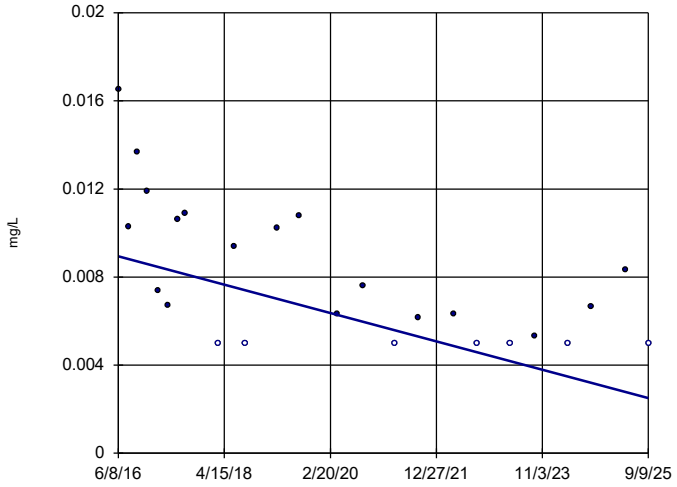
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Selenium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-21



n = 25

Slope = -0.0006943
units per year.

Mann-Kendall
statistic = -141
critical = -111

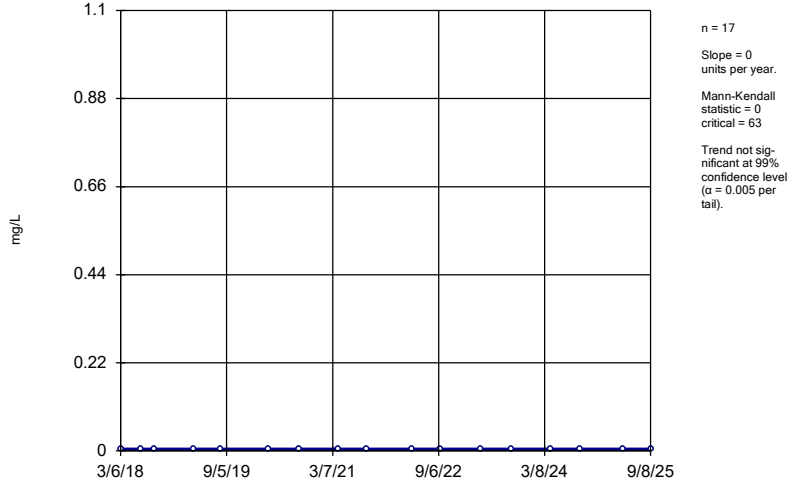
Decreasing trend
significant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Selenium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = 0
units per year.

Mann-Kendall
statistic = 0
critical = 63

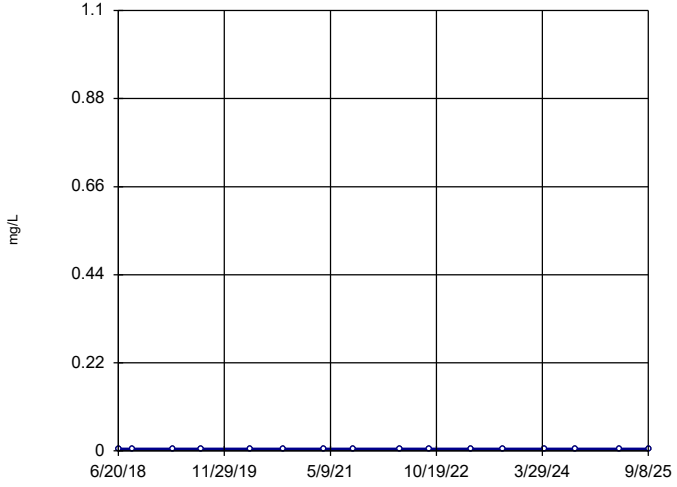
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Selenium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = 0
units per year.

Mann-Kendall
statistic = 0
critical = 58

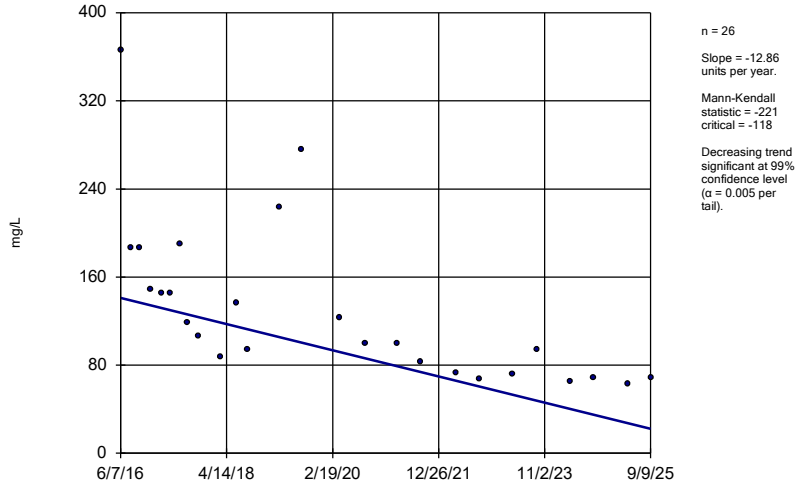
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Selenium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-08 (bg)



n = 26

Slope = -12.86 units per year.

Mann-Kendall statistic = -221 critical = -118

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

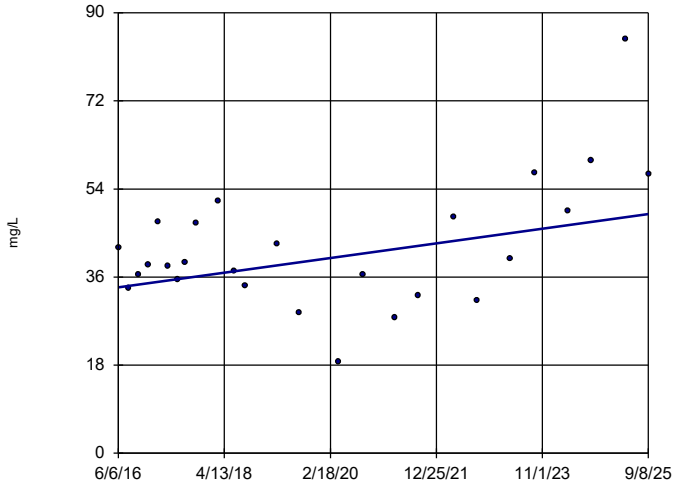
Constituent: Sulfate Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10 (bg)



n = 26

Slope = 1.617 units per year.

Mann-Kendall statistic = 71 critical = 118

Trend not significant at 99% confidence level (α = 0.005 per tail).

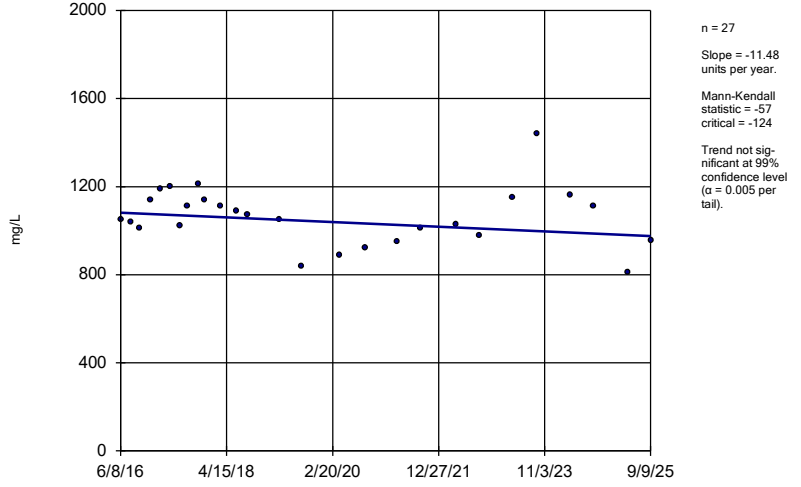
Constituent: Sulfate Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-14A



n = 27

Slope = -11.48 units per year.

Mann-Kendall statistic = -57 critical = -124

Trend not significant at 99% confidence level (α = 0.005 per tail).

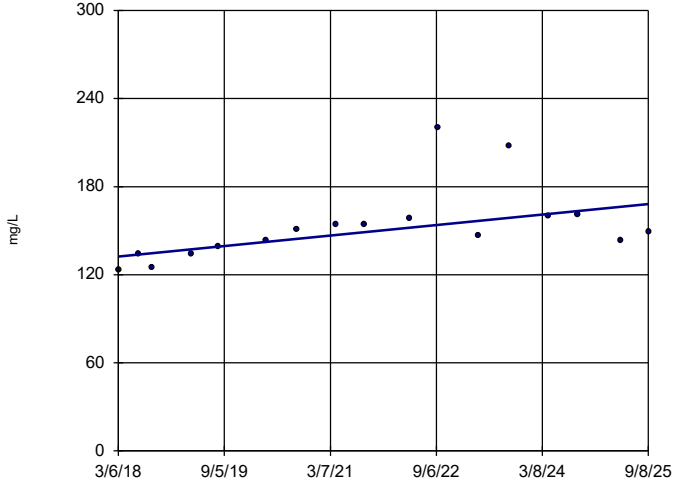
Constituent: Sulfate Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-22 (bg)



n = 17

Slope = 4.734 units per year.

Mann-Kendall statistic = 77 critical = 63

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

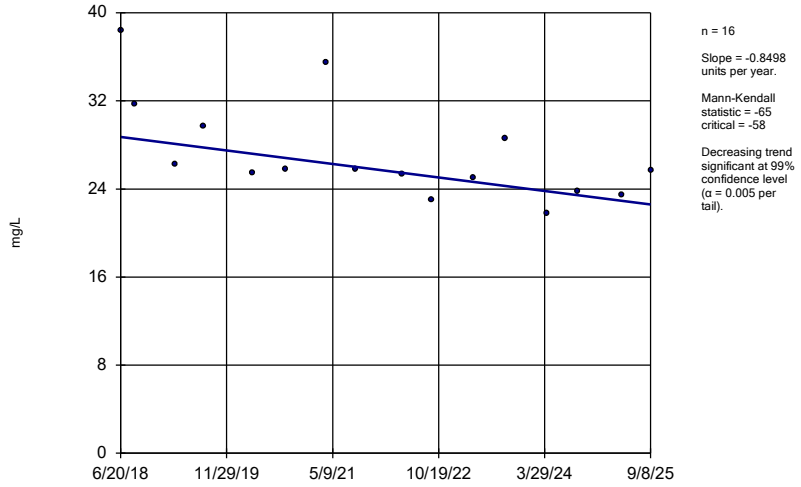
Constituent: Sulfate Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-23 (bg)



n = 16

Slope = -0.8498 units per year.

Mann-Kendall statistic = -65
critical = -58

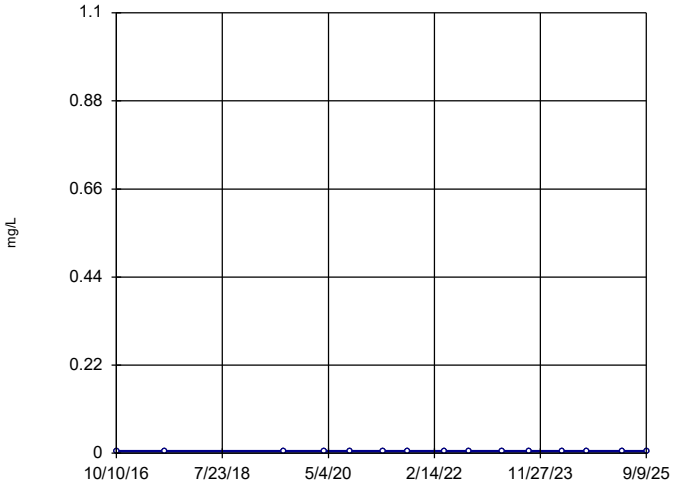
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-08 (bg)



n = 15

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 53

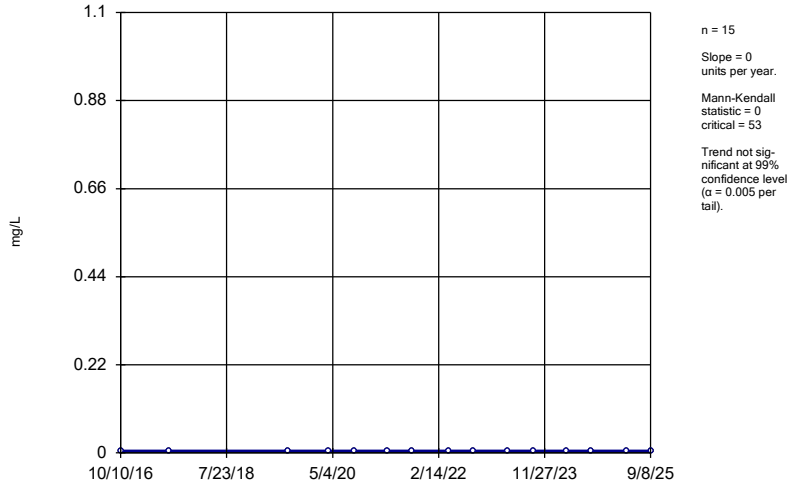
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Vanadium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10 (bg)



n = 15

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 53

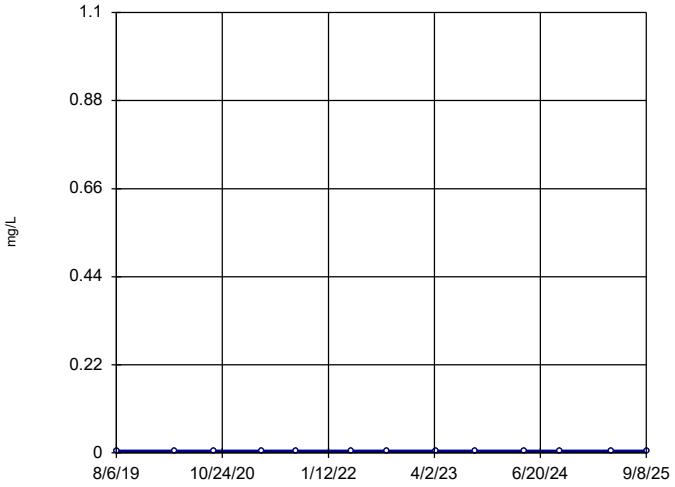
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Vanadium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-22 (bg)



n = 13

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 43

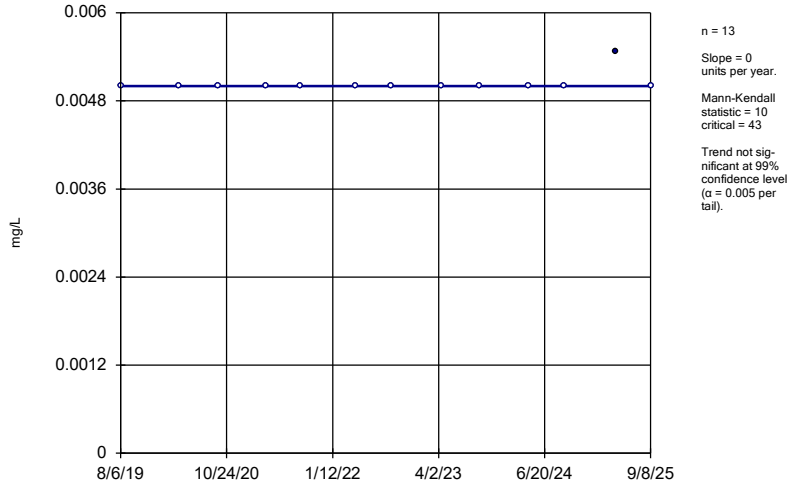
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Vanadium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-23 (bg)



n = 13

Slope = 0 units per year.

Mann-Kendall statistic = 10 critical = 43

Trend not significant at 99% confidence level (α = 0.005 per tail).

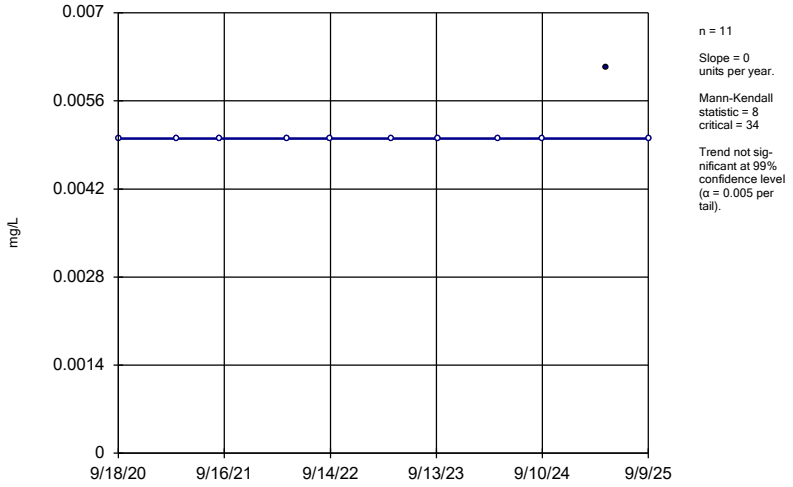
Constituent: Vanadium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-27



n = 11

Slope = 0 units per year.

Mann-Kendall statistic = 8 critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Vanadium Analysis Run 12/15/2025 3:24 PM View: State Wells Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

FIGURE H.

Interwell Prediction Limits - Surface Water Locations (April 2025) - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/10/2025, 3:13 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**SW-24**	**6.67**	**n/a**	**4/14/2025**	**7.82**	**Yes**	**15**	**73.33**	**n/a**	**0.006934**	**NP Inter (NDs) 1 of 2**
Cobalt (mg/L)	**SW-26**	**0.00116**	**n/a**	**4/14/2025**	**0.14**	**Yes**	**14**	**71.43**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Copper (mg/L)	**SW-26**	**0.005**	**n/a**	**4/14/2025**	**0.00773**	**Yes**	**13**	**100**	**n/a**	**0.008777**	**NP Inter (NDs) 1 of 2**
Lead (mg/L)	**SW-26**	**0.00258**	**n/a**	**4/14/2025**	**0.00299**	**Yes**	**14**	**71.43**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Magnesium (mg/L)	**SW-24**	**73.3**	**n/a**	**4/14/2025**	**78.7**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Molybdenum (mg/L)	**SW-26**	**0.00637**	**n/a**	**4/14/2025**	**0.00699**	**Yes**	**14**	**92.86**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Selenium (mg/L)	**SW-26**	**0.005**	**n/a**	**4/14/2025**	**0.0375**	**Yes**	**14**	**100**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Strontium (mg/L)	**SW-26**	**0.285**	**n/a**	**4/14/2025**	**0.402**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**

Interwell Prediction Limits - Surface Water Locations (April 2025) - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/10/2025, 3:13 PM

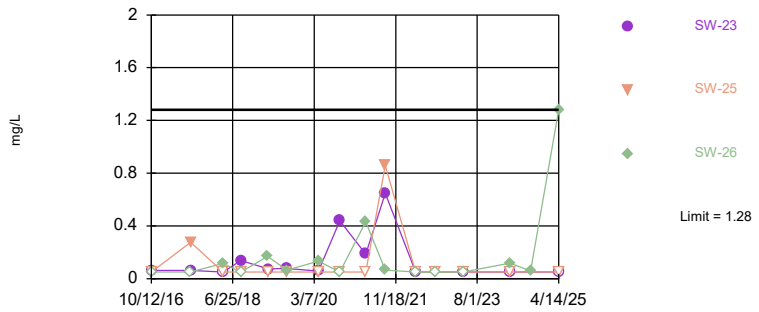
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Aluminum (mg/L)	SW-23	1.28	n/a	4/14/2025	0.05ND	No	14	21.43	n/a	0.007852	NP Inter (normality) 1 of 2
Aluminum (mg/L)	SW-25	1.28	n/a	4/14/2025	0.05ND	No	14	21.43	n/a	0.007852	NP Inter (normality) 1 of 2
Aluminum (mg/L)	SW-26	1.28	n/a	4/14/2025	1.28	No	14	21.43	n/a	0.007852	NP Inter (normality) 1 of 2
Arsenic (mg/L)	SW-23	0.00367	n/a	4/14/2025	0.002ND	No	14	78.57	n/a	0.007852	NP Inter (NDs) 1 of 2
Arsenic (mg/L)	SW-26	0.00367	n/a	4/14/2025	0.002ND	No	14	78.57	n/a	0.007852	NP Inter (NDs) 1 of 2
Barium (mg/L)	SW-23	0.216	n/a	4/14/2025	0.0586	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Barium (mg/L)	SW-24	0.216	n/a	4/14/2025	0.0213	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Barium (mg/L)	SW-25	0.216	n/a	4/14/2025	0.0503	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Barium (mg/L)	SW-26	0.216	n/a	4/14/2025	0.0737	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Beryllium (mg/L)	n/a	0.001	n/a	n/a	4 future	n/a	14	100	n/a	0.007852	NP Inter (NDs) 1 of 2
Boron (mg/L)	SW-23	6.67	n/a	4/14/2025	0.755	No	15	73.33	n/a	0.006934	NP Inter (NDs) 1 of 2
Boron (mg/L)	**SW-24**	**6.67**	**n/a**	**4/14/2025**	**7.82**	**Yes**	**15**	**73.33**	**n/a**	**0.006934**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	SW-25	6.67	n/a	4/14/2025	3.57	No	15	73.33	n/a	0.006934	NP Inter (NDs) 1 of 2
Boron (mg/L)	SW-26	6.67	n/a	4/14/2025	0.14	No	15	73.33	n/a	0.006934	NP Inter (NDs) 1 of 2
Calcium (mg/L)	SW-23	221	n/a	4/14/2025	63.1	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Calcium (mg/L)	SW-24	221	n/a	4/14/2025	183	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Calcium (mg/L)	SW-25	221	n/a	4/14/2025	143	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Calcium (mg/L)	SW-26	221	n/a	4/14/2025	66.2	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Chloride (mg/L)	SW-23	23.24	n/a	4/14/2025	20.4	No	15	0	No	0.0006269	Param Inter 1 of 2
Chloride (mg/L)	SW-24	23.24	n/a	4/14/2025	14.7	No	15	0	No	0.0006269	Param Inter 1 of 2
Chloride (mg/L)	SW-25	23.24	n/a	4/14/2025	17	No	15	0	No	0.0006269	Param Inter 1 of 2
Chloride (mg/L)	SW-26	23.24	n/a	4/14/2025	22.7	No	15	0	No	0.0006269	Param Inter 1 of 2
Cobalt (mg/L)	SW-23	0.00116	n/a	4/14/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Cobalt (mg/L)	SW-25	0.00116	n/a	4/14/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Cobalt (mg/L)	**SW-26**	**0.00116**	**n/a**	**4/14/2025**	**0.14**	**Yes**	**14**	**71.43**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Copper (mg/L)	SW-23	0.005	n/a	4/14/2025	0.005ND	No	13	100	n/a	0.008777	NP Inter (NDs) 1 of 2
Copper (mg/L)	**SW-26**	**0.005**	**n/a**	**4/14/2025**	**0.00773**	**Yes**	**13**	**100**	**n/a**	**0.008777**	**NP Inter (NDs) 1 of 2**
Fluoride (mg/L)	SW-23	1	n/a	4/14/2025	0.272	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	SW-24	1	n/a	4/14/2025	0.2	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	SW-25	1	n/a	4/14/2025	0.244	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	SW-26	1	n/a	4/14/2025	0.256	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Iron (mg/L)	SW-23	1.888	n/a	4/14/2025	0.183	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Iron (mg/L)	SW-24	1.888	n/a	4/14/2025	0.05ND	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Iron (mg/L)	SW-25	1.888	n/a	4/14/2025	0.05ND	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Iron (mg/L)	SW-26	1.888	n/a	4/14/2025	1.61	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Lead (mg/L)	SW-23	0.00258	n/a	4/14/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Lead (mg/L)	SW-25	0.00258	n/a	4/14/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Lead (mg/L)	**SW-26**	**0.00258**	**n/a**	**4/14/2025**	**0.00299**	**Yes**	**14**	**71.43**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Magnesium (mg/L)	SW-23	73.3	n/a	4/14/2025	28	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Magnesium (mg/L)	**SW-24**	**73.3**	**n/a**	**4/14/2025**	**78.7**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Magnesium (mg/L)	SW-25	73.3	n/a	4/14/2025	49.6	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Magnesium (mg/L)	SW-26	73.3	n/a	4/14/2025	23.1	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Manganese (mg/L)	SW-23	0.912	n/a	4/14/2025	0.0584	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Manganese (mg/L)	SW-24	0.912	n/a	4/14/2025	0.005ND	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Manganese (mg/L)	SW-25	0.912	n/a	4/14/2025	0.0159	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Manganese (mg/L)	SW-26	0.912	n/a	4/14/2025	0.0545	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Molybdenum (mg/L)	SW-23	0.00637	n/a	4/14/2025	0.002ND	No	14	92.86	n/a	0.007852	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	SW-24	0.00637	n/a	4/14/2025	0.00216	No	14	92.86	n/a	0.007852	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	SW-25	0.00637	n/a	4/14/2025	0.002ND	No	14	92.86	n/a	0.007852	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	**SW-26**	**0.00637**	**n/a**	**4/14/2025**	**0.00699**	**Yes**	**14**	**92.86**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Nickel (mg/L)	n/a	0.005	n/a	n/a	4 future	n/a	14	100	n/a	0.007852	NP Inter (NDs) 1 of 2
Selenium (mg/L)	**SW-26**	**0.005**	**n/a**	**4/14/2025**	**0.0375**	**Yes**	**14**	**100**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Strontium (mg/L)	SW-23	0.285	n/a	4/14/2025	0.128	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Strontium (mg/L)	SW-24	0.285	n/a	4/14/2025	0.271	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Strontium (mg/L)	SW-25	0.285	n/a	4/14/2025	0.206	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Strontium (mg/L)	**SW-26**	**0.285**	**n/a**	**4/14/2025**	**0.402**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	SW-23	554	n/a	4/14/2025	34.9	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Sulfate (mg/L)	SW-24	554	n/a	4/14/2025	129	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Sulfate (mg/L)	SW-25	554	n/a	4/14/2025	69.3	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Sulfate (mg/L)	SW-26	554	n/a	4/14/2025	45.5	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Vanadium (mg/L)	SW-26	0.00682	n/a	4/14/2025	0.00637	No	14	78.57	n/a	0.007852	NP Inter (NDs) 1 of 2
Zinc (mg/L)	SW-26	0.0312	n/a	4/14/2025	0.0207	No	14	92.86	n/a	0.007852	NP Inter (NDs) 1 of 2

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 14 background values. 21.43% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 3 points to limit. Assumes 1 future value.

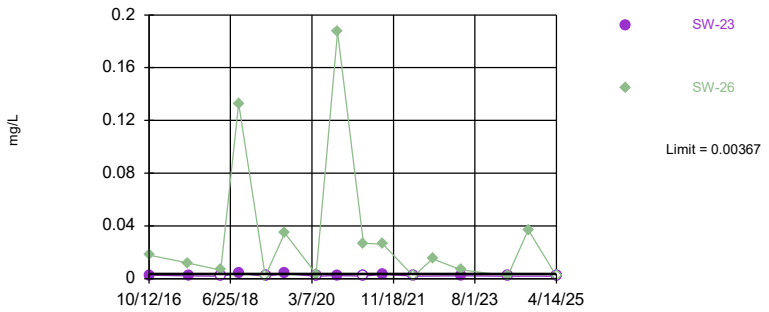
Constituent: Aluminum Analysis Run 12/10/2025 3:00 PM View: State Surface Water Prediction Limits Apr
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 78.57% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 2 points to limit. Assumes 2 future values.

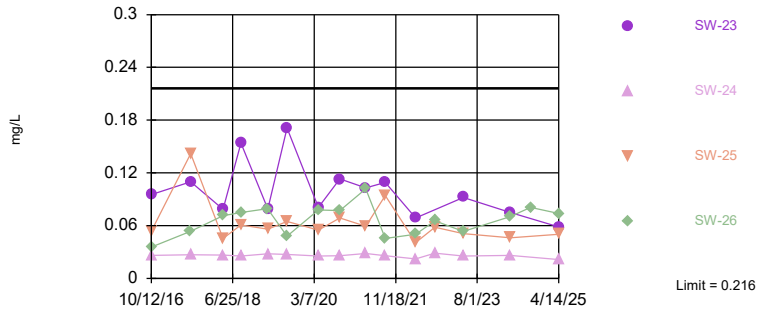
Constituent: Arsenic Analysis Run 12/10/2025 3:00 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Within Limit

Prediction Limit

Interwell Parametric



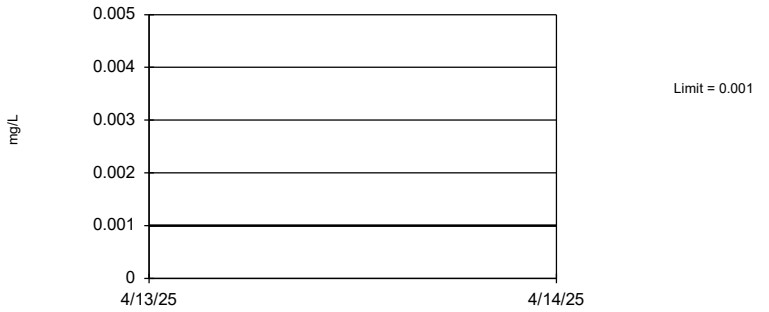
Background Data Summary (based on square root transformation): Mean=0.3296, Std. Dev.=0.05252, n=14. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.898, critical = 0.874. Kappa = 2.574 (c=21, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0006269. Comparing 4 points to limit.

Constituent: Barium Analysis Run 12/10/2025 3:00 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 14) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Assumes 4 future values.

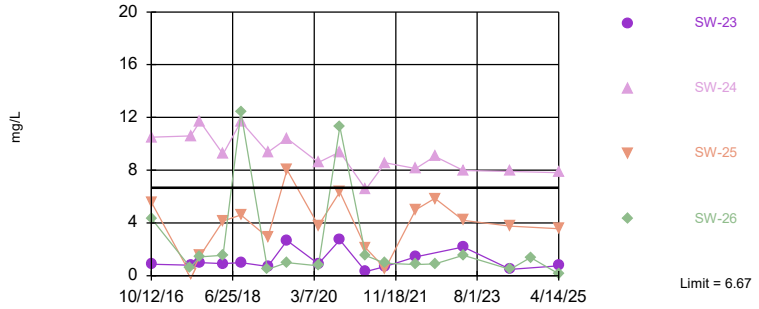
Constituent: Beryllium Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Exceeds Limit: SW-24

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 15 background values. 73.33% NDs. Annual per-constituent alpha = 0.05415. Individual comparison alpha = 0.006934 (1 of 2). Comparing 4 points to limit.

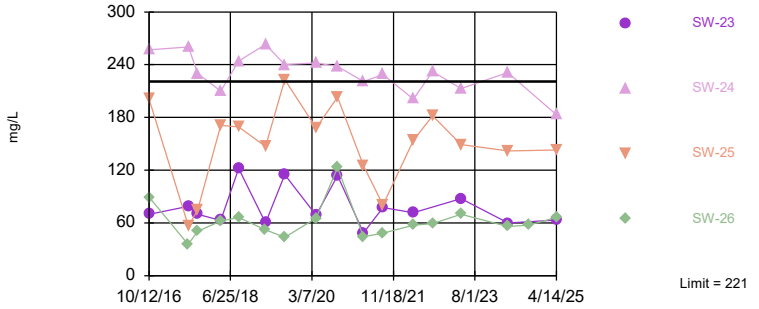
Constituent: Boron Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits April Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 15 background values. Annual per-constituent alpha = 0.05415. Individual comparison alpha = 0.006934 (1 of 2). Comparing 4 points to limit.

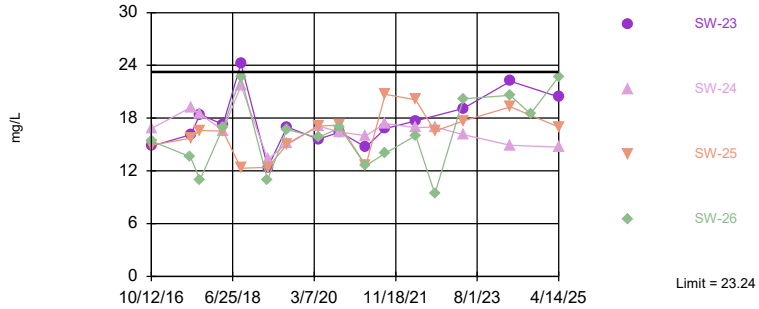
Constituent: Calcium Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits April Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=15.73, Std. Dev.=2.984, n=15. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9394, critical = 0.881. Kappa = 2.518 (c=21, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0006269. Comparing 4 points to limit.

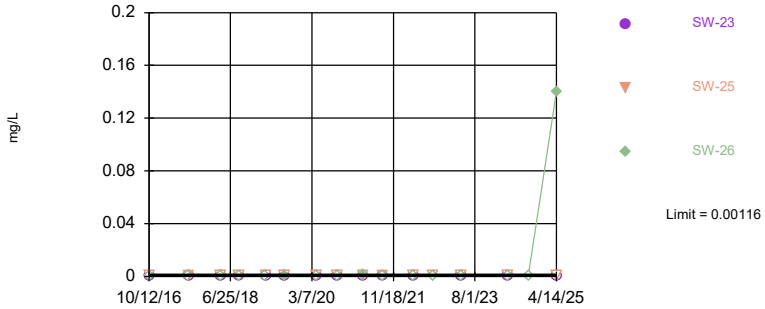
Constituent: Chloride Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits April Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Exceeds Limit: SW-26

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 71.43% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 3 points to limit. Assumes 1 future value.

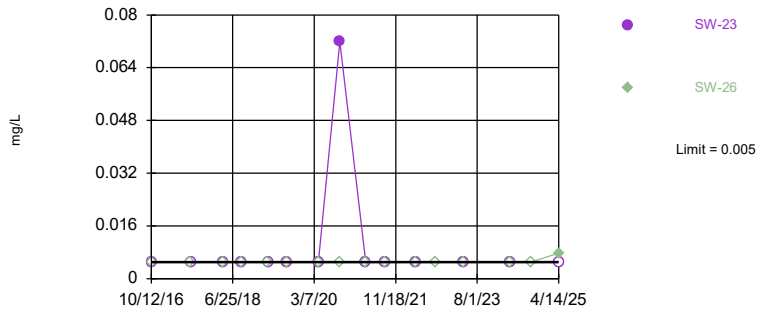
Constituent: Cobalt Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits April Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Exceeds Limit: SW-26

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 13) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.0681. Individual comparison alpha = 0.008777 (1 of 2). Comparing 2 points to limit. Assumes 2 future values.

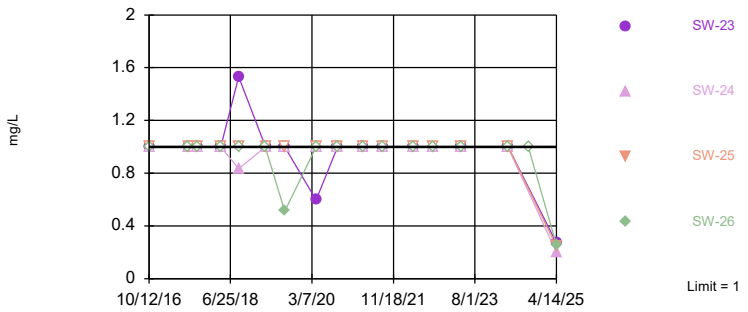
Constituent: Copper Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 15 background values. 86.67% NDs. Annual per-constituent alpha = 0.05415. Individual comparison alpha = 0.006934 (1 of 2). Comparing 4 points to limit.

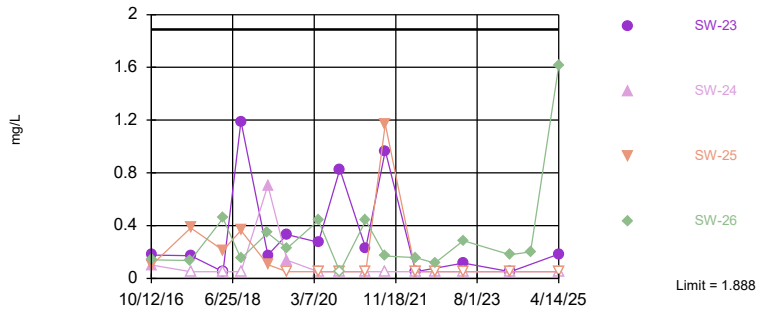
Constituent: Fluoride Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.6341, Std. Dev.=0.2876, n=14, 7.143% NDs. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9123, critical = 0.874. Kappa = 2.574 (c=21, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0006269. Comparing 4 points to limit.

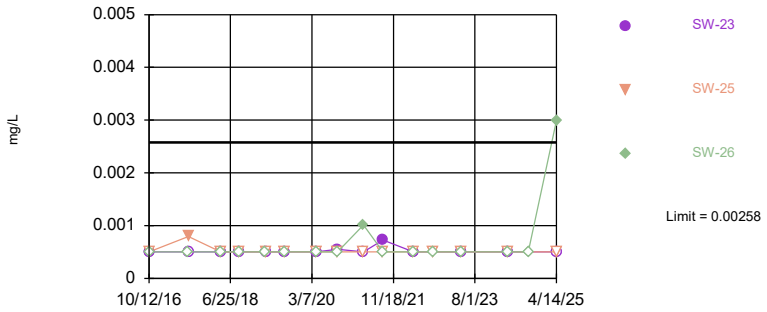
Constituent: Iron Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Exceeds Limit: SW-26

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 71.43% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 3 points to limit. Assumes 1 future value.

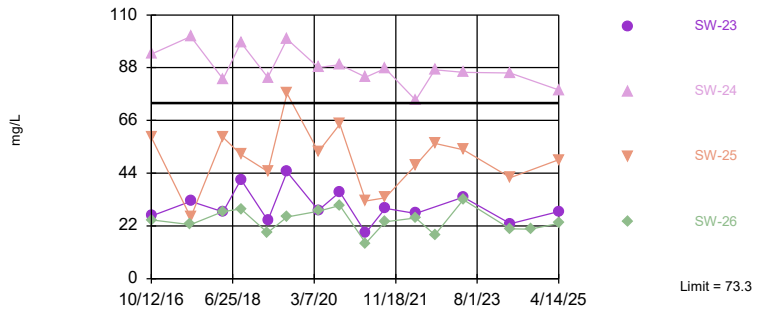
Constituent: Lead Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Exceeds Limit: SW-24

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 14 background values. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 4 points to limit.

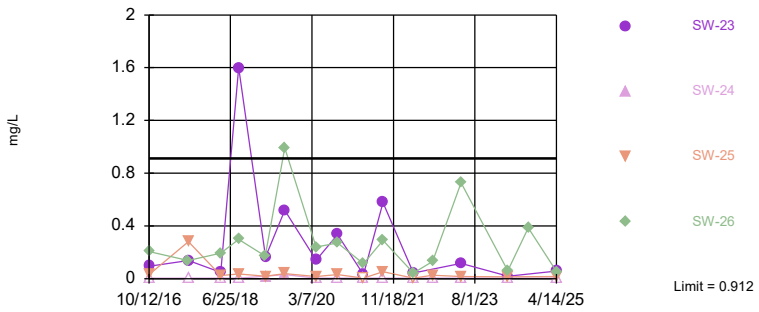
Constituent: Magnesium Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits A
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.4307, Std. Dev.=0.2037, n=14. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9125, critical = 0.874. Kappa = 2.574 (c=21, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0006269. Comparing 4 points to limit.

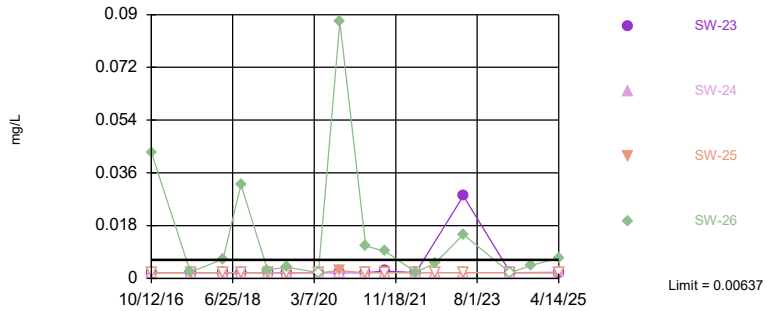
Constituent: Manganese Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits A
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Exceeds Limit: SW-26

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 92.86% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 4 points to limit.

Constituent: Molybdenum Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 14) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Assumes 4 future values.

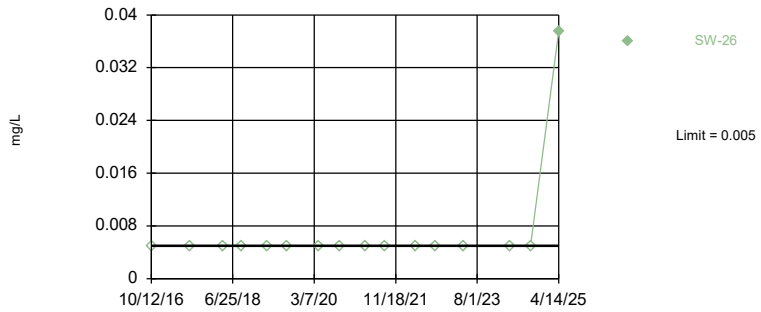
Constituent: Nickel Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Exceeds Limit: SW-26

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 14) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Assumes 3 future values.

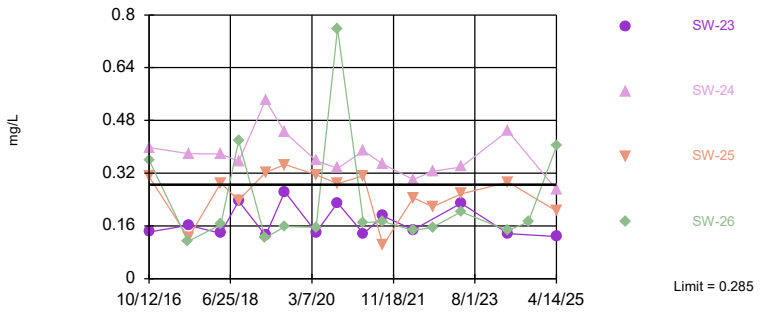
Constituent: Selenium Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits Apri
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Exceeds Limit: SW-26

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 14 background values. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 4 points to limit.

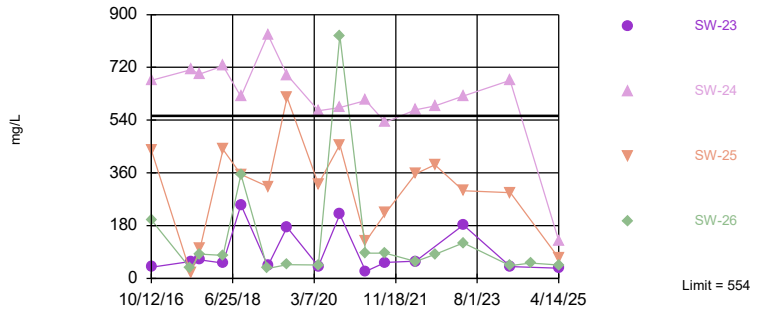
Constituent: Strontium Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits Apri
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 15 background values. Annual per-constituent alpha = 0.05415. Individual comparison alpha = 0.006934 (1 of 2). Comparing 4 points to limit.

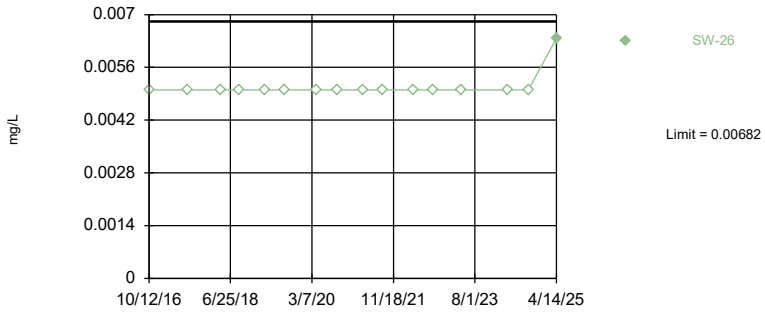
Constituent: Sulfate Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 78.57% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Assumes 3 future values.

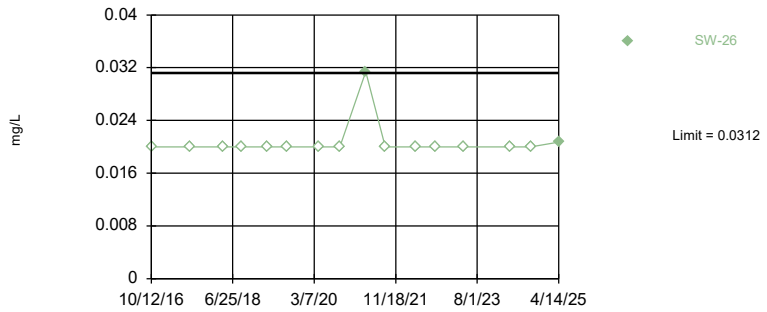
Constituent: Vanadium Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits Apr
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 92.86% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Assumes 3 future values.

Constituent: Zinc Analysis Run 12/10/2025 3:01 PM View: State Surface Water Prediction Limits April Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Prediction Limit

Constituent: Aluminum (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-23
10/12/2016	0.217	<0.05	<0.05	0.0624
8/7/2017		<0.05		
8/9/2017	<0.05		0.276	0.0626
4/11/2018	0.0713	0.117	<0.05	<0.05
8/27/2018	1.09	<0.05	<0.05	0.137
3/18/2019		0.169		
3/20/2019	0.153		<0.05	0.0744
8/13/2019	0.194	0.0646	<0.05	0.0761
4/7/2020	0.0821	0.134	<0.05	0.0578
9/18/2020	1.28	<0.05	<0.05	0.44
4/5/2021	0.191	0.432	<0.05	0.187
9/1/2021	0.982	0.0654	0.858	0.648
4/20/2022	<0.05	<0.05	<0.05	<0.05
9/14/2022		<0.05	<0.05	
4/19/2023	0.0782	<0.05	<0.05	<0.05
4/9/2024		0.119		
4/10/2024	0.172		<0.05	<0.05
9/12/2024		0.0588		
4/14/2025	<0.05	1.28	<0.05	<0.05

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-26
10/12/2016	<0.002	0.00257	0.018
8/7/2017			0.0118
8/9/2017	<0.002	0.00211	
4/11/2018	<0.002	<0.002	0.00661
8/27/2018	<0.002	0.00401	0.133
3/18/2019			<0.002
3/20/2019	<0.002	<0.002	
8/13/2019	0.00342	0.00378	0.0347
4/7/2020	<0.002	<0.002	0.00368
9/18/2020	0.00217	0.00236	0.187
4/5/2021	<0.002	<0.002	0.0268
9/1/2021	0.00367	0.00332	0.0262
4/20/2022	<0.002	<0.002	<0.002
9/14/2022			0.0151
4/19/2023	<0.002	0.00221	0.00664
4/9/2024			0.00217
4/10/2024	<0.002	<0.002	
9/12/2024			0.0371
4/14/2025	<0.002	<0.002	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-24	SW-26	SW-23	SW-25
10/12/2016	0.111	0.0261	0.0357	0.0953	0.0538
8/7/2017			0.0535		
8/9/2017	0.0601	0.0268		0.11	0.142
4/11/2018	0.0806	0.0264	0.0712	0.0785	0.0456
8/27/2018	0.108	0.0256	0.0751	0.154	0.0608
3/18/2019			0.0793		
3/20/2019	0.0996	0.0278		0.079	0.056
8/13/2019	0.168	0.0272	0.048	0.171	0.0648
4/7/2020	0.0967	0.0254	0.078	0.0806	0.0548
9/18/2020	0.168	0.0257	0.0772	0.113	0.0686
4/5/2021	0.112	0.0285	0.102	0.103	0.0594
9/1/2021	0.181	0.0259	0.0455	0.109	0.0941
4/20/2022	0.1	0.0222	0.0503	0.0689	0.0407
9/14/2022		0.0288	0.0656		0.058
4/19/2023	0.101	0.0253	0.0536	0.0922	0.051
4/9/2024		0.0262	0.0701		
4/10/2024	0.0964			0.075	0.0461
9/12/2024			0.0808		
4/14/2025	0.0741	0.0213	0.0737	0.0586	0.0503

Prediction Limit

Constituent: Beryllium (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)
10/12/2016	<0.001
8/9/2017	<0.001
4/11/2018	<0.001
8/27/2018	<0.001
3/20/2019	<0.001
8/13/2019	<0.001
4/7/2020	<0.001
9/18/2020	<0.001
4/5/2021	<0.001
9/1/2021	<0.001
4/20/2022	<0.001
4/19/2023	<0.001
4/10/2024	<0.001
4/14/2025	<0.001

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-24	SW-26	SW-23	SW-25
10/12/2016	1.25	10.5	4.33	0.869	5.57
8/7/2017			0.631		
8/9/2017	5.95	10.6		0.789	<0.1
10/17/2017	6.67	11.7	1.43	0.981	1.51
4/11/2018	<0.1	9.21	1.54	0.922	4.15
8/27/2018	<0.1	11.7	12.4	0.983	4.61
3/18/2019			0.486		
3/20/2019	<0.1	9.36		0.693	2.9
8/13/2019	<0.1	10.4	1	2.66	8.03
4/7/2020	<0.1	8.58	0.745	0.898	3.8
9/18/2020	0.206	9.39	11.3	2.72	6.36
4/5/2021	<0.1	6.55	1.52	0.32	2.11
9/1/2021	<0.1	8.55	0.941	0.704	0.528
4/20/2022	<0.1	8.12	0.855	1.43	5
9/14/2022		9.05	0.892		5.86
4/19/2023	<0.1	7.97	1.54	2.17	4.2
4/9/2024		7.91	0.484		
4/10/2024	<0.1			0.485	3.76
9/12/2024			1.38		
4/14/2025	<0.1	7.82	0.14	0.755	3.57

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-24	SW-26	SW-23	SW-25
10/12/2016	75.5	257	89.3	69.8	201
8/7/2017			35.5		
8/9/2017	221	260		79.1	56.3
10/17/2017	204	230	50.6	70	74.8
4/11/2018	45.2	210	62.1	62.9	171
8/27/2018	33.3	244	66.1	122	169
3/18/2019			52.4		
3/20/2019	51.8	263		60.1	147
8/13/2019	47.4	240	43.6	115	223
4/7/2020	59.6	242	65.5	68.6	168
9/18/2020	55.1	238	123	114	203
4/5/2021	42.4	221	44.5	48.7	125
9/1/2021	58.1	229	48.3	77.3	80.5
4/20/2022	58.6	201	57.4	71.7	154
9/14/2022		232	59.4		182
4/19/2023	57.6	213	70	87.6	149
4/9/2024		231	56.1		
4/10/2024	50.5			60	142
9/12/2024			57.3		
4/14/2025	51.5	183	66.2	63.1	143

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-24	SW-26	SW-23	SW-25
10/12/2016	13.9	16.8	15.4	14.8	14.9
8/7/2017			13.6		
8/9/2017	20	19.2		16.1	15.7
10/17/2017	16.8	18.5	11	18.4	16.6
4/11/2018	16.5	16.6	16.9	17.3	16.5
8/27/2018	11.7	21.7	22.7	24.2	12.3
3/18/2019			11		
3/20/2019	12.9	13.3		12.4	12.4
8/13/2019	12.3	15.1	16.7	17	15
4/7/2020	14.5	17.1	15.8	15.6	17.1
9/18/2020	13.3	16.4	16.9	16.4	17.2
4/5/2021	14.9	16	12.6	14.7	12.6
9/1/2021	13.7	17.4	14	16.8	20.7
4/20/2022	16.3	16.9	16	17.7	20.1
9/14/2022		17	9.4		16.5
4/19/2023	18	16.1	20.2	19.1	17.7
4/9/2024		14.9	20.6		
4/10/2024	21.3			22.2	19.3
9/12/2024			18.5		
4/14/2025	19.8	14.7	22.7	20.4	17

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-23
10/12/2016	<0.0005	<0.0005	<0.0005	<0.0005
8/7/2017		<0.0005		
8/9/2017	<0.0005		0.00064	<0.0005
4/11/2018	<0.0005	<0.0005	<0.0005	<0.0005
8/27/2018	<0.0005	<0.0005	<0.0005	0.00066
3/18/2019		<0.0005		
3/20/2019	<0.0005		<0.0005	<0.0005
8/13/2019	0.000833	0.000613	<0.0005	<0.0005
4/7/2020	<0.0005	<0.0005	<0.0005	<0.0005
9/18/2020	0.00116	<0.0005	<0.0005	<0.0005
4/5/2021	<0.0005	0.00134	<0.0005	<0.0005
9/1/2021	0.00105	<0.0005	0.000512	0.000529
4/20/2022	0.000713	<0.0005	<0.0005	<0.0005
9/14/2022		<0.0005	<0.0005	
4/19/2023	<0.0005	<0.0005	<0.0005	<0.0005
4/9/2024		<0.0005		
4/10/2024	<0.0005		<0.0005	<0.0005
9/12/2024		<0.0005		
4/14/2025	<0.0005	0.14	<0.0005	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Copper (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-23	SW-26
10/12/2016	<0.005	<0.005	<0.005
8/7/2017			<0.005
8/9/2017	<0.005	<0.005	
4/11/2018	<0.005	<0.005	<0.005
8/27/2018	<0.005	<0.005	<0.005
3/18/2019			<0.005
3/20/2019	<0.005	<0.005	
8/13/2019	<0.005	<0.005	<0.005
4/7/2020	<0.005	<0.005	<0.005
9/18/2020	<0.005	0.0719	<0.005
4/5/2021	<0.005	<0.005	<0.005
9/1/2021	0.0358 (o)	<0.005	<0.005
4/20/2022	<0.005	<0.005	<0.005
9/14/2022			<0.005
4/19/2023	<0.005	<0.005	<0.005
4/9/2024			<0.005
4/10/2024	<0.005	<0.005	
9/12/2024			<0.005
4/14/2025	<0.005	<0.005	0.00773

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-24	SW-26	SW-23	SW-25
10/12/2016	<1	<1	<1	<1	<1
8/7/2017			<1		
8/9/2017	<1	<1		<1	<1
10/17/2017	<1	<1	<1	<1	<1
4/11/2018	<1	<1	<1	<1	<1
8/27/2018	<1	0.834	<1	1.53	<1
3/18/2019			<1		
3/20/2019	<1	<1		<1	<1
8/13/2019	<1	<1	0.512	<1	<1
4/7/2020	<1	<1	<1	0.597	<1
9/18/2020	<1	<1	<1	<1	<1
4/5/2021	0.6	<1	<1	<1	<1
9/1/2021	<1	<1	<1	<1	<1
4/20/2022	<1	<1	<1	<1	<1
9/14/2022		<1	<1		<1
4/19/2023	<1	<1	<1	<1	<1
4/9/2024		<1	<1		
4/10/2024	<1			<1	<1
9/12/2024			<1		
4/14/2025	0.271	0.2	0.256	0.272	0.244

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-24	SW-26	SW-23	SW-25
10/12/2016	0.415	0.102	0.141	0.177	0.1
8/7/2017			0.135		
8/9/2017	<0.1	<0.1		0.173	0.384
4/11/2018	0.259	<0.1	0.457	<0.1	0.212
8/27/2018	1.01	<0.1	0.151	1.19	0.363
3/18/2019			0.345		
3/20/2019	0.66	0.705		0.176	0.104
8/13/2019	0.408	0.137	0.227	0.332	<0.1
4/7/2020	0.363	<0.1	0.439	0.275	<0.1
9/18/2020	1.25	<0.1	<0.1	0.827	<0.1
4/5/2021	0.21	<0.1	0.439	0.228	<0.1
9/1/2021	1.34	<0.1	0.169	0.967	1.17
4/20/2022	0.123	<0.1	0.157	<0.1	<0.1
9/14/2022		<0.1	0.116		<0.1
4/19/2023	0.24	<0.1	0.286	0.117	<0.1
4/9/2024		<0.1	0.178		
4/10/2024	0.196			<0.1	<0.1
9/12/2024			0.2		
4/14/2025	0.181	<0.1	1.61	0.183	<0.1

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-23
10/12/2016	<0.0005	<0.0005	<0.0005	<0.0005
8/7/2017		<0.0005		
8/9/2017	<0.0005		0.000796	<0.0005
4/11/2018	<0.0005	<0.0005	<0.0005	<0.0005
8/27/2018	0.000716	<0.0005	<0.0005	<0.0005
3/18/2019		<0.0005		
3/20/2019	<0.0005		<0.0005	<0.0005
8/13/2019	0.000623	<0.0005	<0.0005	<0.0005
4/7/2020	<0.0005	<0.0005	<0.0005	<0.0005
9/18/2020	0.000829	<0.0005	<0.0005	0.000549
4/5/2021	<0.0005	0.00101	<0.0005	<0.0005
9/1/2021	0.00258	<0.0005	<0.0005	0.000726
4/20/2022	<0.0005	<0.0005	<0.0005	<0.0005
9/14/2022		<0.0005	<0.0005	
4/19/2023	<0.0005	<0.0005	<0.0005	<0.0005
4/9/2024		<0.0005		
4/10/2024	<0.0005		<0.0005	<0.0005
9/12/2024		<0.0005		
4/14/2025	<0.0005	0.00299	<0.0005	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-24	SW-26	SW-23	SW-25
10/12/2016	28.6	93.7	24.5	26.1	58.9
8/7/2017			22.6		
8/9/2017	73.3	101		32.3	25.6
4/11/2018	21.1	83.2	28	27.9	59
8/27/2018	13.6	98.4	29.1	41.4	51.8
3/18/2019			19.2		
3/20/2019	22.6	83.9		24.3	44.7
8/13/2019	20.9	99.9	25.8	44.6	77.3
4/7/2020	26.4	88.1	28.2	28.5	53
9/18/2020	22.9	89.2	30.5	36.2	64.5
4/5/2021	17.2	84	14.8	19	32.4
9/1/2021	25.8	87.6	23.8	29.4	33.8
4/20/2022	23.6	74.4	25.4	27.2	47.3
9/14/2022		87.1	18.3		56.4
4/19/2023	25.1	86.1	33	34	53.8
4/9/2024		85.8	20.8		
4/10/2024	20.9			23	42.2
9/12/2024			20.6		
4/14/2025	22.6	78.7	23.1	28	49.6

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-24	SW-26	SW-23	SW-25
10/12/2016	0.205	<0.01	0.205	0.0951	0.0315
8/7/2017			0.139		
8/9/2017	0.0766	<0.01		0.139	0.282
4/11/2018	0.18	<0.01	0.194	0.0476	0.0244
8/27/2018	0.0399	<0.01	0.298	1.6	0.0361
3/18/2019			0.172		
3/20/2019	0.196	0.0179		0.164	0.0184
8/13/2019	0.694	0.0304	0.993	0.52	0.0387
4/7/2020	0.217	<0.01	0.241	0.14	0.0156
9/18/2020	0.492	<0.01	0.271	0.335	0.0311
4/5/2021	0.0882	<0.01	0.114	0.0311	<0.01
9/1/2021	0.539	<0.01	0.29	0.578	0.054
4/20/2022	0.125	<0.01	0.0422	0.0426	<0.01
9/14/2022		<0.01	0.131		0.026
4/19/2023	0.204	<0.01	0.728	0.115	0.0169
4/9/2024		<0.01	0.0612		
4/10/2024	0.0309			0.0181	0.0148
9/12/2024			0.385		
4/14/2025	0.0486	<0.01	0.0545	0.0584	0.0159

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Molybdenum (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-24	SW-26	SW-23	SW-25
10/12/2016	<0.002	<0.002	0.043	<0.002	<0.002
8/7/2017			0.00214		
8/9/2017	<0.002	<0.002		<0.002	<0.002
4/11/2018	<0.002	<0.002	0.00659	<0.002	<0.002
8/27/2018	<0.002	<0.002	0.032	<0.002	<0.002
3/18/2019			0.00291		
3/20/2019	<0.002	<0.002		<0.002	<0.002
8/13/2019	<0.002	<0.002	0.00379	<0.002	<0.002
4/7/2020	<0.002	<0.002	<0.002	<0.002	<0.002
9/18/2020	<0.002	<0.002	0.0876	<0.002	0.00256
4/5/2021	<0.002	<0.002	0.011	<0.002	<0.002
9/1/2021	0.00637	<0.002	0.00925	0.00252	<0.002
4/20/2022	<0.002	<0.002	0.00202	<0.002	<0.002
9/14/2022		<0.002	0.00514		<0.002
4/19/2023	<0.002	<0.002	0.0149	0.0281	<0.002
4/9/2024		<0.002	<0.002		
4/10/2024	<0.002			<0.002	<0.002
9/12/2024			0.00433		
4/14/2025	<0.002	0.00216	0.00699	<0.002	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Nickel (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)
10/12/2016	<0.005
8/9/2017	<0.005
4/11/2018	<0.005
8/27/2018	<0.005
3/20/2019	<0.005
8/13/2019	<0.005
4/7/2020	<0.005
9/18/2020	<0.005
4/5/2021	<0.005
9/1/2021	<0.005
4/20/2022	<0.005
4/19/2023	<0.005
4/10/2024	<0.005
4/14/2025	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26
10/12/2016	<0.005	<0.005
8/7/2017		<0.005
8/9/2017	<0.005	
4/11/2018	<0.005	<0.005
8/27/2018	<0.005	<0.005
3/18/2019		<0.005
3/20/2019	<0.005	
8/13/2019	<0.005	<0.005
4/7/2020	<0.005	<0.005
9/18/2020	<0.005	<0.005
4/5/2021	<0.005	<0.005
9/1/2021	<0.005	<0.005
4/20/2022	<0.005	<0.005
9/14/2022		<0.005
4/19/2023	<0.005	<0.005
4/9/2024		<0.005
4/10/2024	<0.005	
9/12/2024		<0.005
4/14/2025	<0.005	0.0375

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Strontium (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-24	SW-26	SW-23	SW-25
10/12/2016	0.148	0.398	0.36	0.142	0.309
8/7/2017			0.113		
8/9/2017	0.285	0.379		0.162	0.124
4/11/2018	0.0998	0.378	0.164	0.138	0.29
8/27/2018	0.0842	0.356	0.418	0.236	0.238
3/18/2019			0.123		
3/20/2019	0.12	0.541		0.131	0.322
8/13/2019	0.129	0.444	0.158	0.264	0.346
4/7/2020	0.128	0.358	0.156	0.141	0.315
9/18/2020	0.125	0.335	0.759	0.23	0.288
4/5/2021	0.12	0.388	0.17	0.137	0.312
9/1/2021	0.147	0.347	0.174	0.19	0.101
4/20/2022	0.125	0.301	0.146	0.148	0.245
9/14/2022		0.326	0.156		0.218
4/19/2023	0.111	0.339	0.203	0.229	0.257
4/9/2024		0.448	0.146		
4/10/2024	0.115			0.137	0.293
9/12/2024			0.172		
4/14/2025	0.103	0.271	0.402	0.128	0.206

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-24	SW-26	SW-23	SW-25
10/12/2016	73	676	200	37.7	438
8/7/2017			33.8		
8/9/2017	554	712		58.1	16.9
10/17/2017	213	698	82.5	63.7	101
4/11/2018	20.1	725	78.8	52	440
8/27/2018	13.2	620	355	251	355
3/18/2019			33.7		
3/20/2019	20.4	832		42.2	313
8/13/2019	10.1	694	46.3	175	618
4/7/2020	16.3	572	45.9	41.5	322
9/18/2020	21	583	828	218	456
4/5/2021	13.9	607	86.4	23.6	127
9/1/2021	14.3	533	85.9	54.3	222
4/20/2022	15.7	575	57.3	58.4	357
9/14/2022		588	81.4		387
4/19/2023	15.7	622	121	182	299
4/9/2024		676	43.8		
4/10/2024	15.1			40.2	292
9/12/2024			52.2		
4/14/2025	15.7	129	45.5	34.9	69.3

Prediction Limit

Constituent: Vanadium (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26
10/12/2016	<0.005	<0.005
8/7/2017		<0.005
8/9/2017	<0.005	
4/11/2018	<0.005	<0.005
8/27/2018	0.00549	<0.005
3/18/2019		<0.005
3/20/2019	<0.005	
8/13/2019	<0.005	<0.005
4/7/2020	<0.005	<0.005
9/18/2020	0.00516	<0.005
4/5/2021	<0.005	<0.005
9/1/2021	0.00682	<0.005
4/20/2022	<0.005	<0.005
9/14/2022		<0.005
4/19/2023	<0.005	<0.005
4/9/2024		<0.005
4/10/2024	<0.005	
9/12/2024		<0.005
4/14/2025	<0.005	0.00637

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Zinc (mg/L) Analysis Run 12/10/2025 3:13 PM View: State Surface Water Prediction Limits April
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26
10/12/2016	<0.02	<0.02
8/7/2017		<0.02
8/9/2017	<0.02	
4/11/2018	<0.02	<0.02
8/27/2018	<0.02	<0.02
3/18/2019		<0.02
3/20/2019	<0.02	
8/13/2019	<0.02	<0.02
4/7/2020	<0.02	<0.02
9/18/2020	<0.02	<0.02
4/5/2021	<0.02	0.0314
9/1/2021	0.0312	<0.02
4/20/2022	<0.02	<0.02
9/14/2022		<0.02
4/19/2023	<0.02	<0.02
4/9/2024		<0.02
4/10/2024	<0.02	
9/12/2024		<0.02
4/14/2025	<0.02	0.0207

ND substitution: RL or RL/2 if <15% NDs.

FIGURE I.

Interwell Prediction Limits - Surface Water Locations (September 2025) - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/10/2025, 3:28 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	**SW-26**	**0.00367**	**n/a**	**9/10/2025**	**0.0489**	**Yes**	**14**	**78.57**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**SW-24**	**6.67**	**n/a**	**9/10/2025**	**8.09**	**Yes**	**15**	**73.33**	**n/a**	**0.006934**	**NP Inter (NDs) 1 of 2**
Calcium (mg/L)	**SW-24**	**221**	**n/a**	**9/10/2025**	**227**	**Yes**	**15**	**0**	**n/a**	**0.006934**	**NP Inter (normality) 1 of 2**
Chloride (mg/L)	**SW-26**	**23.24**	**n/a**	**9/10/2025**	**24.8**	**Yes**	**15**	**0**	**No**	**0.0006269**	**Param Inter 1 of 2**
Magnesium (mg/L)	**SW-24**	**73.3**	**n/a**	**9/10/2025**	**95.8**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Molybdenum (mg/L)	**SW-25**	**0.00637**	**n/a**	**9/10/2025**	**0.00772**	**Yes**	**14**	**92.86**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Molybdenum (mg/L)	**SW-26**	**0.00637**	**n/a**	**9/10/2025**	**0.0427**	**Yes**	**14**	**92.86**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Strontium (mg/L)	**SW-24**	**0.285**	**n/a**	**9/10/2025**	**0.368**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Strontium (mg/L)	**SW-26**	**0.285**	**n/a**	**9/10/2025**	**0.387**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**SW-24**	**554**	**n/a**	**9/10/2025**	**594**	**Yes**	**15**	**0**	**n/a**	**0.006934**	**NP Inter (normality) 1 of 2**

Interwell Prediction Limits - Surface Water Locations (September 2025) - All Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/10/2025, 3:28 PM

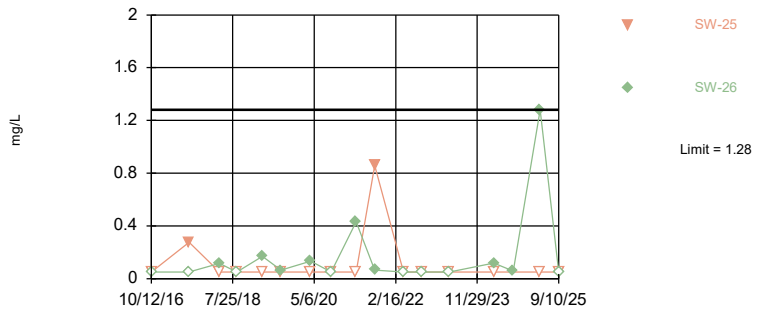
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Aluminum (mg/L)	SW-25	1.28	n/a	9/10/2025	0.05ND	No	14	21.43	n/a	0.007852	NP Inter (normality) 1 of 2
Aluminum (mg/L)	SW-26	1.28	n/a	9/10/2025	0.05ND	No	14	21.43	n/a	0.007852	NP Inter (normality) 1 of 2
Arsenic (mg/L)	**SW-26**	**0.00367**	**n/a**	**9/10/2025**	**0.0489**	**Yes**	**14**	**78.57**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Barium (mg/L)	SW-24	0.216	n/a	9/10/2025	0.0244	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Barium (mg/L)	SW-25	0.216	n/a	9/10/2025	0.0579	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Barium (mg/L)	SW-26	0.216	n/a	9/10/2025	0.0865	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Beryllium (mg/L)	n/a	0.001	n/a	n/a	4 future	n/a	14	100	n/a	0.007852	NP Inter (NDs) 1 of 2
Boron (mg/L)	**SW-24**	**6.67**	**n/a**	**9/10/2025**	**8.09**	**Yes**	**15**	**73.33**	**n/a**	**0.006934**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	SW-25	6.67	n/a	9/10/2025	5.25	No	15	73.33	n/a	0.006934	NP Inter (NDs) 1 of 2
Boron (mg/L)	SW-26	6.67	n/a	9/10/2025	5.19	No	15	73.33	n/a	0.006934	NP Inter (NDs) 1 of 2
Calcium (mg/L)	**SW-24**	**221**	**n/a**	**9/10/2025**	**227**	**Yes**	**15**	**0**	**n/a**	**0.006934**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	SW-25	221	n/a	9/10/2025	159	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Calcium (mg/L)	SW-26	221	n/a	9/10/2025	69.3	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Chloride (mg/L)	SW-24	23.24	n/a	9/10/2025	16.3	No	15	0	No	0.0006269	Param Inter 1 of 2
Chloride (mg/L)	SW-25	23.24	n/a	9/10/2025	21	No	15	0	No	0.0006269	Param Inter 1 of 2
Chloride (mg/L)	**SW-26**	**23.24**	**n/a**	**9/10/2025**	**24.8**	**Yes**	**15**	**0**	**No**	**0.0006269**	**Param Inter 1 of 2**
Cobalt (mg/L)	SW-25	0.00116	n/a	9/10/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Cobalt (mg/L)	SW-26	0.00116	n/a	9/10/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Copper (mg/L)	SW-26	0.005	n/a	9/10/2025	0.005ND	No	13	100	n/a	0.008777	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	SW-24	1	n/a	9/10/2025	0.187	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	SW-25	1	n/a	9/10/2025	0.231	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	SW-26	1	n/a	9/10/2025	0.357	No	15	86.67	n/a	0.006934	NP Inter (NDs) 1 of 2
Iron (mg/L)	SW-24	1.888	n/a	9/10/2025	0.05ND	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Iron (mg/L)	SW-25	1.888	n/a	9/10/2025	0.05ND	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Iron (mg/L)	SW-26	1.888	n/a	9/10/2025	0.191	No	14	7.143	sqrt(x)	0.0006269	Param Inter 1 of 2
Lead (mg/L)	SW-25	0.00258	n/a	9/10/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Lead (mg/L)	SW-26	0.00258	n/a	9/10/2025	0.0005ND	No	14	71.43	n/a	0.007852	NP Inter (NDs) 1 of 2
Magnesium (mg/L)	**SW-24**	**73.3**	**n/a**	**9/10/2025**	**95.8**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Magnesium (mg/L)	SW-25	73.3	n/a	9/10/2025	53.3	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Magnesium (mg/L)	SW-26	73.3	n/a	9/10/2025	29.1	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Manganese (mg/L)	SW-24	0.912	n/a	9/10/2025	0.005ND	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Manganese (mg/L)	SW-25	0.912	n/a	9/10/2025	0.0219	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Manganese (mg/L)	SW-26	0.912	n/a	9/10/2025	0.225	No	14	0	sqrt(x)	0.0006269	Param Inter 1 of 2
Molybdenum (mg/L)	SW-24	0.00637	n/a	9/10/2025	0.002ND	No	14	92.86	n/a	0.007852	NP Inter (NDs) 1 of 2
Molybdenum (mg/L)	**SW-25**	**0.00637**	**n/a**	**9/10/2025**	**0.00772**	**Yes**	**14**	**92.86**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Molybdenum (mg/L)	**SW-26**	**0.00637**	**n/a**	**9/10/2025**	**0.0427**	**Yes**	**14**	**92.86**	**n/a**	**0.007852**	**NP Inter (NDs) 1 of 2**
Nickel (mg/L)	n/a	0.005	n/a	n/a	4 future	n/a	14	100	n/a	0.007852	NP Inter (NDs) 1 of 2
Selenium (mg/L)	SW-26	0.005	n/a	9/10/2025	0.005ND	No	14	100	n/a	0.007852	NP Inter (NDs) 1 of 2
Strontium (mg/L)	**SW-24**	**0.285**	**n/a**	**9/10/2025**	**0.368**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Strontium (mg/L)	SW-25	0.285	n/a	9/10/2025	0.223	No	14	0	n/a	0.007852	NP Inter (normality) 1 of 2
Strontium (mg/L)	**SW-26**	**0.285**	**n/a**	**9/10/2025**	**0.387**	**Yes**	**14**	**0**	**n/a**	**0.007852**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	**SW-24**	**554**	**n/a**	**9/10/2025**	**594**	**Yes**	**15**	**0**	**n/a**	**0.006934**	**NP Inter (normality) 1 of 2**
Sulfate (mg/L)	SW-25	554	n/a	9/10/2025	344	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Sulfate (mg/L)	SW-26	554	n/a	9/10/2025	452	No	15	0	n/a	0.006934	NP Inter (normality) 1 of 2
Vanadium (mg/L)	SW-26	0.00682	n/a	9/10/2025	0.005ND	No	14	78.57	n/a	0.007852	NP Inter (NDs) 1 of 2
Zinc (mg/L)	SW-26	0.0312	n/a	9/10/2025	0.02ND	No	14	92.86	n/a	0.007852	NP Inter (NDs) 1 of 2

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 14 background values. 21.43% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 2 points to limit. Assumes 2 future values.

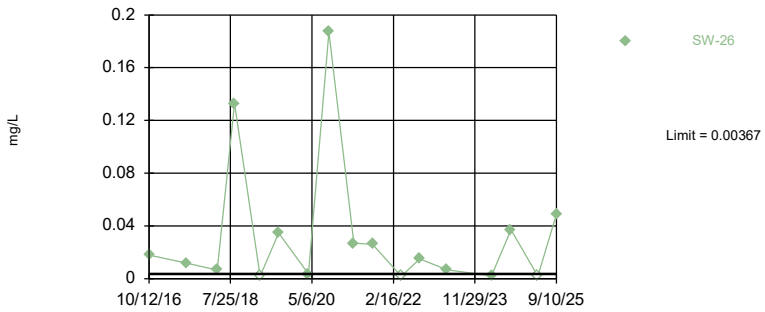
Constituent: Aluminum Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Exceeds Limit: SW-26

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 78.57% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Assumes 3 future values.

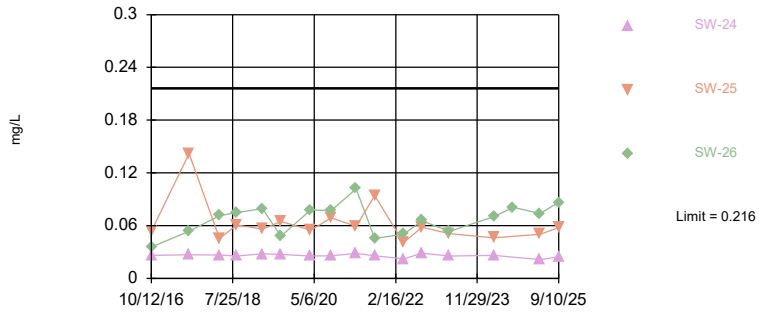
Constituent: Arsenic Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Within Limit

Prediction Limit

Interwell Parametric



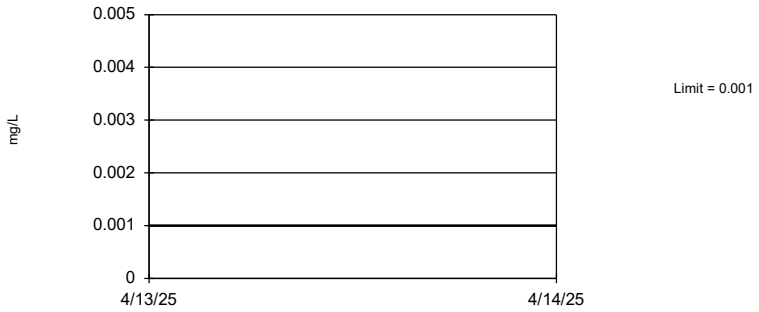
Background Data Summary (based on square root transformation): Mean=0.3296, Std. Dev.=0.05252, n=14. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.898, critical = 0.874. Kappa = 2.574 (c=21, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0006269. Comparing 3 points to limit. Assumes 1 future value.

Constituent: Barium Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 14) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Assumes 4 future values.

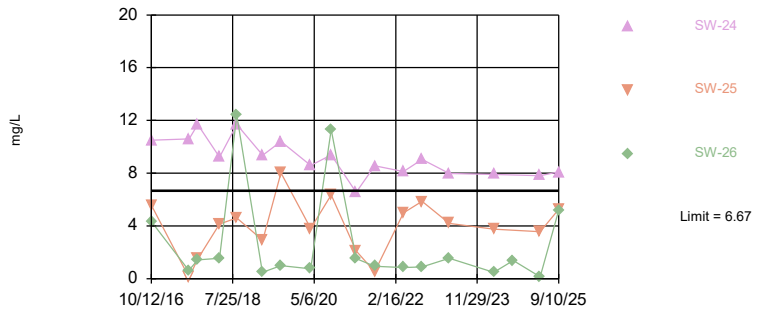
Constituent: Beryllium Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Exceeds Limit: SW-24

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 15 background values. 73.33% NDs. Annual per-constituent alpha = 0.05415. Individual comparison alpha = 0.006934 (1 of 2). Comparing 3 points to limit. Assumes 1 future value.

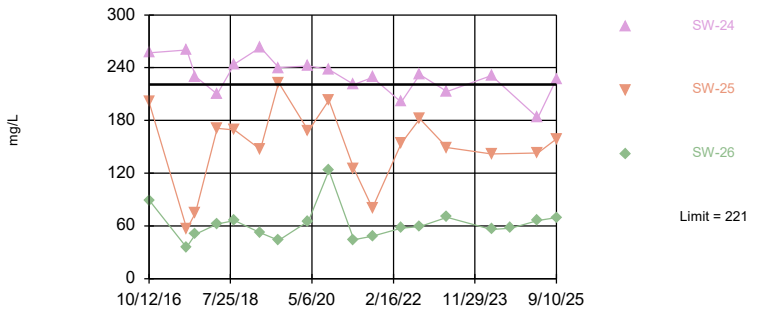
Constituent: Boron Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Exceeds Limit: SW-24

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 15 background values. Annual per-constituent alpha = 0.05415. Individual comparison alpha = 0.006934 (1 of 2). Comparing 3 points to limit. Assumes 1 future value.

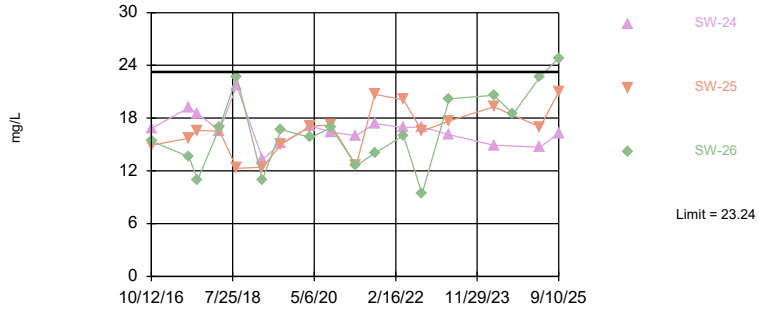
Constituent: Calcium Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Exceeds Limit: SW-26

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=15.73, Std. Dev.=2.984, n=15. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9394, critical = 0.881. Kappa = 2.518 (c=21, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0006269. Comparing 3 points to limit. Assumes 1 future value.

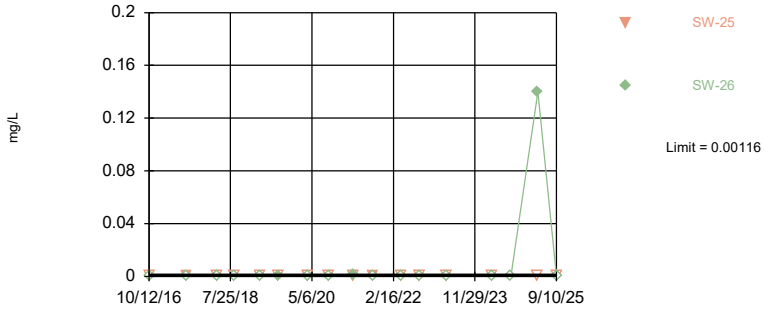
Constituent: Chloride Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 71.43% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 2 points to limit. Assumes 2 future values.

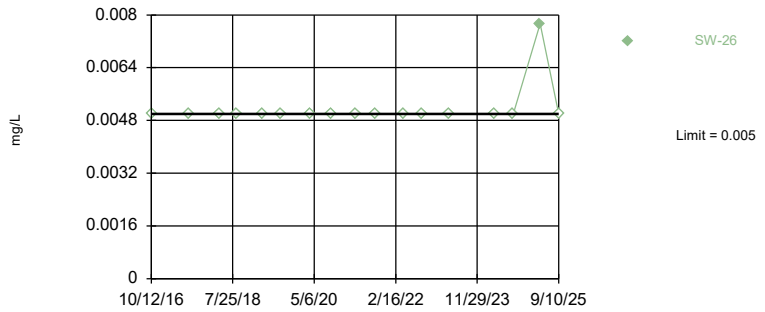
Constituent: Cobalt Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 13) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.0681. Individual comparison alpha = 0.008777 (1 of 2). Assumes 3 future values.

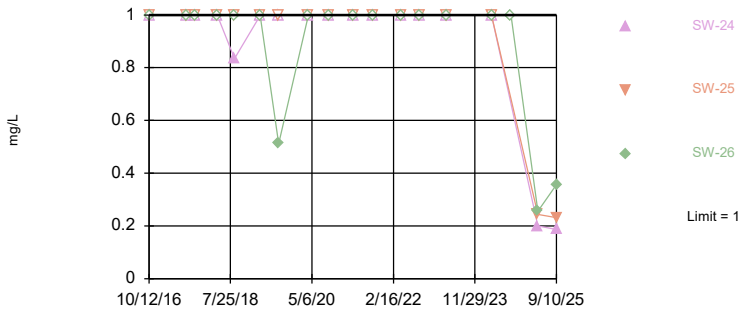
Constituent: Copper Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 15 background values. 86.67% NDs. Annual per-constituent alpha = 0.05415. Individual comparison alpha = 0.006934 (1 of 2). Comparing 3 points to limit. Assumes 1 future value.

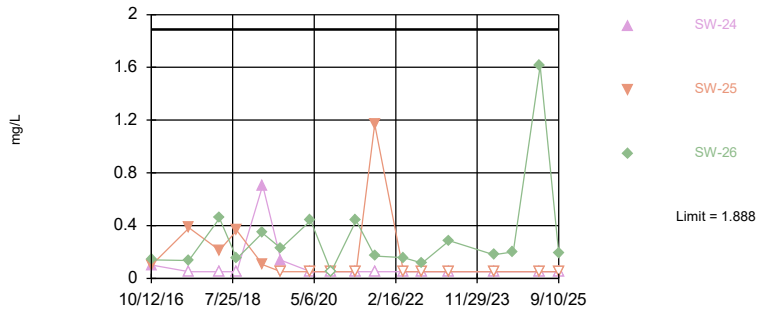
Constituent: Fluoride Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.6341, Std. Dev.=0.2876, n=14, 7.143% NDs. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9123, critical = 0.874. Kappa = 2.574 (c=21, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0006269. Comparing 3 points to limit. Assumes 1 future value.

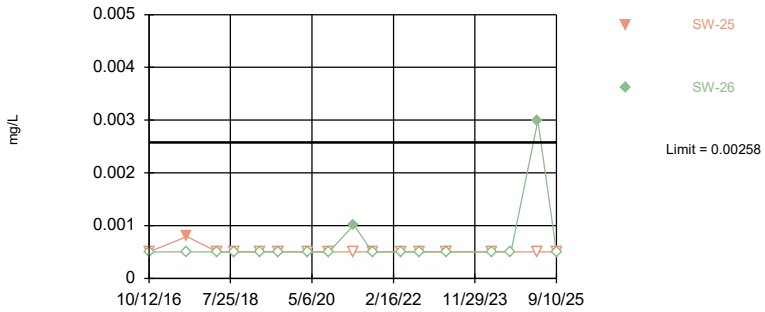
Constituent: Iron Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 71.43% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 2 points to limit. Assumes 2 future values.

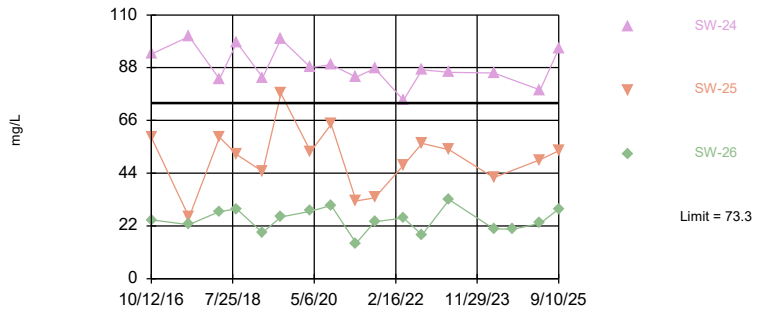
Constituent: Lead Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Exceeds Limit: SW-24

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 14 background values. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 3 points to limit. Assumes 1 future value.

Constituent: Magnesium Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

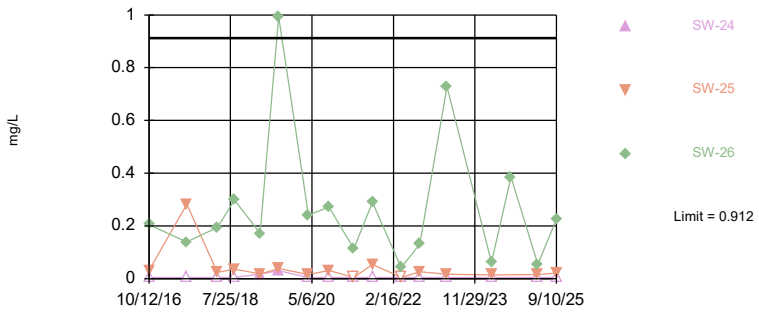
Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=0.4307, Std. Dev.=0.2037, n=14. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9125, critical = 0.874. Kappa = 2.574 (c=21, w=4, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0006269. Comparing 3 points to limit. Assumes 1 future value.

Constituent: Manganese Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

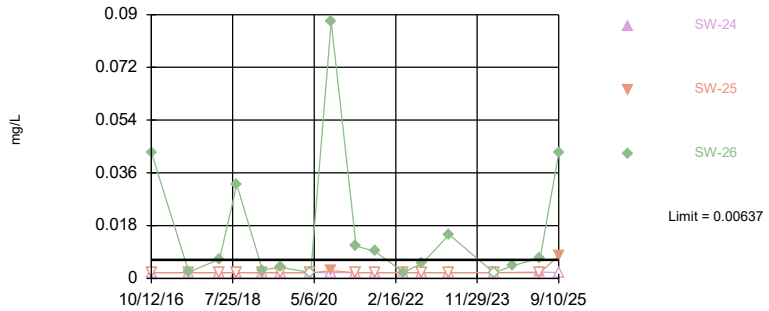
Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Exceeds Limit: SW-25, SW-26

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 92.86% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 3 points to limit. Assumes 1 future value.

Constituent: Molybdenum Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 14) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Assumes 4 future values.

Constituent: Nickel Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits

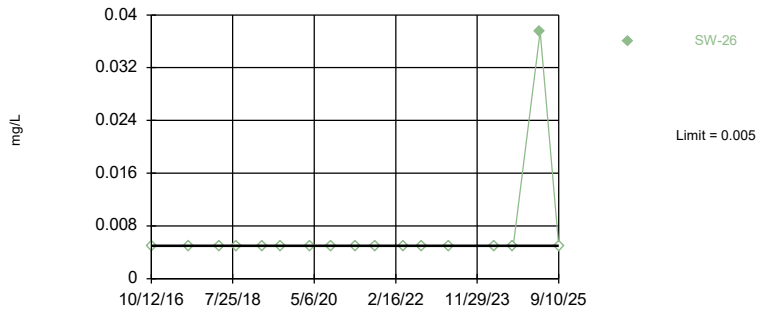
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 14) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Assumes 3 future values.

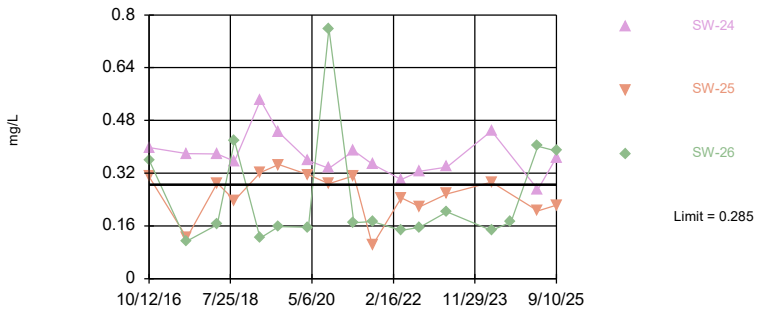
Constituent: Selenium Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Exceeds Limit: SW-24, SW-26

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 14 background values. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Comparing 3 points to limit. Assumes 1 future value.

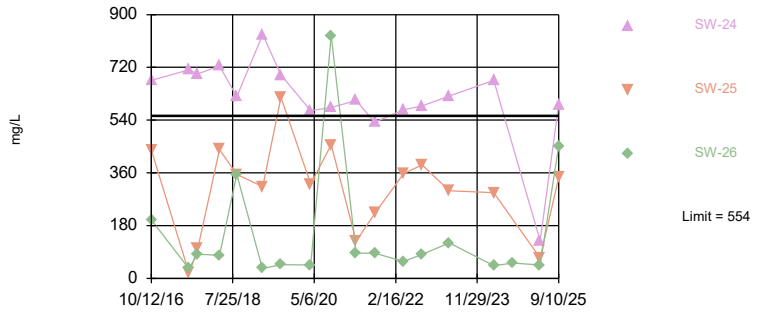
Constituent: Strontium Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Exceeds Limit: SW-24

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 15 background values. Annual per-constituent alpha = 0.05415. Individual comparison alpha = 0.006934 (1 of 2). Comparing 3 points to limit. Assumes 1 future value.

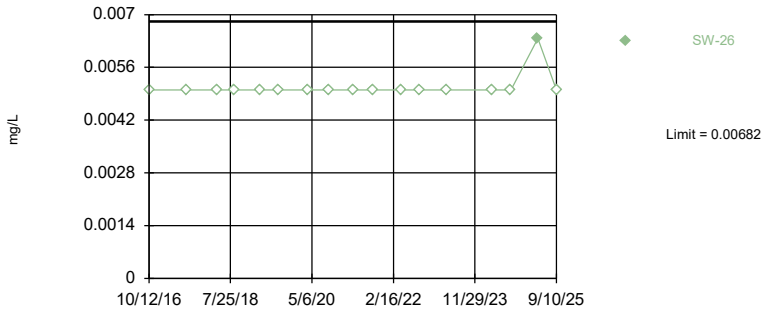
Constituent: Sulfate Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 78.57% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Assumes 3 future values.

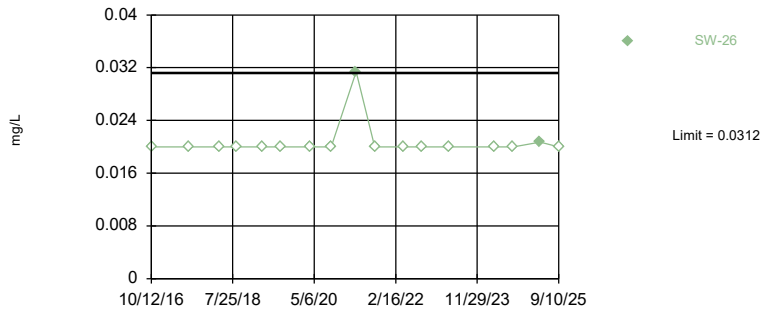
Constituent: Vanadium Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 92.86% NDs. Annual per-constituent alpha = 0.06112. Individual comparison alpha = 0.007852 (1 of 2). Assumes 3 future values.

Constituent: Zinc Analysis Run 12/10/2025 3:26 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Prediction Limit

Constituent: Aluminum (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-25	SW-26
10/12/2016	0.217	<0.05	<0.05
8/7/2017			<0.05
8/9/2017	<0.05	0.276	
4/11/2018	0.0713	<0.05	0.117
8/27/2018	1.09	<0.05	<0.05
3/18/2019			0.169
3/20/2019	0.153	<0.05	
8/13/2019	0.194	<0.05	0.0646
4/7/2020	0.0821	<0.05	0.134
9/18/2020	1.28	<0.05	<0.05
4/5/2021	0.191	<0.05	0.432
9/1/2021	0.982	0.858	0.0654
4/20/2022	<0.05	<0.05	<0.05
9/14/2022		<0.05	<0.05
4/19/2023	0.0782	<0.05	<0.05
4/9/2024			0.119
4/10/2024	0.172	<0.05	
9/12/2024			0.0588
4/14/2025	<0.05	<0.05	1.28
9/10/2025		<0.05	<0.05

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26
10/12/2016	<0.002	0.018
8/7/2017		0.0118
8/9/2017	<0.002	
4/11/2018	<0.002	0.00661
8/27/2018	<0.002	0.133
3/18/2019		<0.002
3/20/2019	<0.002	
8/13/2019	0.00342	0.0347
4/7/2020	<0.002	0.00368
9/18/2020	0.00217	0.187
4/5/2021	<0.002	0.0268
9/1/2021	0.00367	0.0262
4/20/2022	<0.002	<0.002
9/14/2022		0.0151
4/19/2023	<0.002	0.00664
4/9/2024		0.00217
4/10/2024	<0.002	
9/12/2024		0.0371
4/14/2025	<0.002	<0.002
9/10/2025		0.0489

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-24
10/12/2016	0.111	0.0357	0.0538	0.0261
8/7/2017		0.0535		
8/9/2017	0.0601		0.142	0.0268
4/11/2018	0.0806	0.0712	0.0456	0.0264
8/27/2018	0.108	0.0751	0.0608	0.0256
3/18/2019		0.0793		
3/20/2019	0.0996		0.056	0.0278
8/13/2019	0.168	0.048	0.0648	0.0272
4/7/2020	0.0967	0.078	0.0548	0.0254
9/18/2020	0.168	0.0772	0.0686	0.0257
4/5/2021	0.112	0.102	0.0594	0.0285
9/1/2021	0.181	0.0455	0.0941	0.0259
4/20/2022	0.1	0.0503	0.0407	0.0222
9/14/2022		0.0656	0.058	0.0288
4/19/2023	0.101	0.0536	0.051	0.0253
4/9/2024		0.0701		0.0262
4/10/2024	0.0964		0.0461	
9/12/2024		0.0808		
4/14/2025	0.0741	0.0737	0.0503	0.0213
9/10/2025		0.0865	0.0579	0.0244

Prediction Limit

Constituent: Beryllium (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)
10/12/2016	<0.001
8/9/2017	<0.001
4/11/2018	<0.001
8/27/2018	<0.001
3/20/2019	<0.001
8/13/2019	<0.001
4/7/2020	<0.001
9/18/2020	<0.001
4/5/2021	<0.001
9/1/2021	<0.001
4/20/2022	<0.001
4/19/2023	<0.001
4/10/2024	<0.001
4/14/2025	<0.001

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-24
10/12/2016	1.25	4.33	5.57	10.5
8/7/2017		0.631		
8/9/2017	5.95		<0.1	10.6
10/17/2017	6.67	1.43	1.51	11.7
4/11/2018	<0.1	1.54	4.15	9.21
8/27/2018	<0.1	12.4	4.61	11.7
3/18/2019		0.486		
3/20/2019	<0.1		2.9	9.36
8/13/2019	<0.1	1	8.03	10.4
4/7/2020	<0.1	0.745	3.8	8.58
9/18/2020	0.206	11.3	6.36	9.39
4/5/2021	<0.1	1.52	2.11	6.55
9/1/2021	<0.1	0.941	0.528	8.55
4/20/2022	<0.1	0.855	5	8.12
9/14/2022		0.892	5.86	9.05
4/19/2023	<0.1	1.54	4.2	7.97
4/9/2024		0.484		7.91
4/10/2024	<0.1		3.76	
9/12/2024		1.38		
4/14/2025	<0.1	0.14	3.57	7.82
9/10/2025		5.19	5.25	8.09

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-24
10/12/2016	75.5	89.3	201	257
8/7/2017		35.5		
8/9/2017	221		56.3	260
10/17/2017	204	50.6	74.8	230
4/11/2018	45.2	62.1	171	210
8/27/2018	33.3	66.1	169	244
3/18/2019		52.4		
3/20/2019	51.8		147	263
8/13/2019	47.4	43.6	223	240
4/7/2020	59.6	65.5	168	242
9/18/2020	55.1	123	203	238
4/5/2021	42.4	44.5	125	221
9/1/2021	58.1	48.3	80.5	229
4/20/2022	58.6	57.4	154	201
9/14/2022		59.4	182	232
4/19/2023	57.6	70	149	213
4/9/2024		56.1		231
4/10/2024	50.5		142	
9/12/2024		57.3		
4/14/2025	51.5	66.2	143	183
9/10/2025		69.3	159	227

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-24
10/12/2016	13.9	15.4	14.9	16.8
8/7/2017		13.6		
8/9/2017	20		15.7	19.2
10/17/2017	16.8	11	16.6	18.5
4/11/2018	16.5	16.9	16.5	16.6
8/27/2018	11.7	22.7	12.3	21.7
3/18/2019		11		
3/20/2019	12.9		12.4	13.3
8/13/2019	12.3	16.7	15	15.1
4/7/2020	14.5	15.8	17.1	17.1
9/18/2020	13.3	16.9	17.2	16.4
4/5/2021	14.9	12.6	12.6	16
9/1/2021	13.7	14	20.7	17.4
4/20/2022	16.3	16	20.1	16.9
9/14/2022		9.4	16.5	17
4/19/2023	18	20.2	17.7	16.1
4/9/2024		20.6		14.9
4/10/2024	21.3		19.3	
9/12/2024		18.5		
4/14/2025	19.8	22.7	17	14.7
9/10/2025		24.8	21	16.3

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-25	SW-26
10/12/2016	<0.0005	<0.0005	<0.0005
8/7/2017			<0.0005
8/9/2017	<0.0005	0.00064	
4/11/2018	<0.0005	<0.0005	<0.0005
8/27/2018	<0.0005	<0.0005	<0.0005
3/18/2019			<0.0005
3/20/2019	<0.0005	<0.0005	
8/13/2019	0.000833	<0.0005	0.000613
4/7/2020	<0.0005	<0.0005	<0.0005
9/18/2020	0.00116	<0.0005	<0.0005
4/5/2021	<0.0005	<0.0005	0.00134
9/1/2021	0.00105	0.000512	<0.0005
4/20/2022	0.000713	<0.0005	<0.0005
9/14/2022		<0.0005	<0.0005
4/19/2023	<0.0005	<0.0005	<0.0005
4/9/2024			<0.0005
4/10/2024	<0.0005	<0.0005	
9/12/2024			<0.0005
4/14/2025	<0.0005	<0.0005	0.14
9/10/2025		<0.0005	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Copper (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26
10/12/2016	<0.005	<0.005
8/7/2017		<0.005
8/9/2017	<0.005	
4/11/2018	<0.005	<0.005
8/27/2018	<0.005	<0.005
3/18/2019		<0.005
3/20/2019	<0.005	
8/13/2019	<0.005	<0.005
4/7/2020	<0.005	<0.005
9/18/2020	<0.005	<0.005
4/5/2021	<0.005	<0.005
9/1/2021	0.0358 (o)	<0.005
4/20/2022	<0.005	<0.005
9/14/2022		<0.005
4/19/2023	<0.005	<0.005
4/9/2024		<0.005
4/10/2024	<0.005	
9/12/2024		<0.005
4/14/2025	<0.005	0.00773
9/10/2025		<0.005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-24
10/12/2016	<1	<1	<1	<1
8/7/2017		<1		
8/9/2017	<1		<1	<1
10/17/2017	<1	<1	<1	<1
4/11/2018	<1	<1	<1	<1
8/27/2018	<1	<1	<1	0.834
3/18/2019		<1		
3/20/2019	<1		<1	<1
8/13/2019	<1	0.512	<1	<1
4/7/2020	<1	<1	<1	<1
9/18/2020	<1	<1	<1	<1
4/5/2021	0.6	<1	<1	<1
9/1/2021	<1	<1	<1	<1
4/20/2022	<1	<1	<1	<1
9/14/2022		<1	<1	<1
4/19/2023	<1	<1	<1	<1
4/9/2024		<1		<1
4/10/2024	<1		<1	
9/12/2024		<1		
4/14/2025	0.271	0.256	0.244	0.2
9/10/2025		0.357	0.231	0.187

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-24
10/12/2016	0.415	0.141	0.1	0.102
8/7/2017		0.135		
8/9/2017	<0.1		0.384	<0.1
4/11/2018	0.259	0.457	0.212	<0.1
8/27/2018	1.01	0.151	0.363	<0.1
3/18/2019		0.345		
3/20/2019	0.66		0.104	0.705
8/13/2019	0.408	0.227	<0.1	0.137
4/7/2020	0.363	0.439	<0.1	<0.1
9/18/2020	1.25	<0.1	<0.1	<0.1
4/5/2021	0.21	0.439	<0.1	<0.1
9/1/2021	1.34	0.169	1.17	<0.1
4/20/2022	0.123	0.157	<0.1	<0.1
9/14/2022		0.116	<0.1	<0.1
4/19/2023	0.24	0.286	<0.1	<0.1
4/9/2024		0.178		<0.1
4/10/2024	0.196		<0.1	
9/12/2024		0.2		
4/14/2025	0.181	1.61	<0.1	<0.1
9/10/2025		0.191	<0.1	<0.1

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-25	SW-26
10/12/2016	<0.0005	<0.0005	<0.0005
8/7/2017			<0.0005
8/9/2017	<0.0005	0.000796	
4/11/2018	<0.0005	<0.0005	<0.0005
8/27/2018	0.000716	<0.0005	<0.0005
3/18/2019			<0.0005
3/20/2019	<0.0005	<0.0005	
8/13/2019	0.000623	<0.0005	<0.0005
4/7/2020	<0.0005	<0.0005	<0.0005
9/18/2020	0.000829	<0.0005	<0.0005
4/5/2021	<0.0005	<0.0005	0.00101
9/1/2021	0.00258	<0.0005	<0.0005
4/20/2022	<0.0005	<0.0005	<0.0005
9/14/2022		<0.0005	<0.0005
4/19/2023	<0.0005	<0.0005	<0.0005
4/9/2024			<0.0005
4/10/2024	<0.0005	<0.0005	
9/12/2024			<0.0005
4/14/2025	<0.0005	<0.0005	0.00299
9/10/2025		<0.0005	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-24
10/12/2016	28.6	24.5	58.9	93.7
8/7/2017		22.6		
8/9/2017	73.3		25.6	101
4/11/2018	21.1	28	59	83.2
8/27/2018	13.6	29.1	51.8	98.4
3/18/2019		19.2		
3/20/2019	22.6		44.7	83.9
8/13/2019	20.9	25.8	77.3	99.9
4/7/2020	26.4	28.2	53	88.1
9/18/2020	22.9	30.5	64.5	89.2
4/5/2021	17.2	14.8	32.4	84
9/1/2021	25.8	23.8	33.8	87.6
4/20/2022	23.6	25.4	47.3	74.4
9/14/2022		18.3	56.4	87.1
4/19/2023	25.1	33	53.8	86.1
4/9/2024		20.8		85.8
4/10/2024	20.9		42.2	
9/12/2024		20.6		
4/14/2025	22.6	23.1	49.6	78.7
9/10/2025		29.1	53.3	95.8

Prediction Limit

Constituent: Manganese (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-24
10/12/2016	0.205	0.205	0.0315	<0.01
8/7/2017		0.139		
8/9/2017	0.0766		0.282	<0.01
4/11/2018	0.18	0.194	0.0244	<0.01
8/27/2018	0.0399	0.298	0.0361	<0.01
3/18/2019		0.172		
3/20/2019	0.196		0.0184	0.0179
8/13/2019	0.694	0.993	0.0387	0.0304
4/7/2020	0.217	0.241	0.0156	<0.01
9/18/2020	0.492	0.271	0.0311	<0.01
4/5/2021	0.0882	0.114	<0.01	<0.01
9/1/2021	0.539	0.29	0.054	<0.01
4/20/2022	0.125	0.0422	<0.01	<0.01
9/14/2022		0.131	0.026	<0.01
4/19/2023	0.204	0.728	0.0169	<0.01
4/9/2024		0.0612		<0.01
4/10/2024	0.0309		0.0148	
9/12/2024		0.385		
4/14/2025	0.0486	0.0545	0.0159	<0.01
9/10/2025		0.225	0.0219	<0.01

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Molybdenum (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-24
10/12/2016	<0.002	0.043	<0.002	<0.002
8/7/2017		0.00214		
8/9/2017	<0.002		<0.002	<0.002
4/11/2018	<0.002	0.00659	<0.002	<0.002
8/27/2018	<0.002	0.032	<0.002	<0.002
3/18/2019		0.00291		
3/20/2019	<0.002		<0.002	<0.002
8/13/2019	<0.002	0.00379	<0.002	<0.002
4/7/2020	<0.002	<0.002	<0.002	<0.002
9/18/2020	<0.002	0.0876	0.00256	<0.002
4/5/2021	<0.002	0.011	<0.002	<0.002
9/1/2021	0.00637	0.00925	<0.002	<0.002
4/20/2022	<0.002	0.00202	<0.002	<0.002
9/14/2022		0.00514	<0.002	<0.002
4/19/2023	<0.002	0.0149	<0.002	<0.002
4/9/2024		<0.002		<0.002
4/10/2024	<0.002		<0.002	
9/12/2024		0.00433		
4/14/2025	<0.002	0.00699	<0.002	0.00216
9/10/2025		0.0427	0.00772	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Nickel (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)
10/12/2016	<0.005
8/9/2017	<0.005
4/11/2018	<0.005
8/27/2018	<0.005
3/20/2019	<0.005
8/13/2019	<0.005
4/7/2020	<0.005
9/18/2020	<0.005
4/5/2021	<0.005
9/1/2021	<0.005
4/20/2022	<0.005
4/19/2023	<0.005
4/10/2024	<0.005
4/14/2025	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26
10/12/2016	<0.005	<0.005
8/7/2017		<0.005
8/9/2017	<0.005	
4/11/2018	<0.005	<0.005
8/27/2018	<0.005	<0.005
3/18/2019		<0.005
3/20/2019	<0.005	
8/13/2019	<0.005	<0.005
4/7/2020	<0.005	<0.005
9/18/2020	<0.005	<0.005
4/5/2021	<0.005	<0.005
9/1/2021	<0.005	<0.005
4/20/2022	<0.005	<0.005
9/14/2022		<0.005
4/19/2023	<0.005	<0.005
4/9/2024		<0.005
4/10/2024	<0.005	
9/12/2024		<0.005
4/14/2025	<0.005	0.0375
9/10/2025		<0.005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Strontium (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-24
10/12/2016	0.148	0.36	0.309	0.398
8/7/2017		0.113		
8/9/2017	0.285		0.124	0.379
4/11/2018	0.0998	0.164	0.29	0.378
8/27/2018	0.0842	0.418	0.238	0.356
3/18/2019		0.123		
3/20/2019	0.12		0.322	0.541
8/13/2019	0.129	0.158	0.346	0.444
4/7/2020	0.128	0.156	0.315	0.358
9/18/2020	0.125	0.759	0.288	0.335
4/5/2021	0.12	0.17	0.312	0.388
9/1/2021	0.147	0.174	0.101	0.347
4/20/2022	0.125	0.146	0.245	0.301
9/14/2022		0.156	0.218	0.326
4/19/2023	0.111	0.203	0.257	0.339
4/9/2024		0.146		0.448
4/10/2024	0.115		0.293	
9/12/2024		0.172		
4/14/2025	0.103	0.402	0.206	0.271
9/10/2025		0.387	0.223	0.368

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26	SW-25	SW-24
10/12/2016	73	200	438	676
8/7/2017		33.8		
8/9/2017	554		16.9	712
10/17/2017	213	82.5	101	698
4/11/2018	20.1	78.8	440	725
8/27/2018	13.2	355	355	620
3/18/2019		33.7		
3/20/2019	20.4		313	832
8/13/2019	10.1	46.3	618	694
4/7/2020	16.3	45.9	322	572
9/18/2020	21	828	456	583
4/5/2021	13.9	86.4	127	607
9/1/2021	14.3	85.9	222	533
4/20/2022	15.7	57.3	357	575
9/14/2022		81.4	387	588
4/19/2023	15.7	121	299	622
4/9/2024		43.8		676
4/10/2024	15.1		292	
9/12/2024		52.2		
4/14/2025	15.7	45.5	69.3	129
9/10/2025		452	344	594

Prediction Limit

Constituent: Vanadium (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26
10/12/2016	<0.005	<0.005
8/7/2017		<0.005
8/9/2017	<0.005	
4/11/2018	<0.005	<0.005
8/27/2018	0.00549	<0.005
3/18/2019		<0.005
3/20/2019	<0.005	
8/13/2019	<0.005	<0.005
4/7/2020	<0.005	<0.005
9/18/2020	0.00516	<0.005
4/5/2021	<0.005	<0.005
9/1/2021	0.00682	<0.005
4/20/2022	<0.005	<0.005
9/14/2022		<0.005
4/19/2023	<0.005	<0.005
4/9/2024		<0.005
4/10/2024	<0.005	
9/12/2024		<0.005
4/14/2025	<0.005	0.00637
9/10/2025		<0.005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Zinc (mg/L) Analysis Run 12/10/2025 3:28 PM View: State Surface Water Prediction Limits

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

	SW-22 (bg)	SW-26
10/12/2016	<0.02	<0.02
8/7/2017		<0.02
8/9/2017	<0.02	
4/11/2018	<0.02	<0.02
8/27/2018	<0.02	<0.02
3/18/2019		<0.02
3/20/2019	<0.02	
8/13/2019	<0.02	<0.02
4/7/2020	<0.02	<0.02
9/18/2020	<0.02	<0.02
4/5/2021	<0.02	0.0314
9/1/2021	0.0312	<0.02
4/20/2022	<0.02	<0.02
9/14/2022		<0.02
4/19/2023	<0.02	<0.02
4/9/2024		<0.02
4/10/2024	<0.02	
9/12/2024		<0.02
4/14/2025	<0.02	0.0207
9/10/2025		<0.02

ND substitution: RL or RL/2 if <15% NDs.

FIGURE J.

Trend Tests - Surface Water Prediction Limit Exceedances - Significant Results

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/10/2025, 3:41 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**SW-24**	**-0.3444**	**-85**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	**SW-24**	**-4.324**	**-64**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Trend Tests - Surface Water Prediction Limit Exceedances - All Results

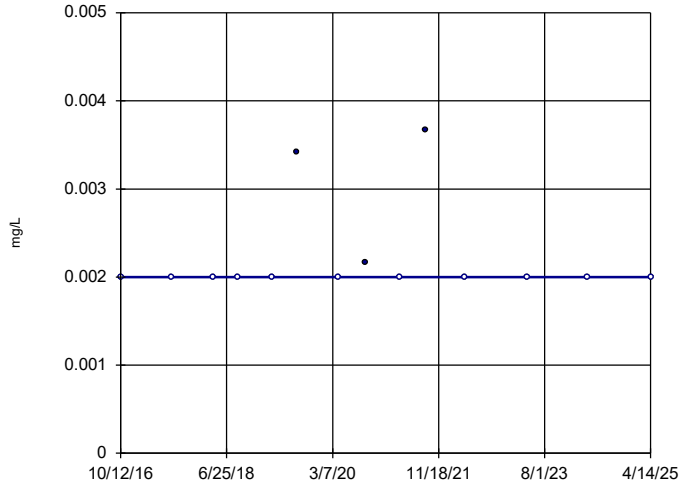
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water Printed 12/10/2025, 3:41 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Arsenic (mg/L)	SW-22 (bg)	0	4	48	No	14	78.57	n/a	n/a	0.01	NP
Arsenic (mg/L)	SW-26	-0.000433	-9	-63	No	17	17.65	n/a	n/a	0.01	NP
Boron (mg/L)	SW-22 (bg)	0	-34	-53	No	15	73.33	n/a	n/a	0.01	NP
Boron (mg/L)	**SW-24**	**-0.3444**	**-85**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	SW-22 (bg)	-1.292	-19	-53	No	15	0	n/a	n/a	0.01	NP
Calcium (mg/L)	**SW-24**	**-4.324**	**-64**	**-63**	**Yes**	**17**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	SW-22 (bg)	0.6288	27	53	No	15	0	n/a	n/a	0.01	NP
Chloride (mg/L)	SW-26	0.8579	56	68	No	18	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	SW-22 (bg)	0	8	48	No	14	71.43	n/a	n/a	0.01	NP
Cobalt (mg/L)	SW-26	0	11	63	No	17	82.35	n/a	n/a	0.01	NP
Copper (mg/L)	SW-22 (bg)	0	0	43	No	13	100	n/a	n/a	0.01	NP
Copper (mg/L)	SW-26	0	14	63	No	17	94.12	n/a	n/a	0.01	NP
Lead (mg/L)	SW-22 (bg)	0	0	48	No	14	71.43	n/a	n/a	0.01	NP
Lead (mg/L)	SW-26	0	15	63	No	17	88.24	n/a	n/a	0.01	NP
Magnesium (mg/L)	SW-22 (bg)	-0.3358	-11	-48	No	14	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	SW-24	-1.055	-34	-58	No	16	0	n/a	n/a	0.01	NP
Molybdenum (mg/L)	SW-22 (bg)	0	5	48	No	14	92.86	n/a	n/a	0.01	NP
Molybdenum (mg/L)	SW-25	0	15	58	No	16	87.5	n/a	n/a	0.01	NP
Molybdenum (mg/L)	SW-26	-0.00001275	-1	-63	No	17	11.76	n/a	n/a	0.01	NP
Selenium (mg/L)	SW-22 (bg)	0	0	48	No	14	100	n/a	n/a	0.01	NP
Selenium (mg/L)	SW-26	0	14	63	No	17	94.12	n/a	n/a	0.01	NP
Strontium (mg/L)	SW-22 (bg)	-0.003632	-25	-48	No	14	0	n/a	n/a	0.01	NP
Strontium (mg/L)	SW-24	-0.01011	-42	-58	No	16	0	n/a	n/a	0.01	NP
Strontium (mg/L)	SW-26	0.005575	22	63	No	17	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	SW-22 (bg)	-1.657	-36	-53	No	15	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	SW-24	-18.11	-51	-63	No	17	0	n/a	n/a	0.01	NP

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Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0 units per year.

Mann-Kendall statistic = 4
critical = 48

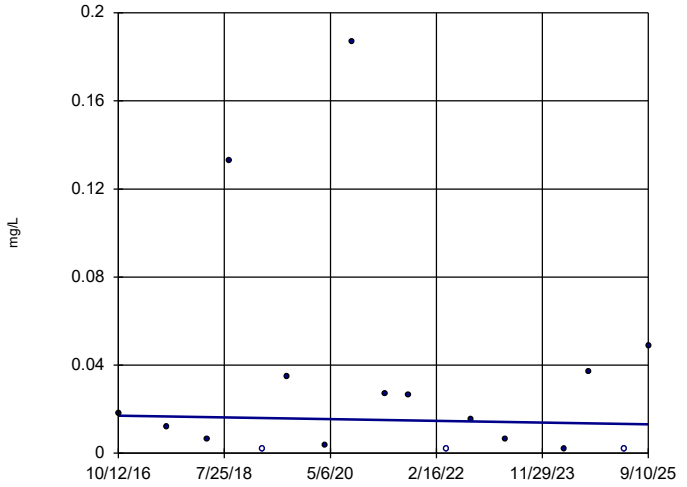
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-26



n = 17

Slope = -0.000433 units per year.

Mann-Kendall statistic = -9
critical = -63

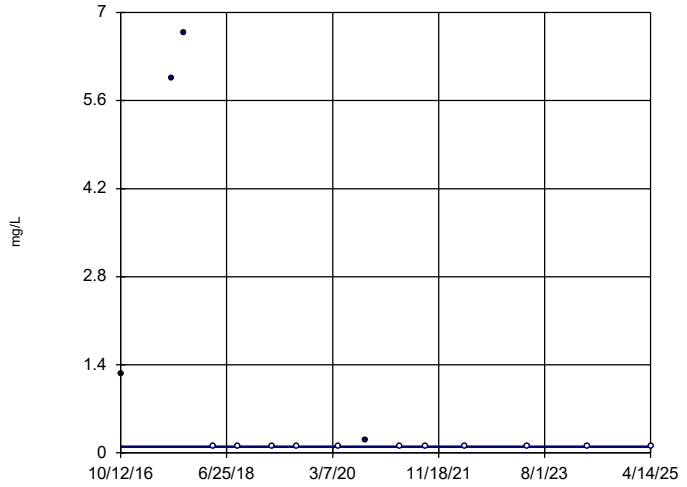
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 15

Slope = 0 units per year.

Mann-Kendall statistic = -34
critical = -53

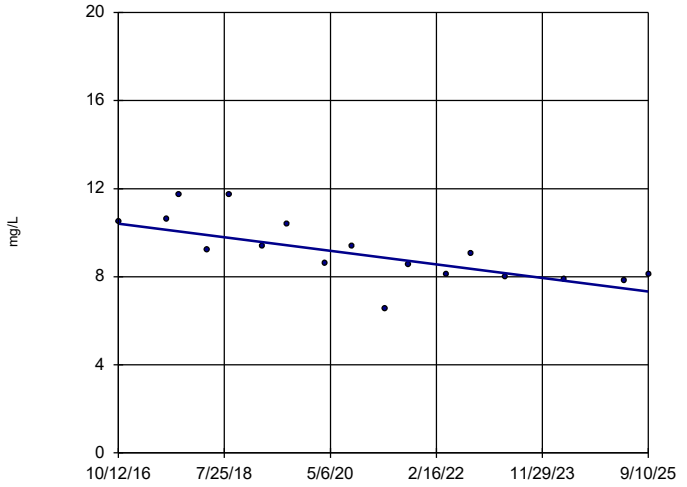
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

SW-24



n = 17

Slope = -0.3444 units per year.

Mann-Kendall statistic = -85
critical = -63

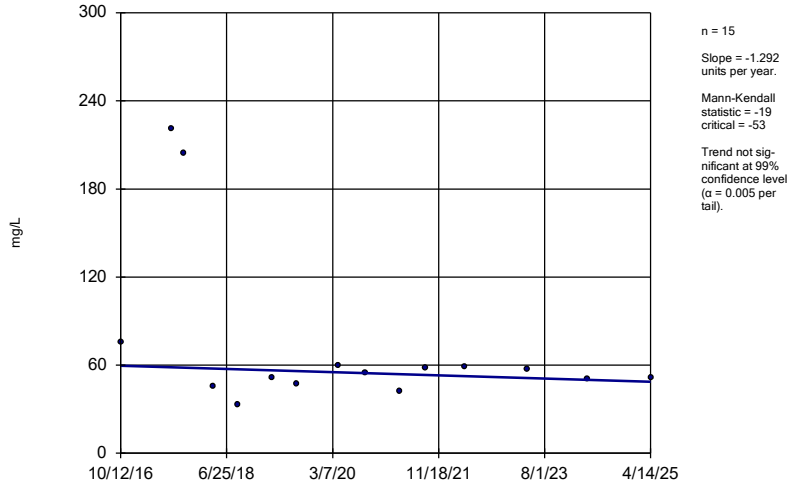
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

SW-22 (bg)



n = 15

Slope = -1.292 units per year.

Mann-Kendall statistic = -19 critical = -53

Trend not significant at 99% confidence level (α = 0.005 per tail).

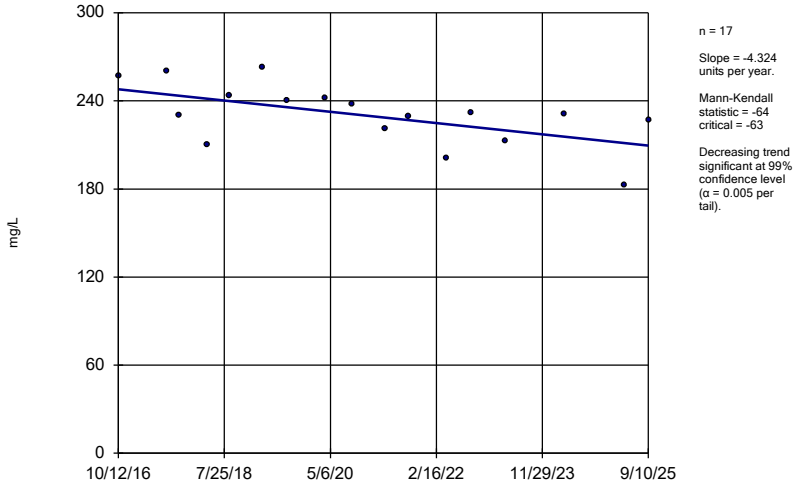
Constituent: Calcium Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

SW-24



n = 17

Slope = -4.324 units per year.

Mann-Kendall statistic = -64 critical = -63

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

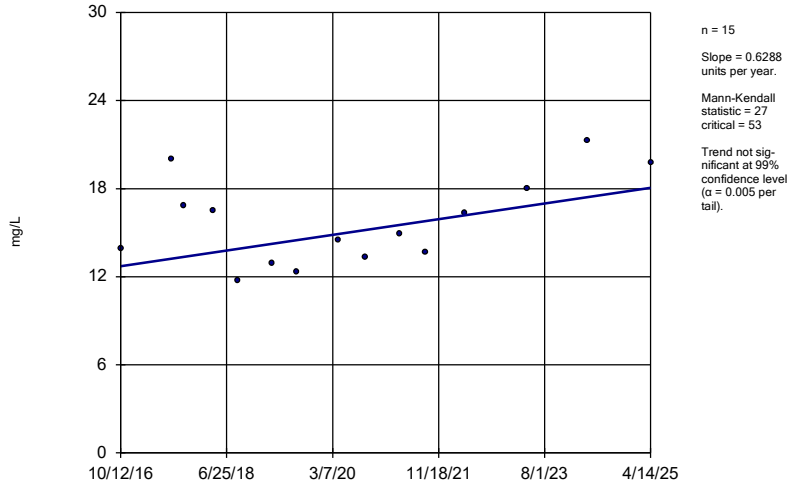
Constituent: Calcium Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

SW-22 (bg)



n = 15

Slope = 0.6288 units per year.

Mann-Kendall statistic = 27 critical = 53

Trend not significant at 99% confidence level (α = 0.005 per tail).

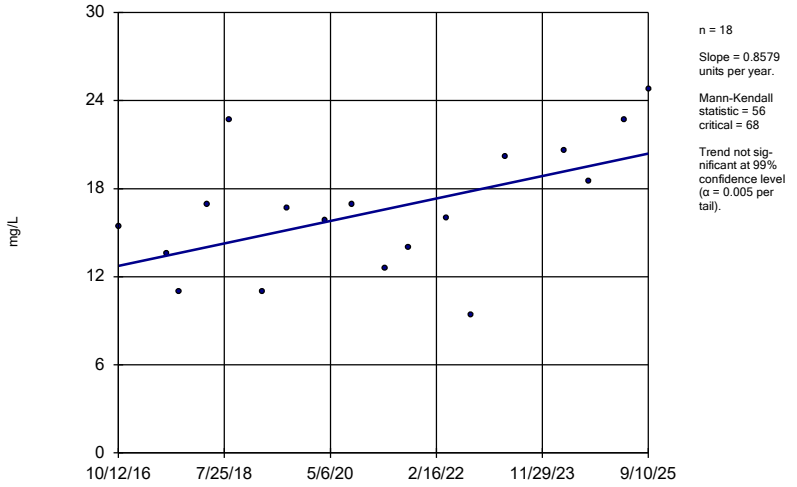
Constituent: Chloride Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

SW-26



n = 18

Slope = 0.8579 units per year.

Mann-Kendall statistic = 56 critical = 68

Trend not significant at 99% confidence level (α = 0.005 per tail).

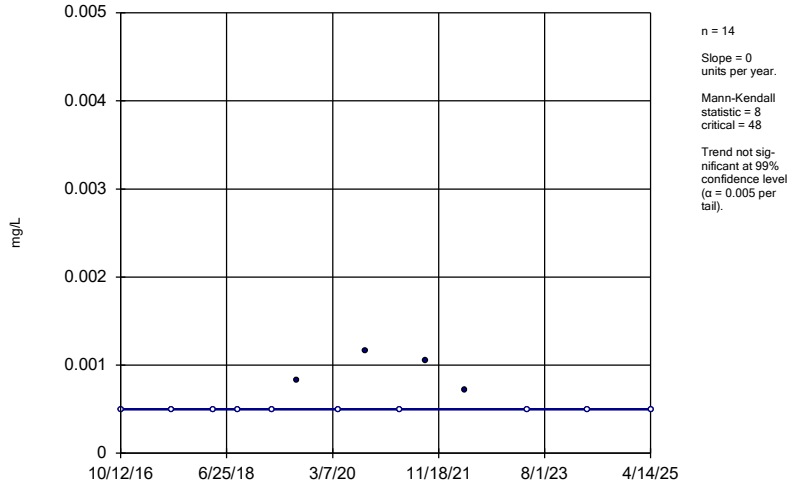
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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0 units per year.

Mann-Kendall statistic = 8
critical = 48

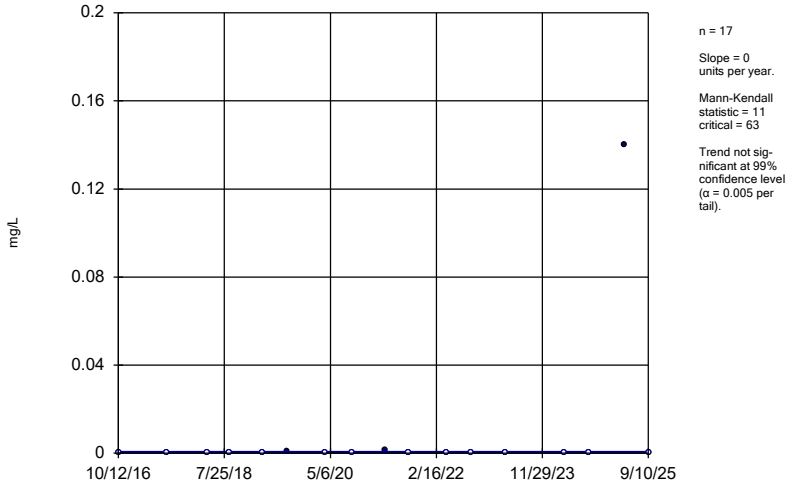
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-26



n = 17

Slope = 0 units per year.

Mann-Kendall statistic = 11
critical = 63

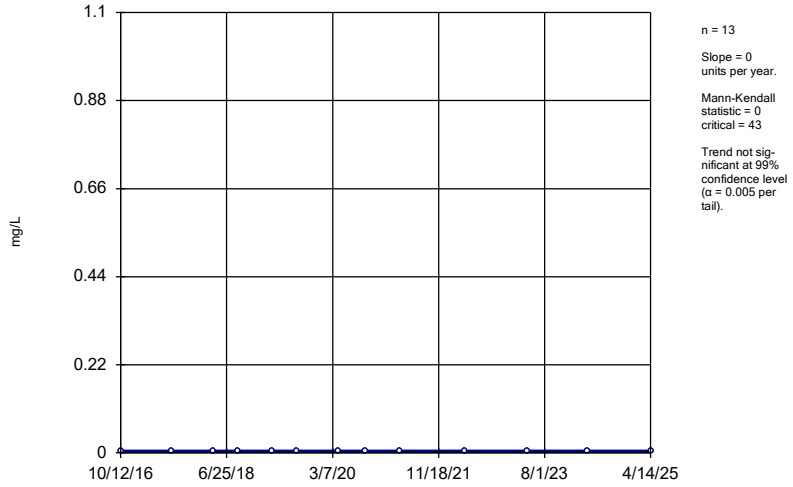
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 13

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 43

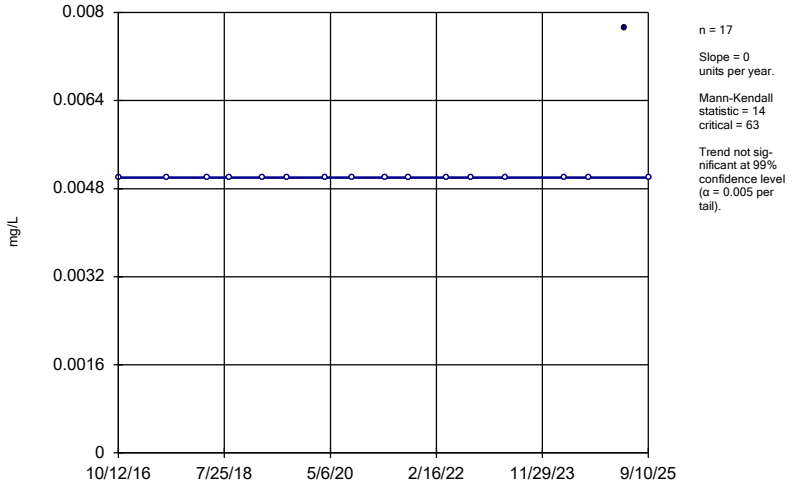
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Copper Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-26



n = 17

Slope = 0 units per year.

Mann-Kendall statistic = 14
critical = 63

Trend not significant at 99% confidence level (α = 0.005 per tail).

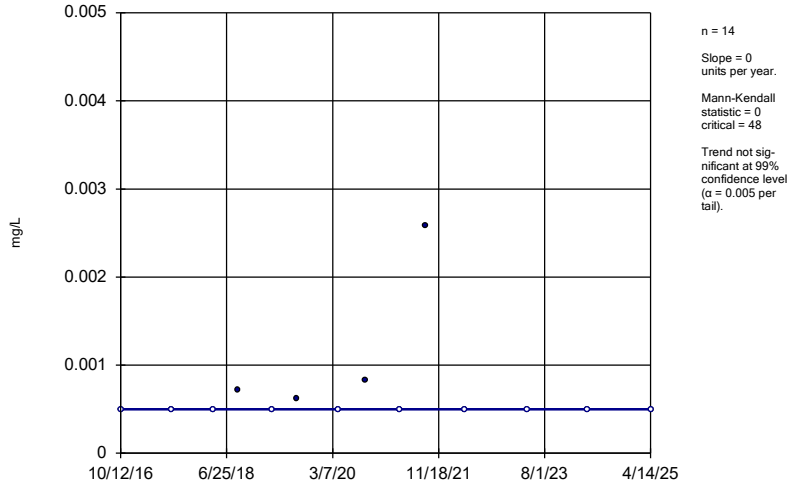
Constituent: Copper Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 48

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests

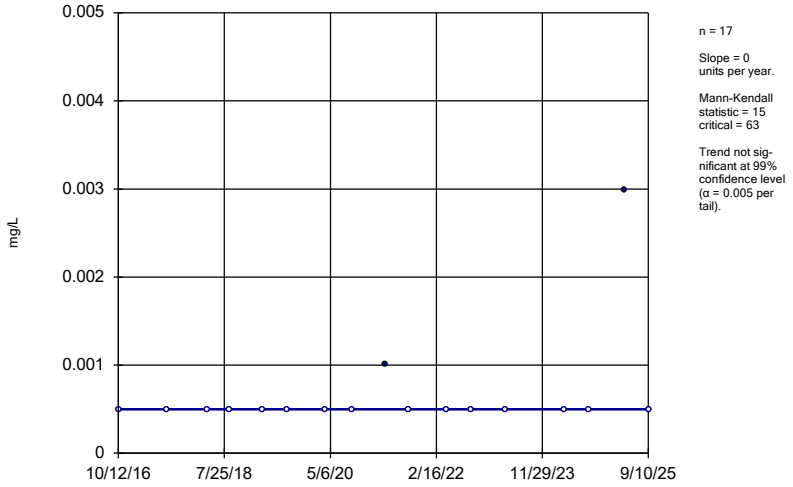
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-26



n = 17

Slope = 0 units per year.

Mann-Kendall statistic = 15 critical = 63

Trend not significant at 99% confidence level (α = 0.005 per tail).

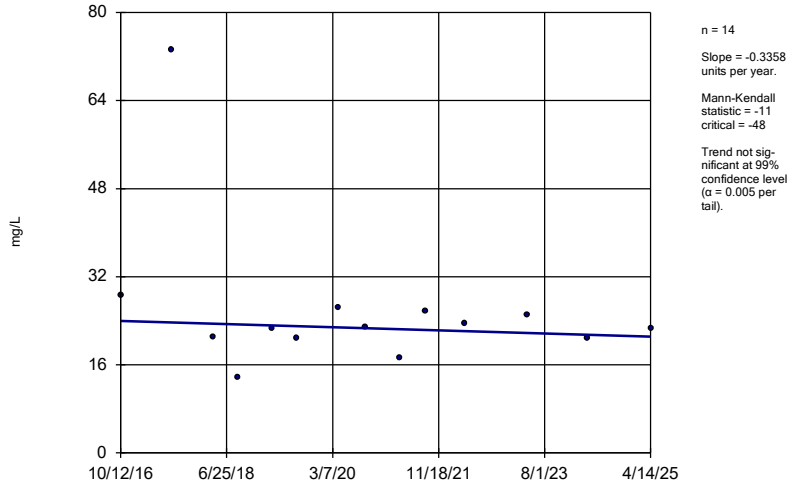
Constituent: Lead Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = -0.3358 units per year.

Mann-Kendall statistic = -11 critical = -48

Trend not significant at 99% confidence level (α = 0.005 per tail).

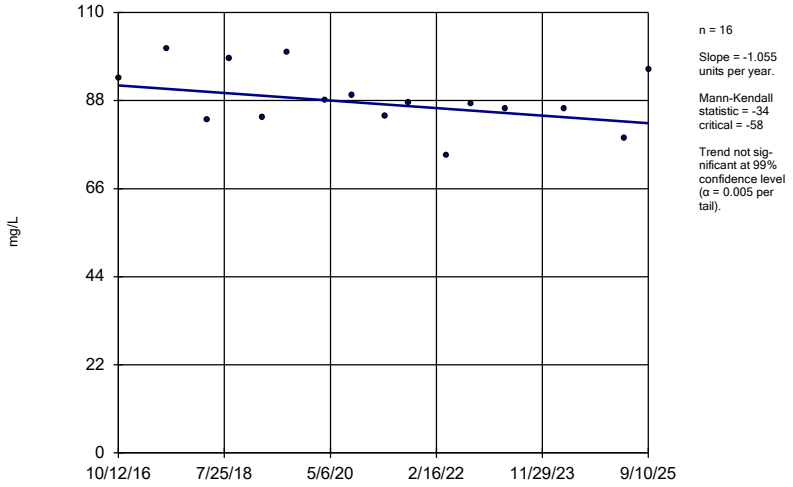
Constituent: Magnesium Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

SW-24



n = 16

Slope = -1.055 units per year.

Mann-Kendall statistic = -34 critical = -58

Trend not significant at 99% confidence level (α = 0.005 per tail).

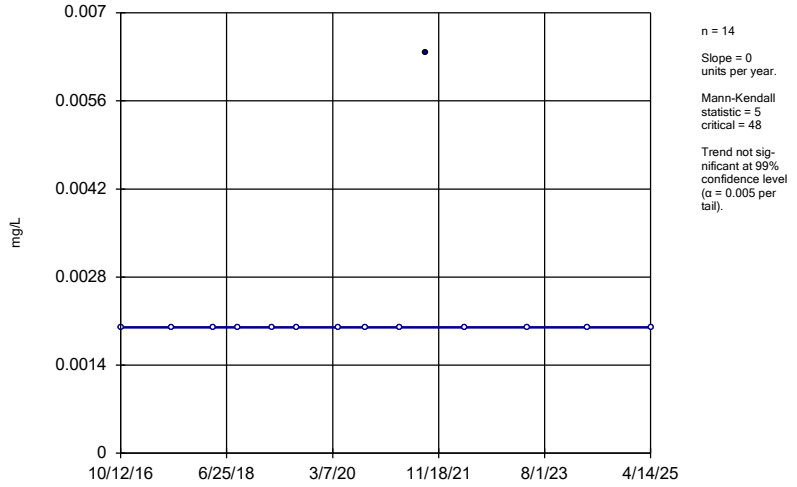
Constituent: Magnesium Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests

Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0
units per year.

Mann-Kendall
statistic = 5
critical = 48

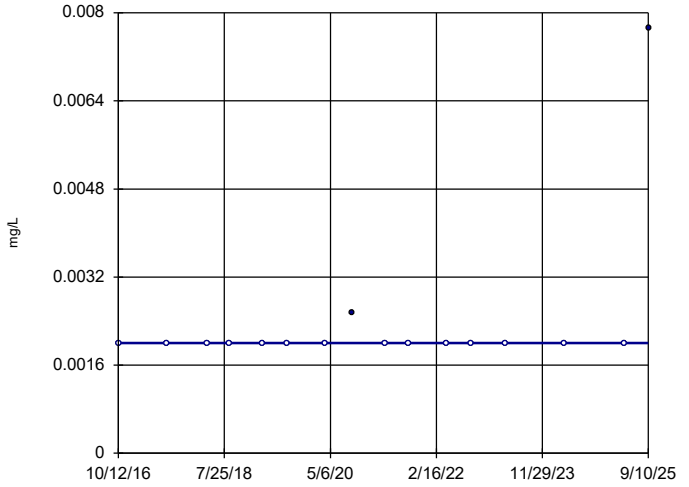
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Molybdenum Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-25



n = 16

Slope = 0
units per year.

Mann-Kendall
statistic = 15
critical = 58

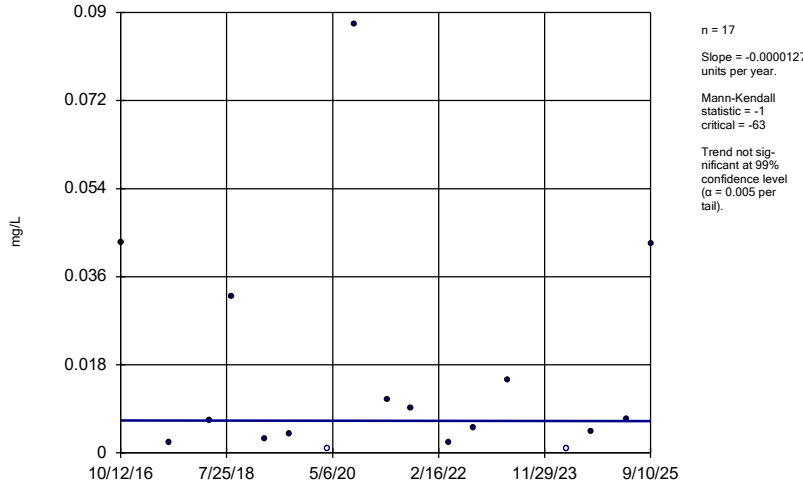
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Molybdenum Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-26



n = 17

Slope = -0.00001275
units per year.

Mann-Kendall
statistic = -1
critical = -63

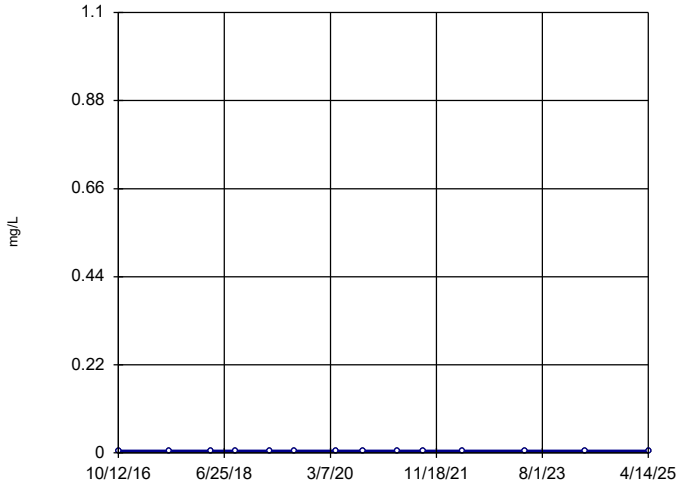
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Molybdenum Analysis Run 12/10/2025 3:38 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = 0
units per year.

Mann-Kendall
statistic = 0
critical = 48

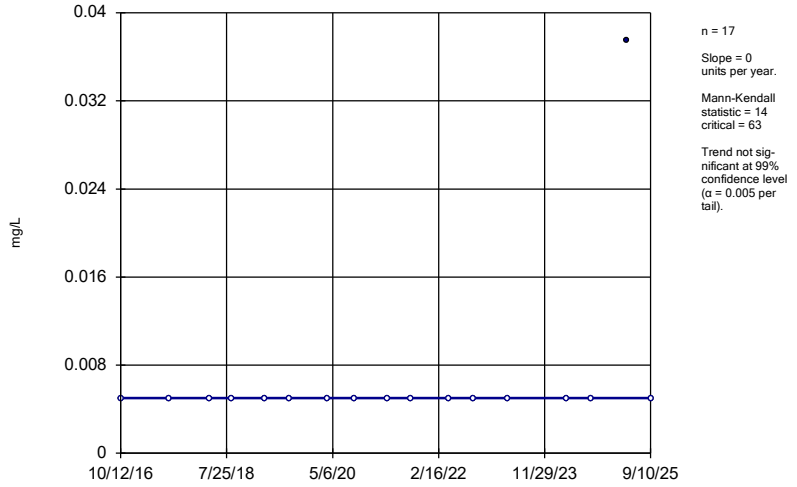
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Selenium Analysis Run 12/10/2025 3:39 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

SW-26



n = 17

Slope = 0 units per year.

Mann-Kendall statistic = 14 critical = 63

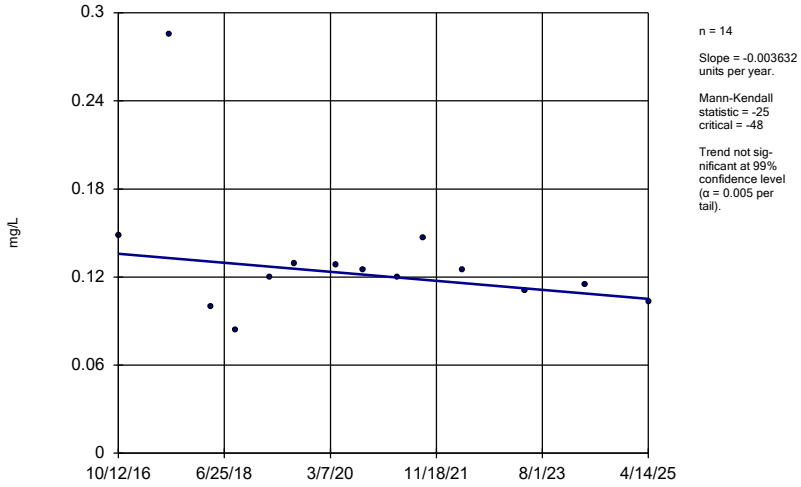
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Constituent: Selenium Analysis Run 12/10/2025 3:39 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

SW-22 (bg)



n = 14

Slope = -0.003632 units per year.

Mann-Kendall statistic = -25 critical = -48

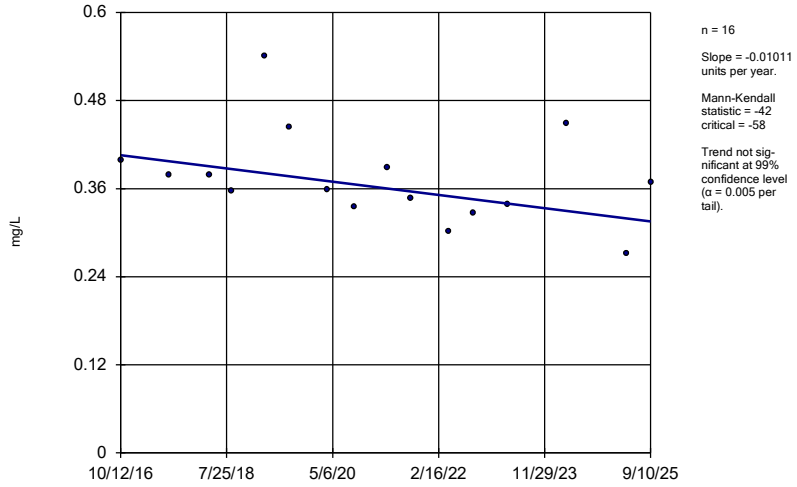
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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

SW-24



n = 16

Slope = -0.01011 units per year.

Mann-Kendall statistic = -42 critical = -58

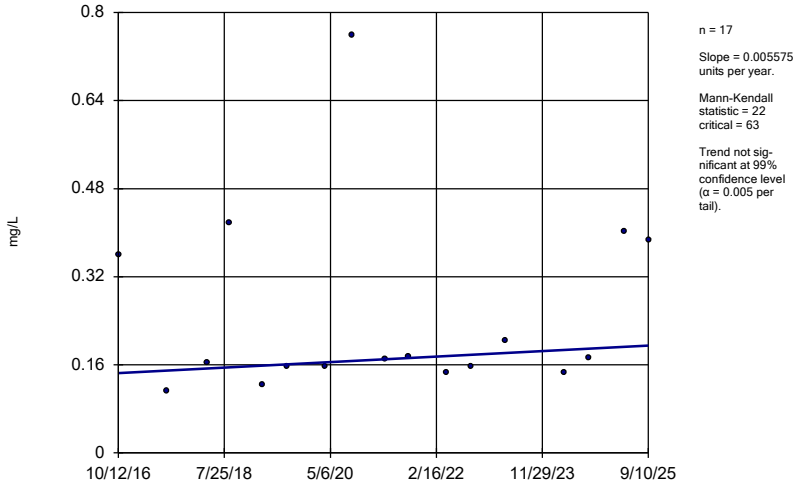
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Strontium Analysis Run 12/10/2025 3:39 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

SW-26



n = 17

Slope = 0.005575 units per year.

Mann-Kendall statistic = 22 critical = 63

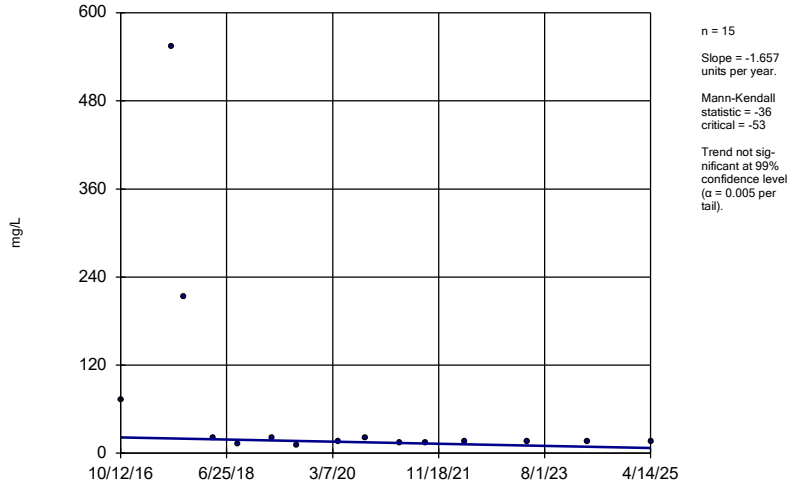
Trend not significant at 99% confidence level (α = 0.005 per tail).

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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

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Sen's Slope Estimator

SW-22 (bg)



n = 15

Slope = -1.657 units per year.

Mann-Kendall statistic = -36 critical = -53

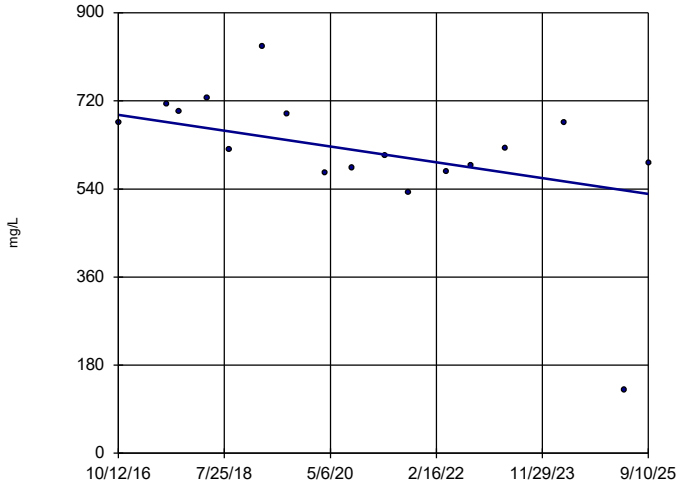
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 12/10/2025 3:39 PM View: State Surface Water Trend Tests
Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

Sanitas™ v.10.1.02 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

SW-24



n = 17

Slope = -18.11 units per year.

Mann-Kendall statistic = -51 critical = -63

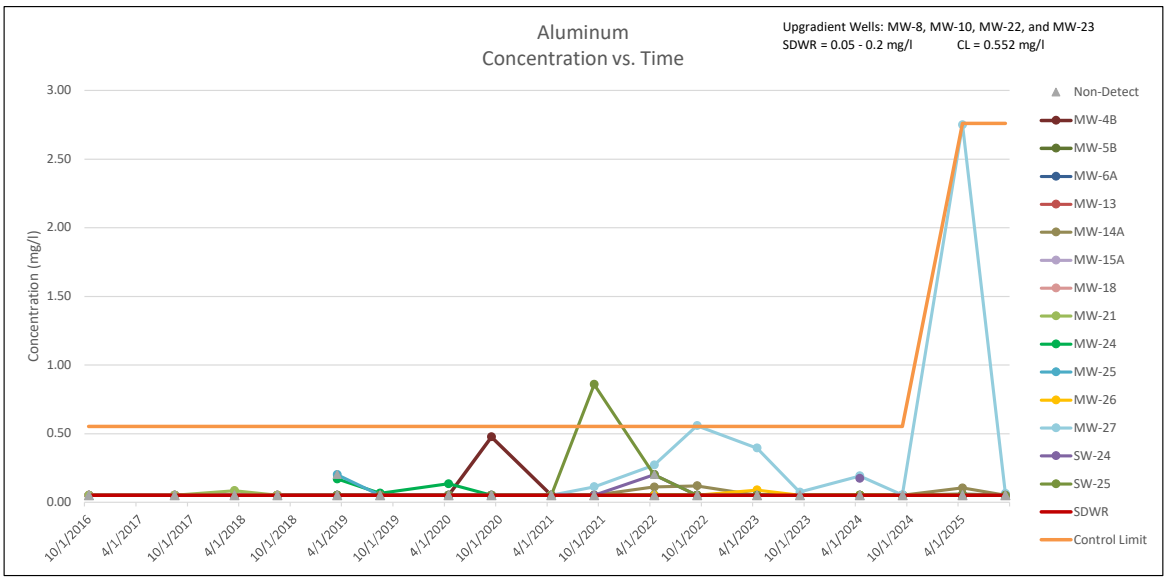
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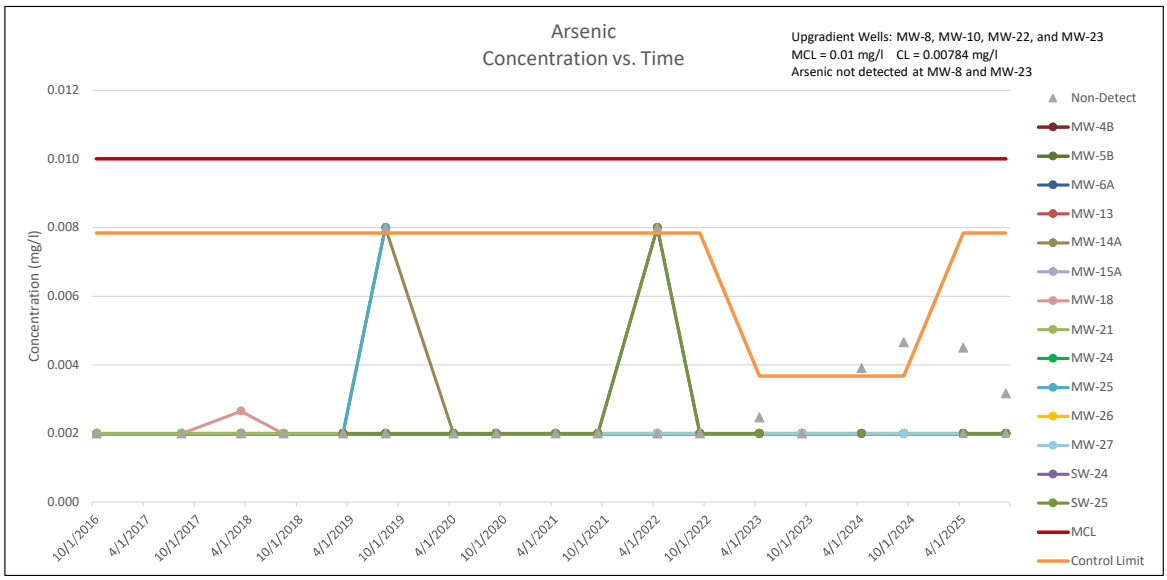
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Muscatine Power & Water Client: GHD Data: Muscatine Power & Water

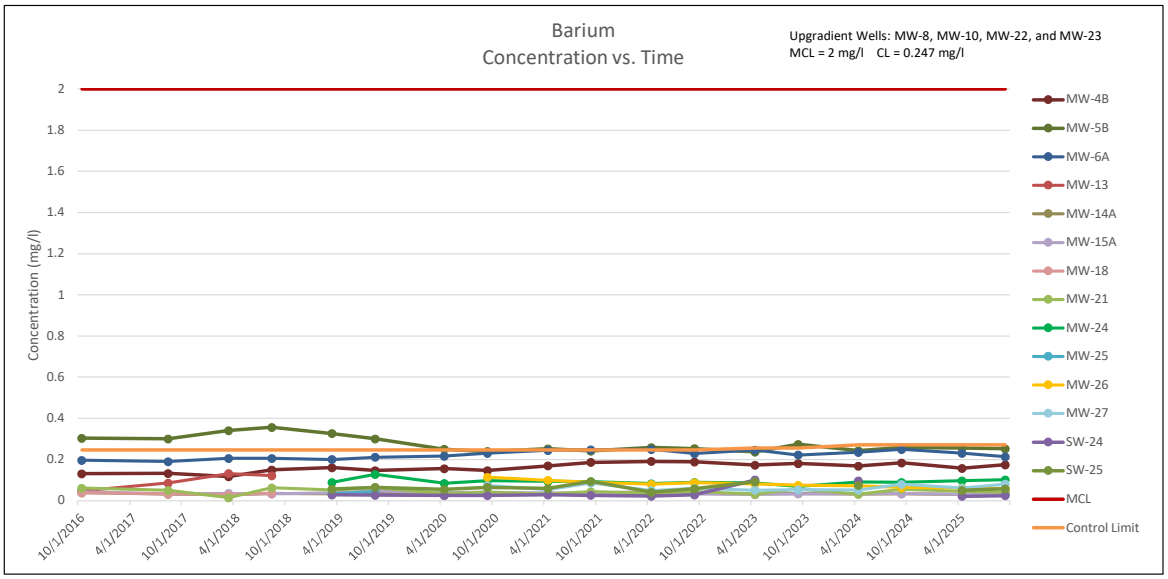
Appendix D

Time Series Graphs

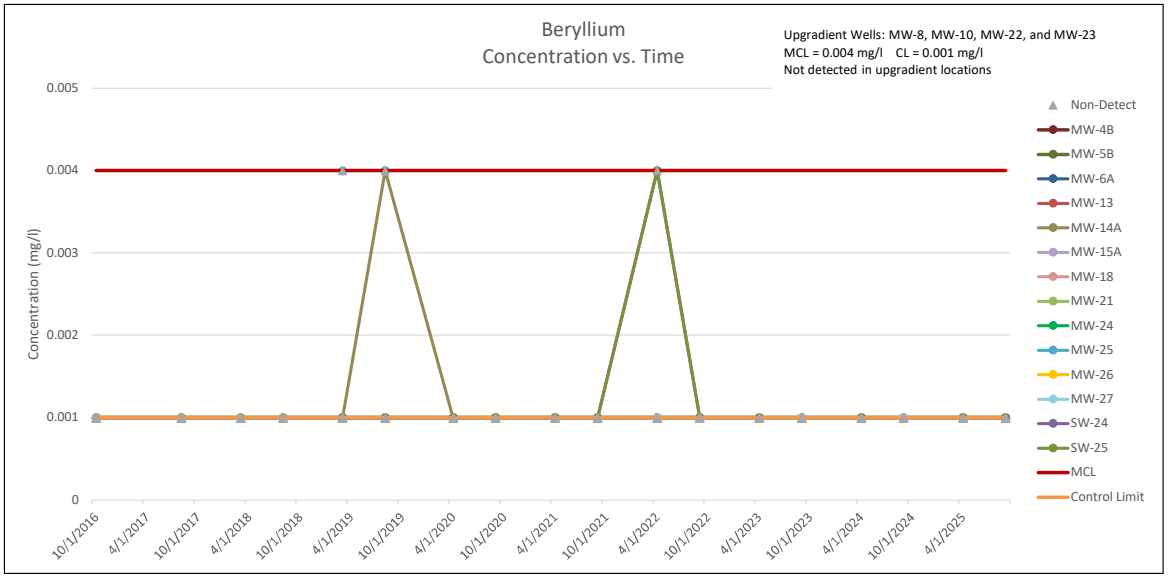
Water Quality Results
2016 - 2025

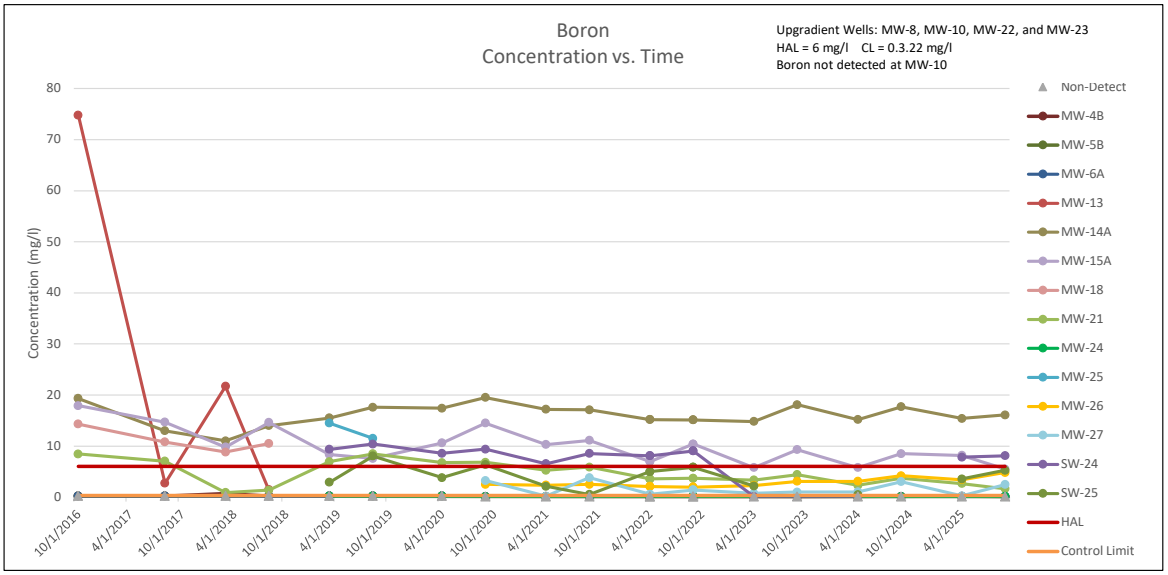


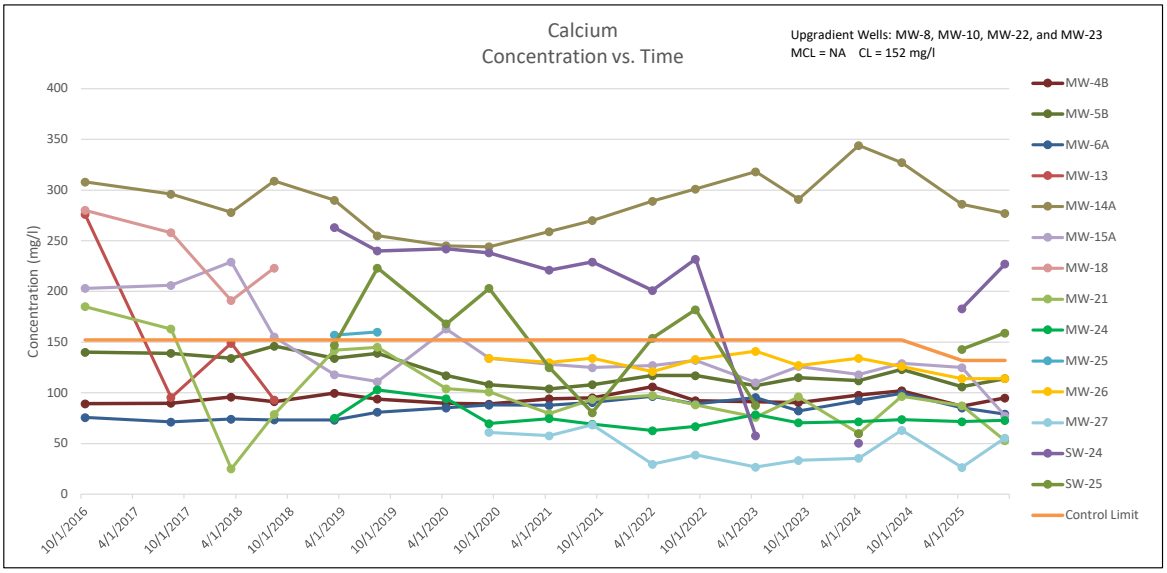




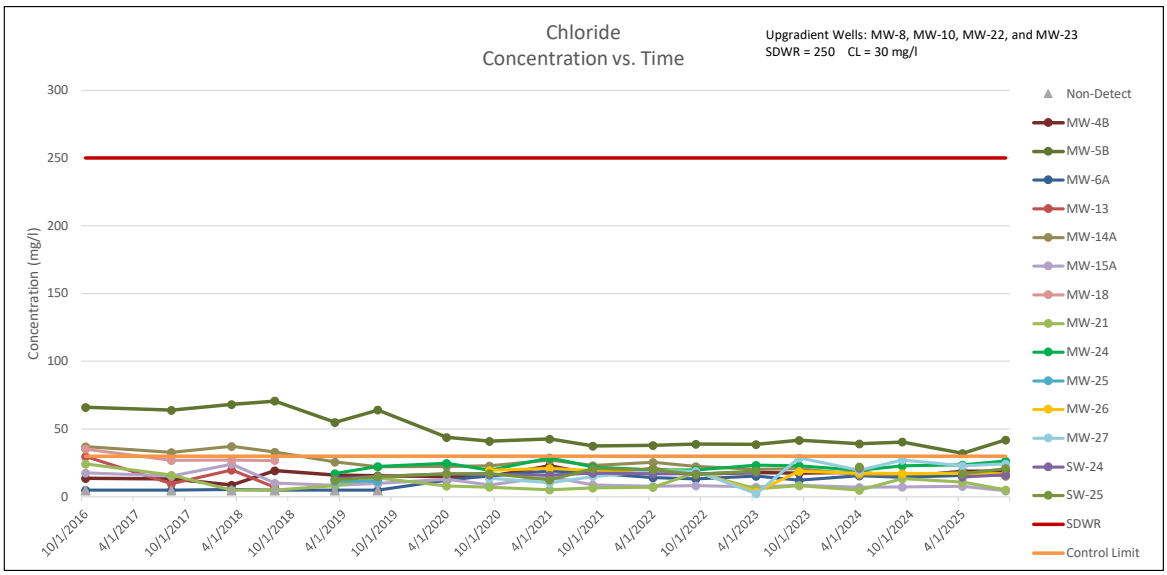
Water Quality Results
2016 - 2025

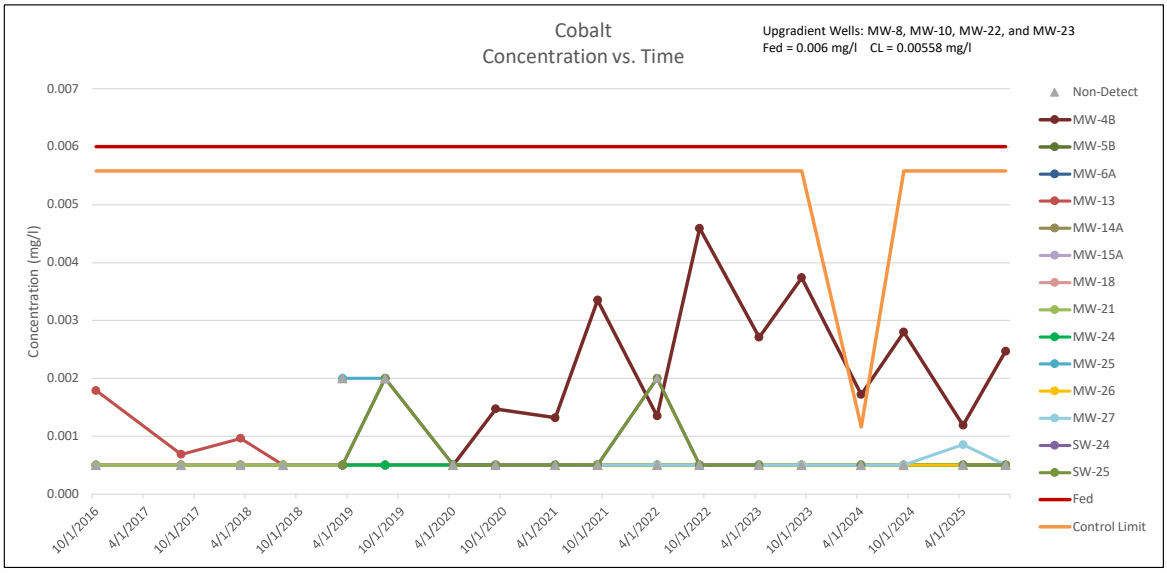


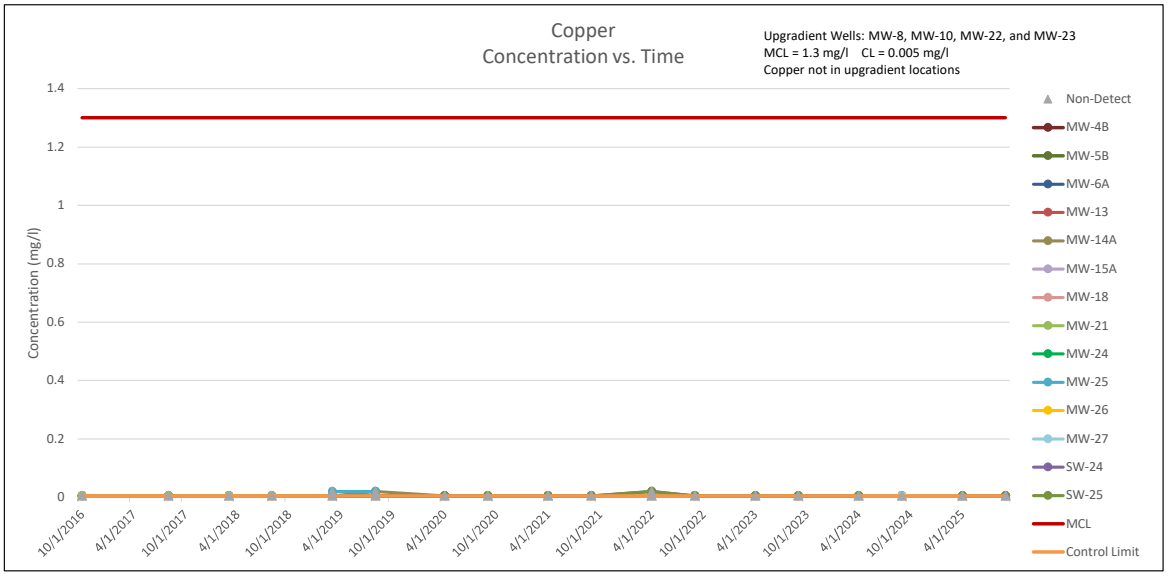




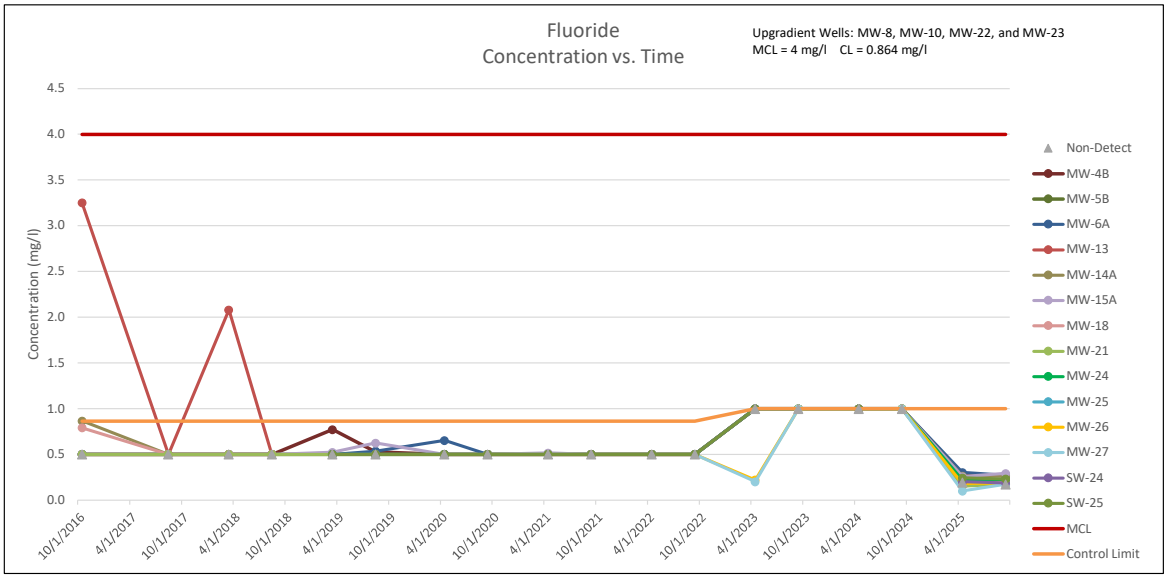
Water Quality Results
2016 - 2025

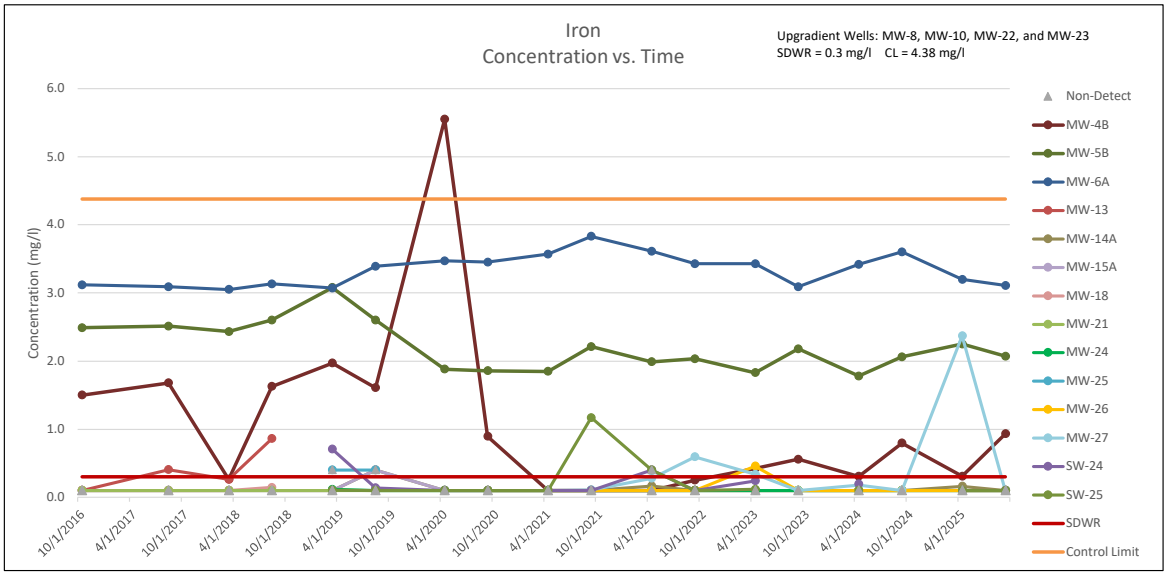


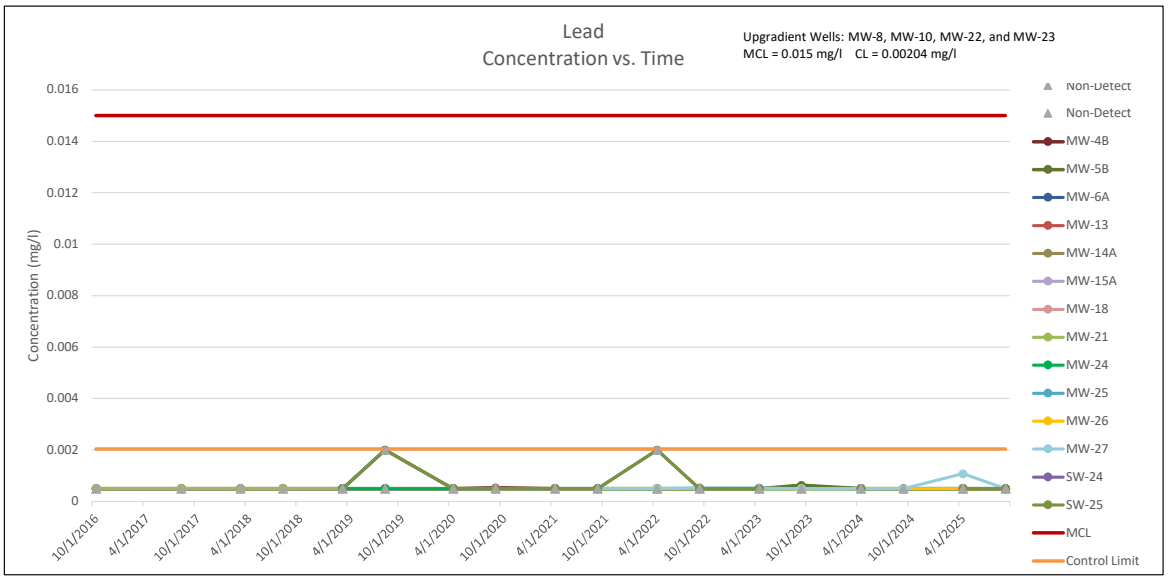




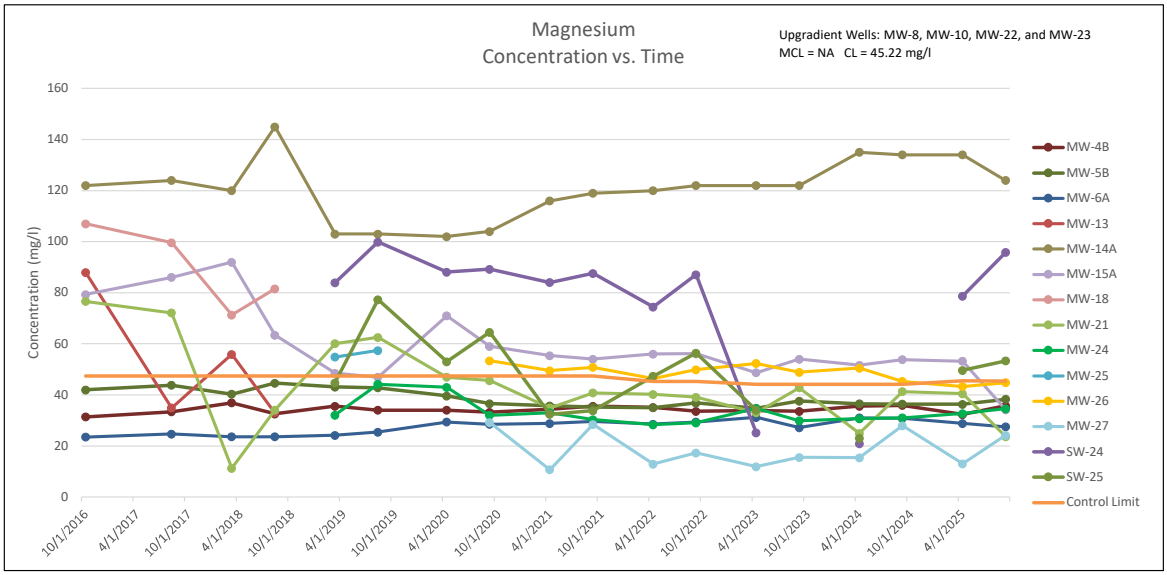
Water Quality Results
2016 - 2025

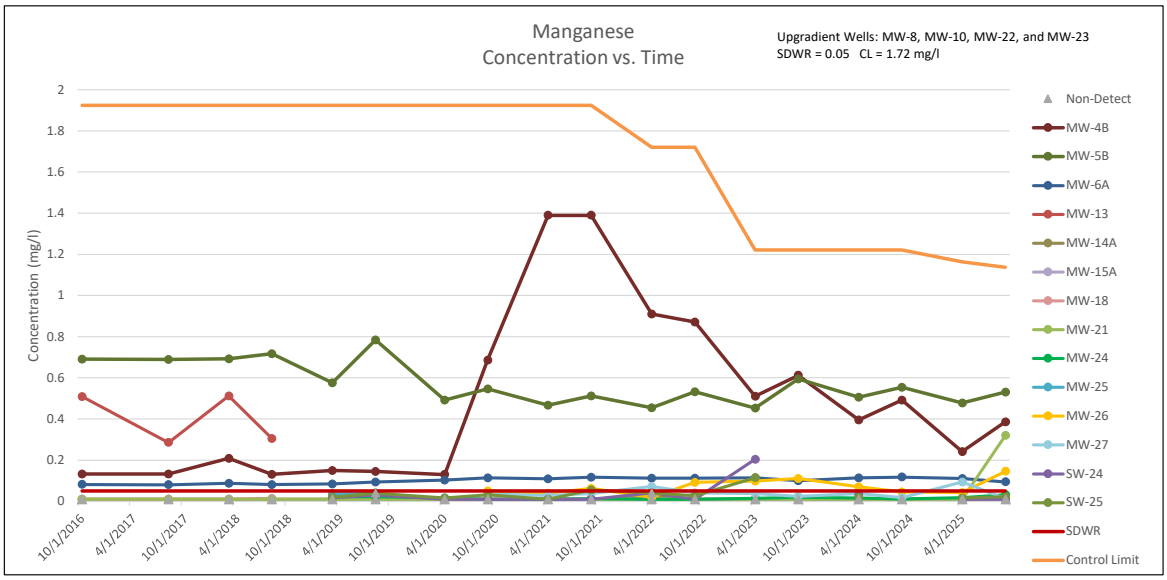


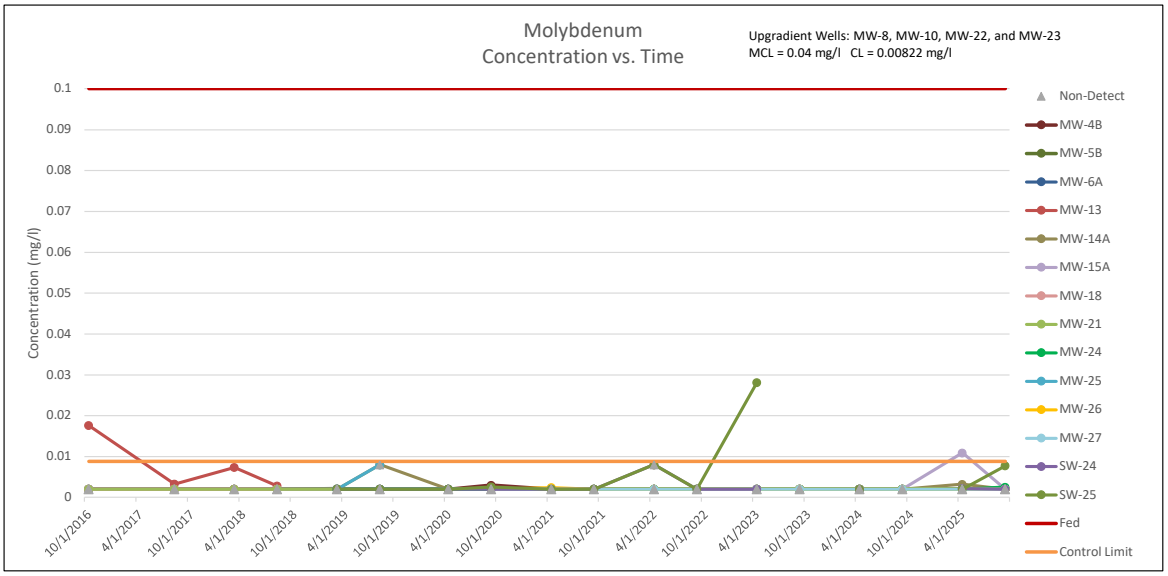




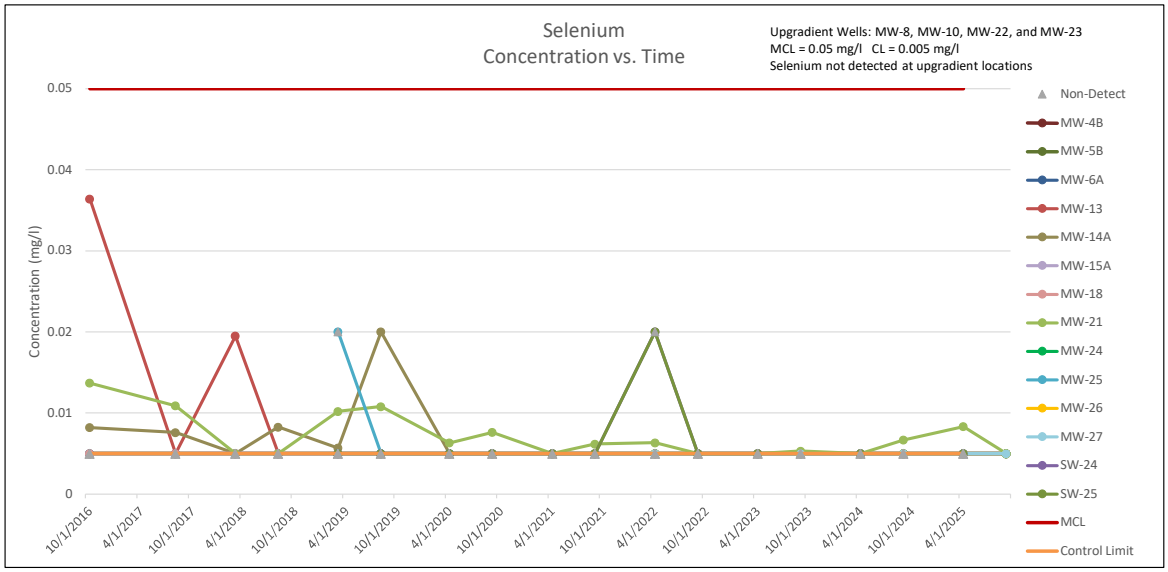
Water Quality Results
2016 - 2025

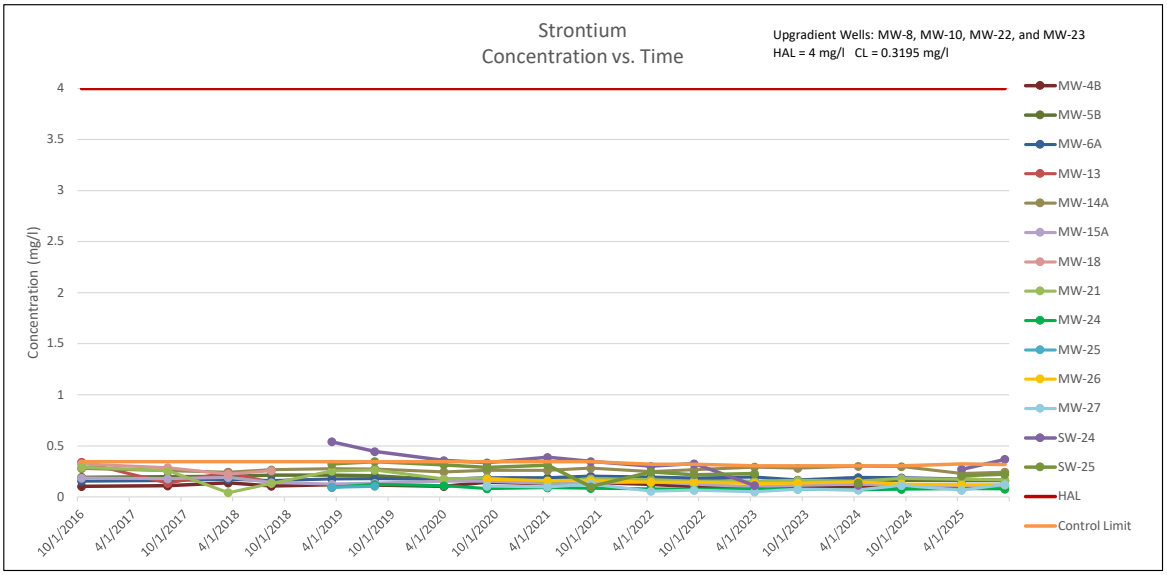


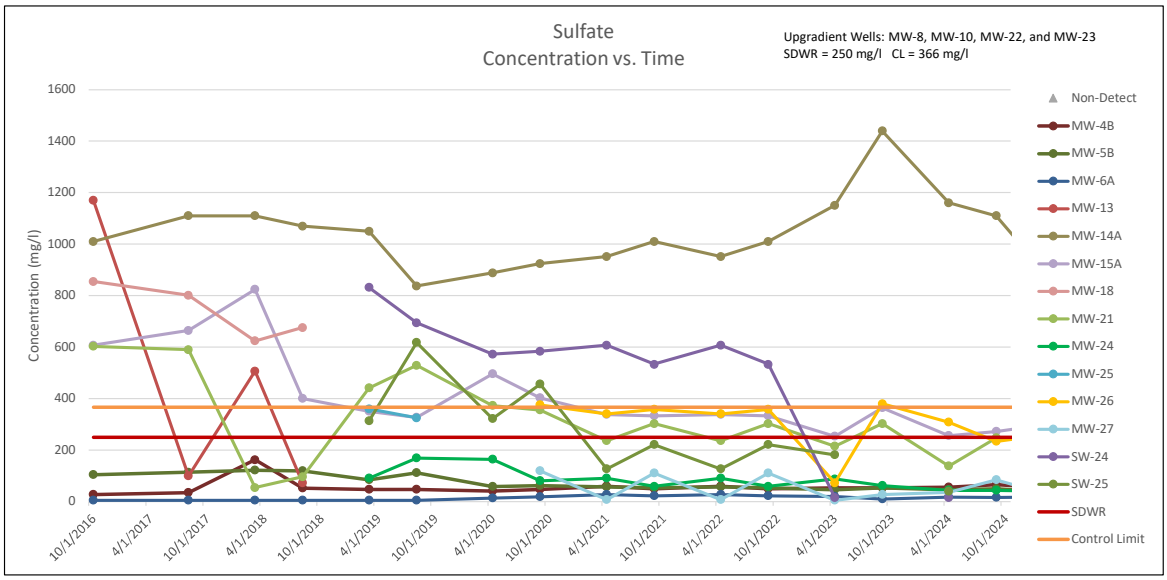




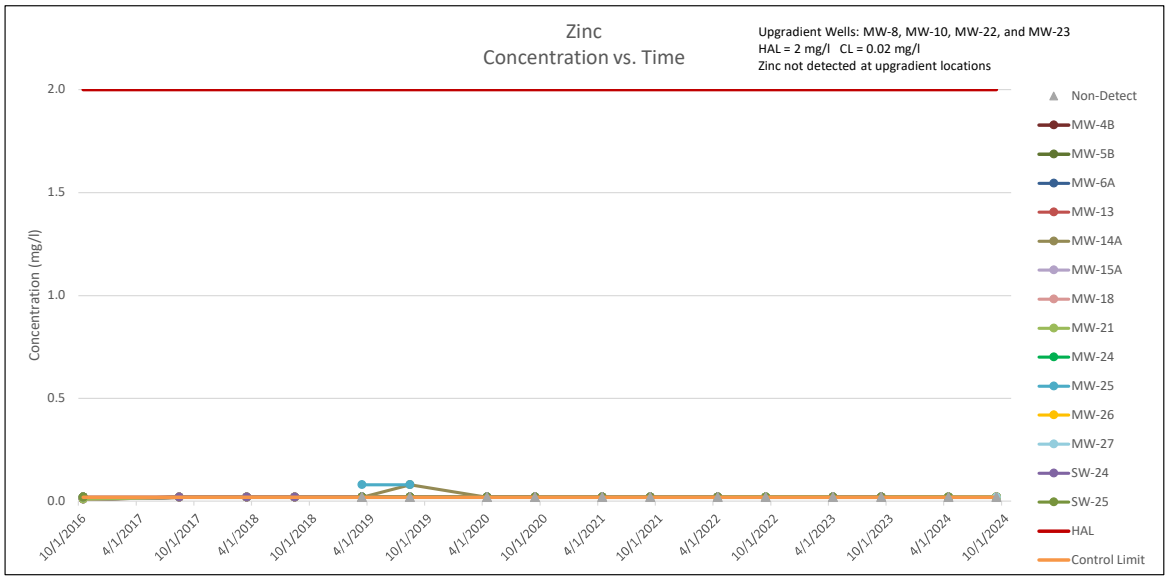
Water Quality Results
2016 - 2025



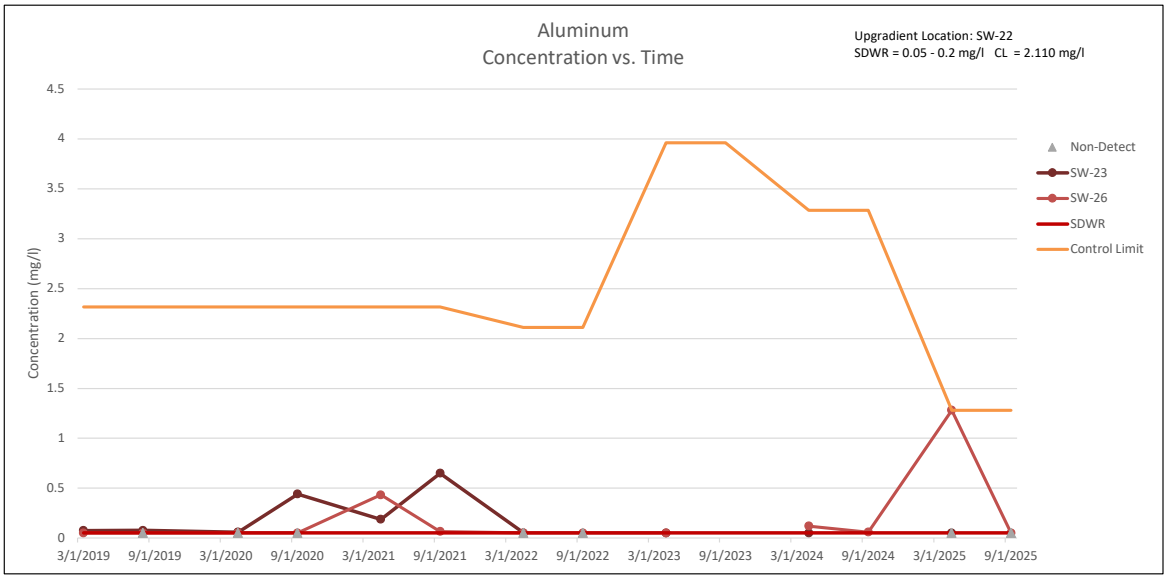


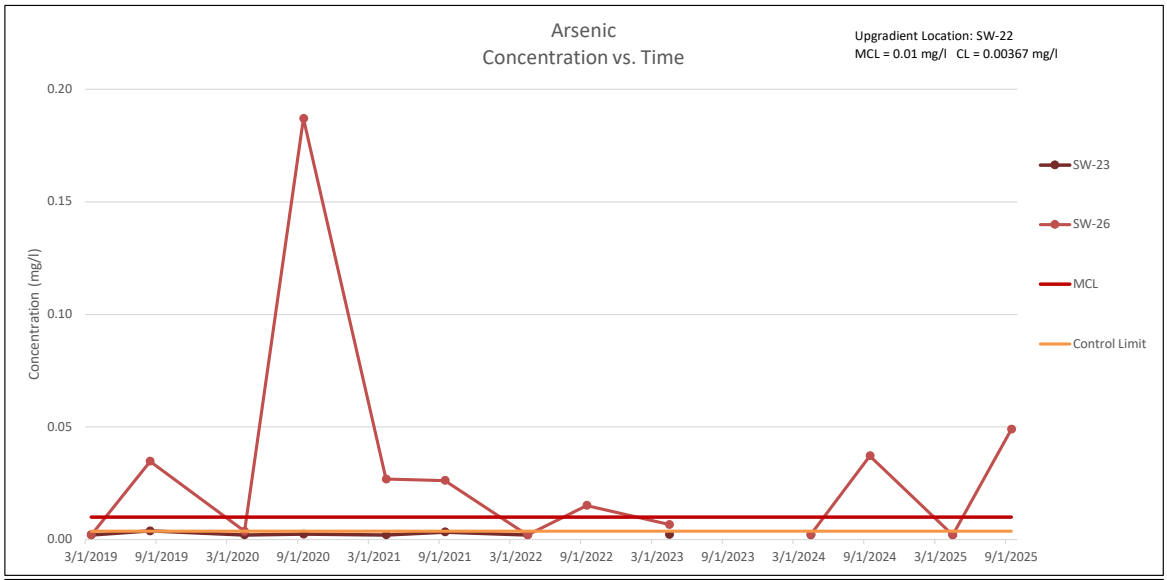


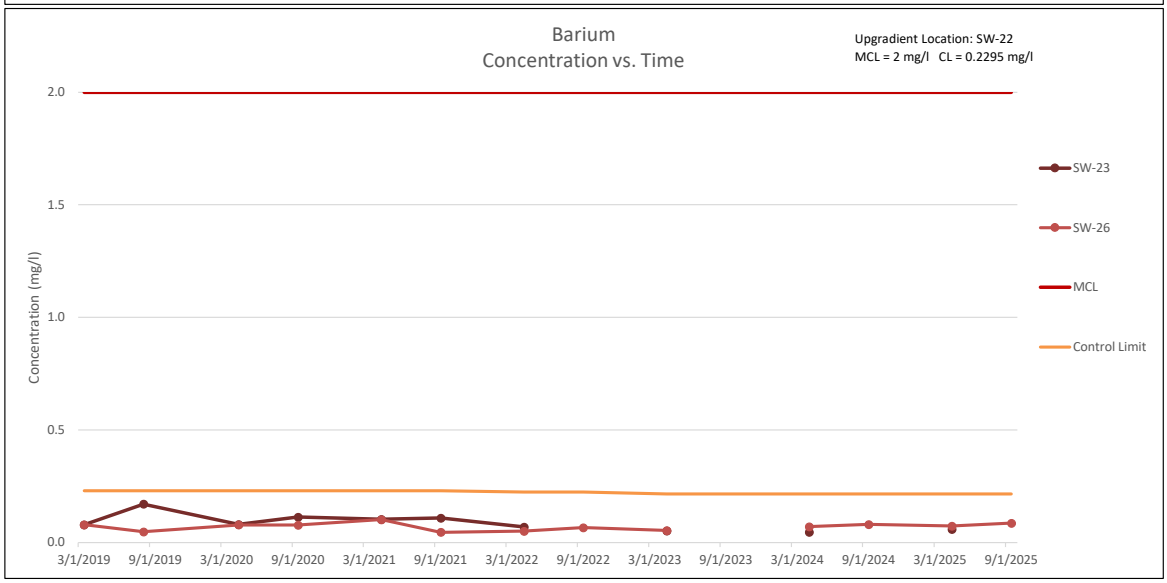
Water Quality Results
2016 - 2025



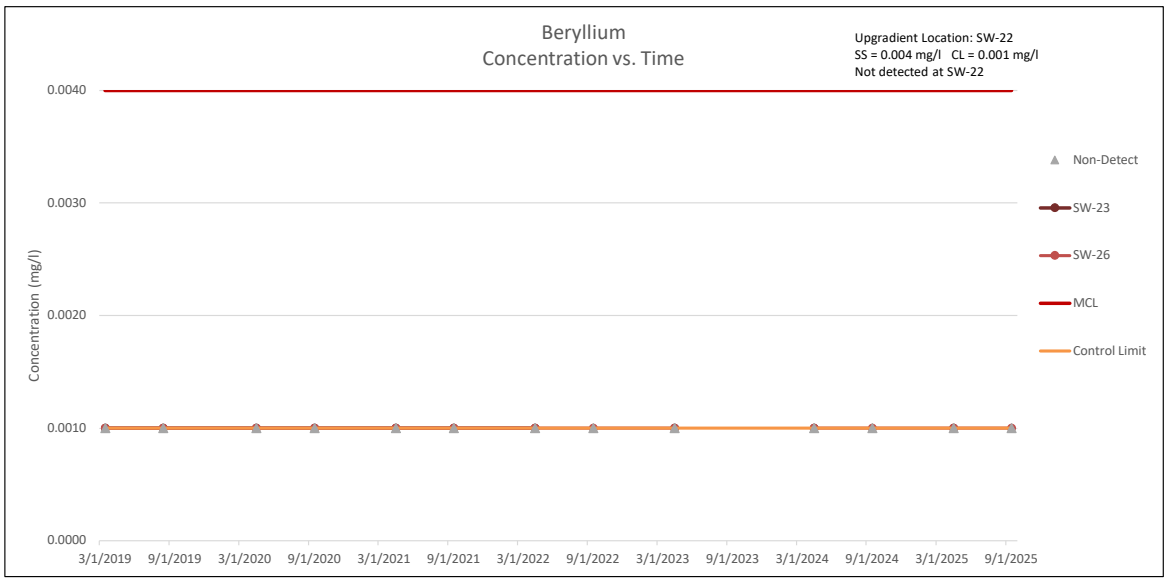
Water Quality Results
2016 - 2025

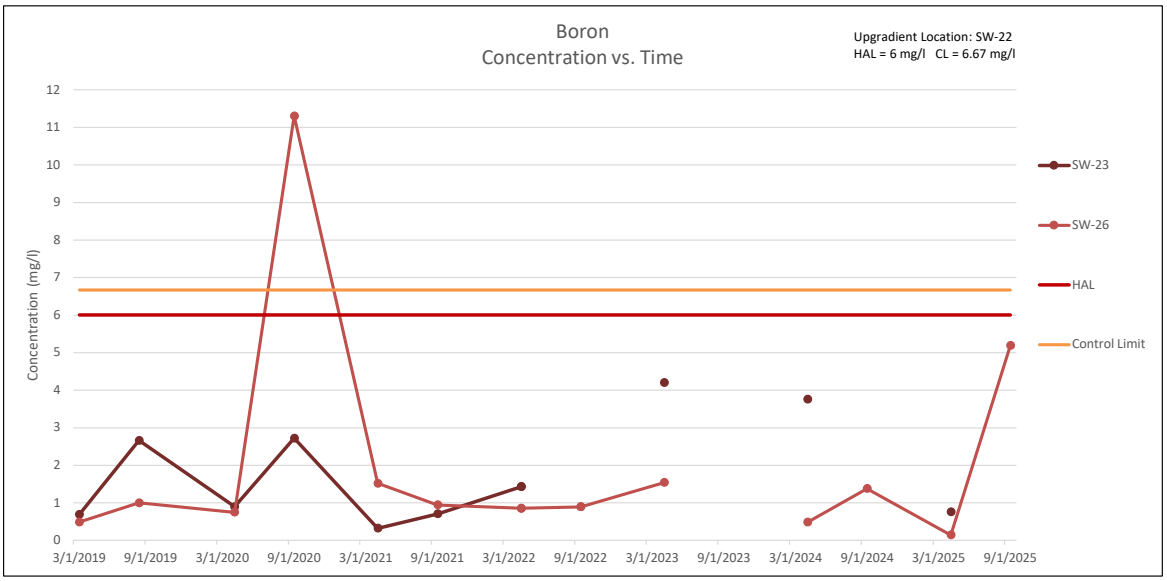


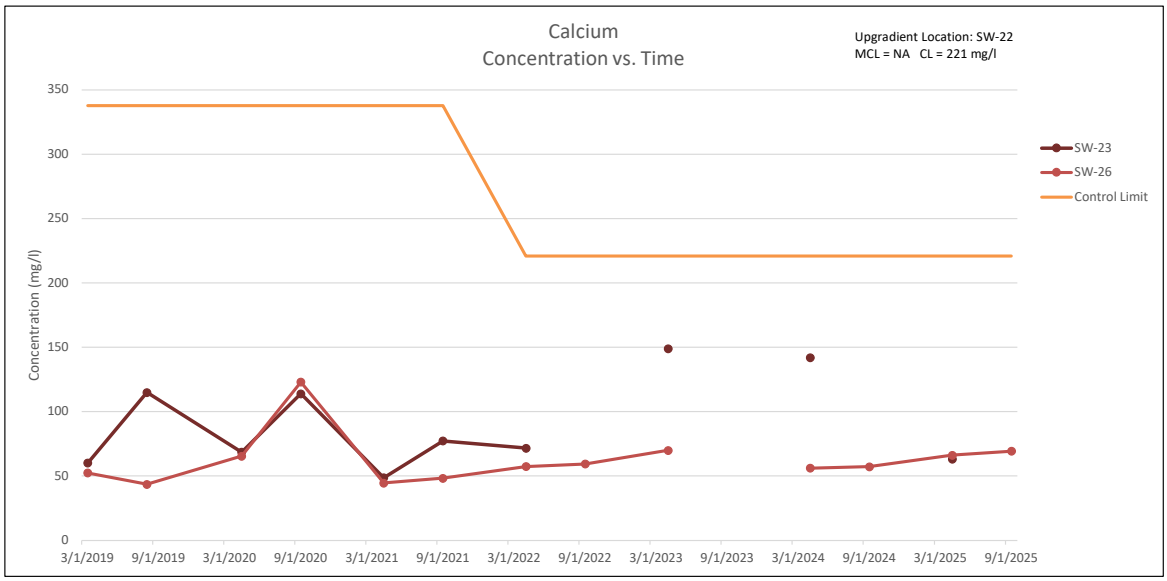




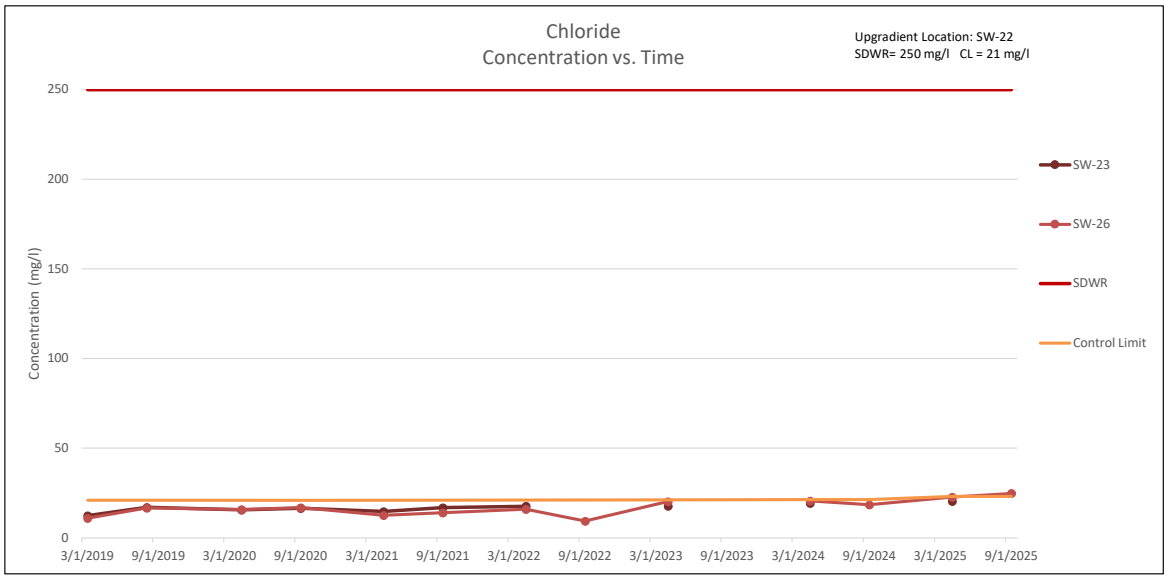
Water Quality Results
2016 - 2025

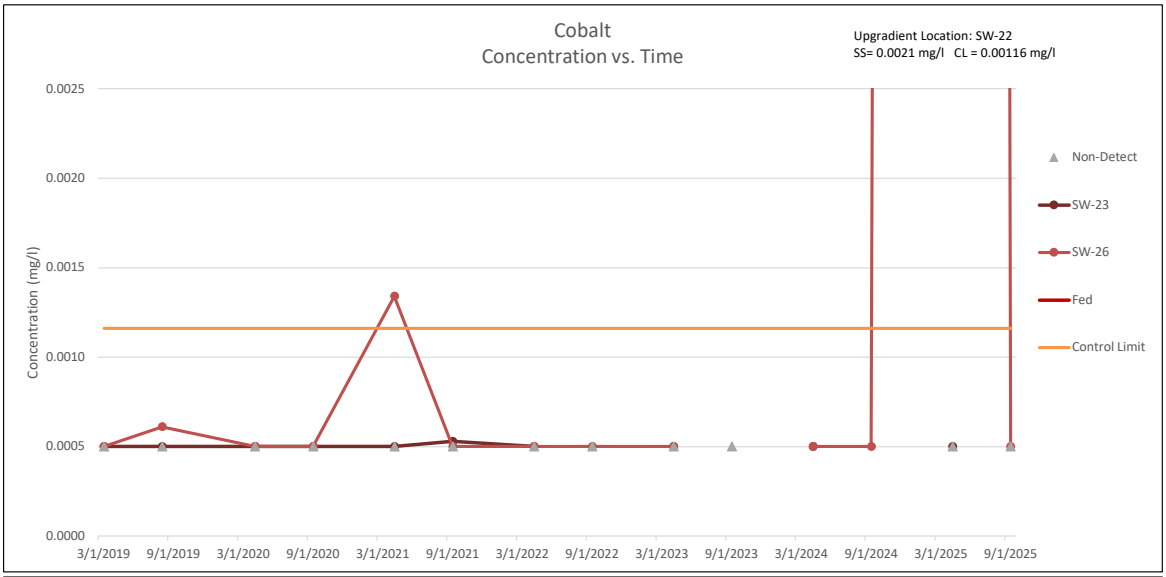


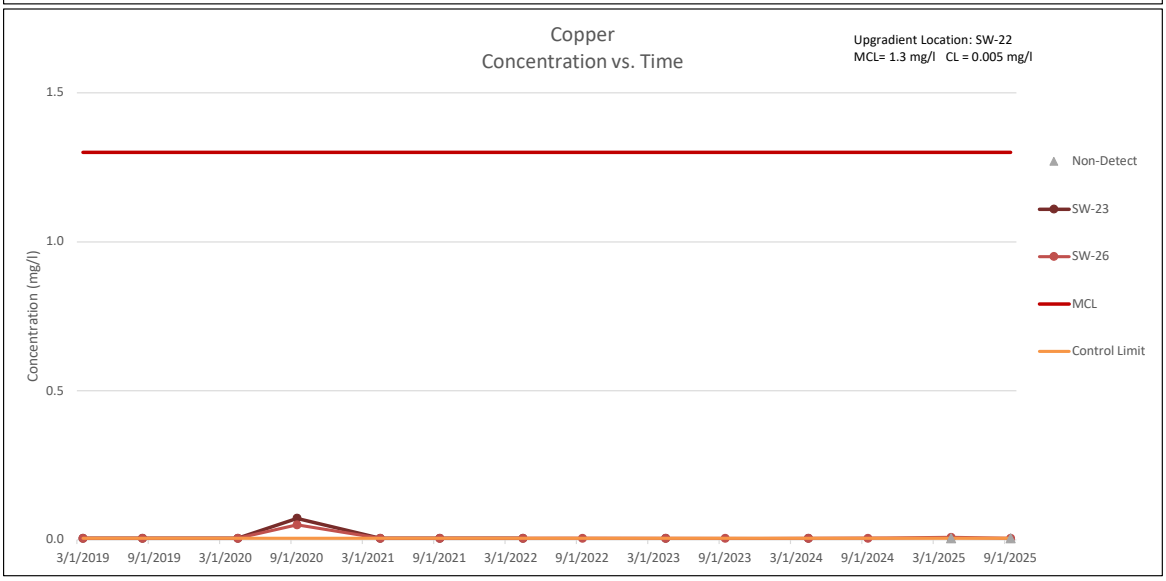




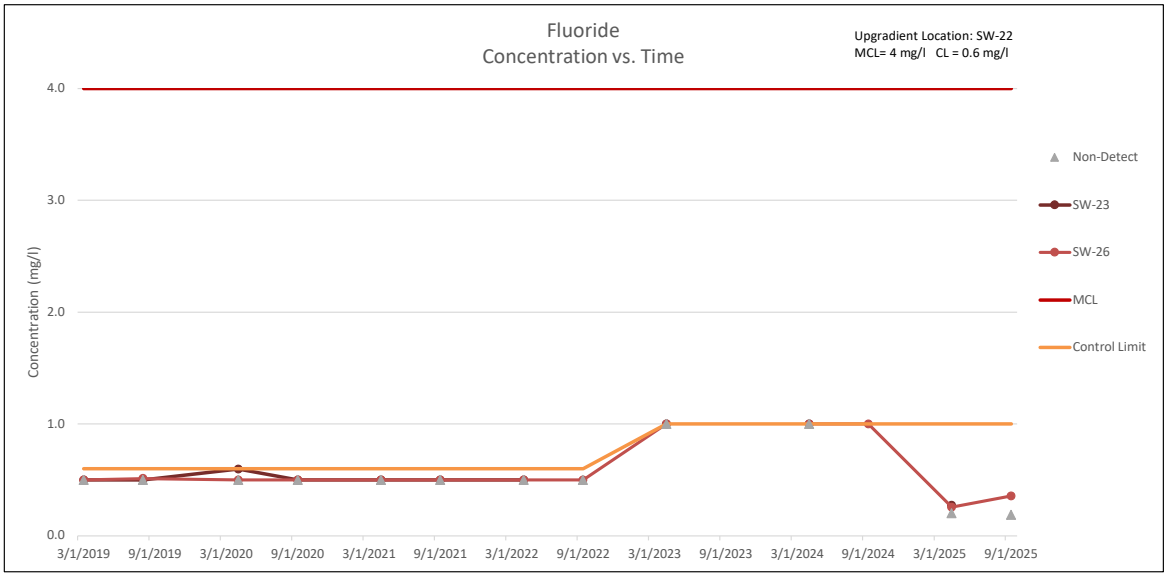
Water Quality Results
2016 - 2025

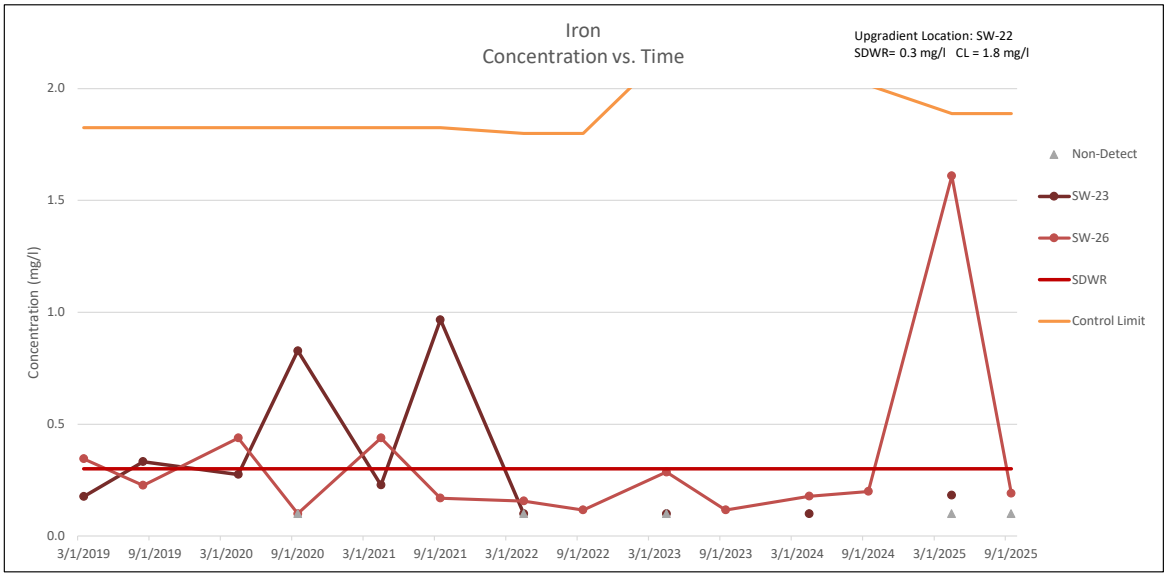


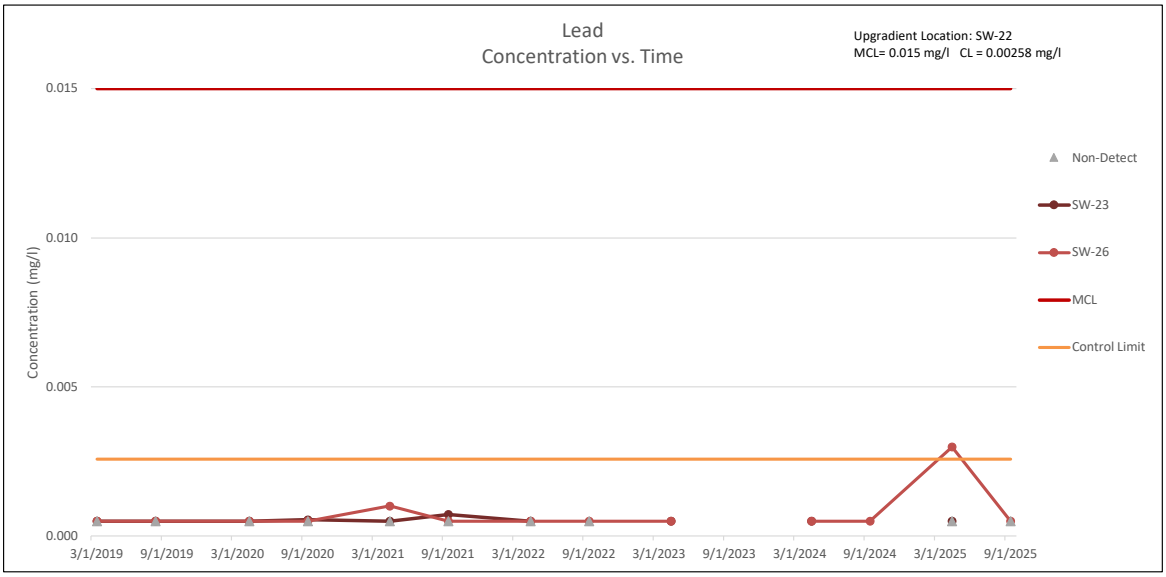




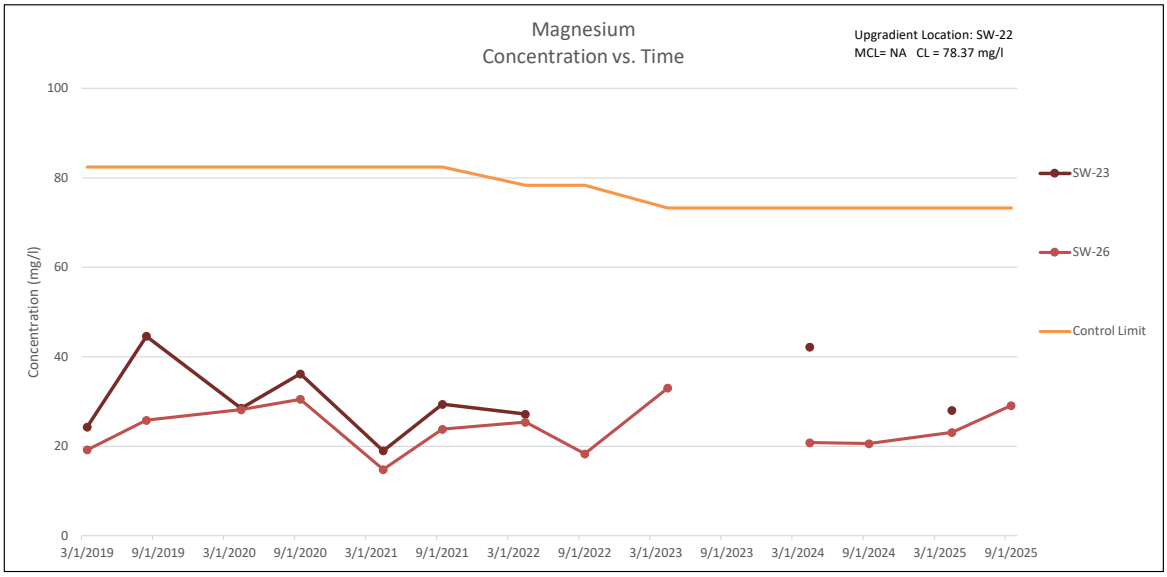
Water Quality Results
2016 - 2025

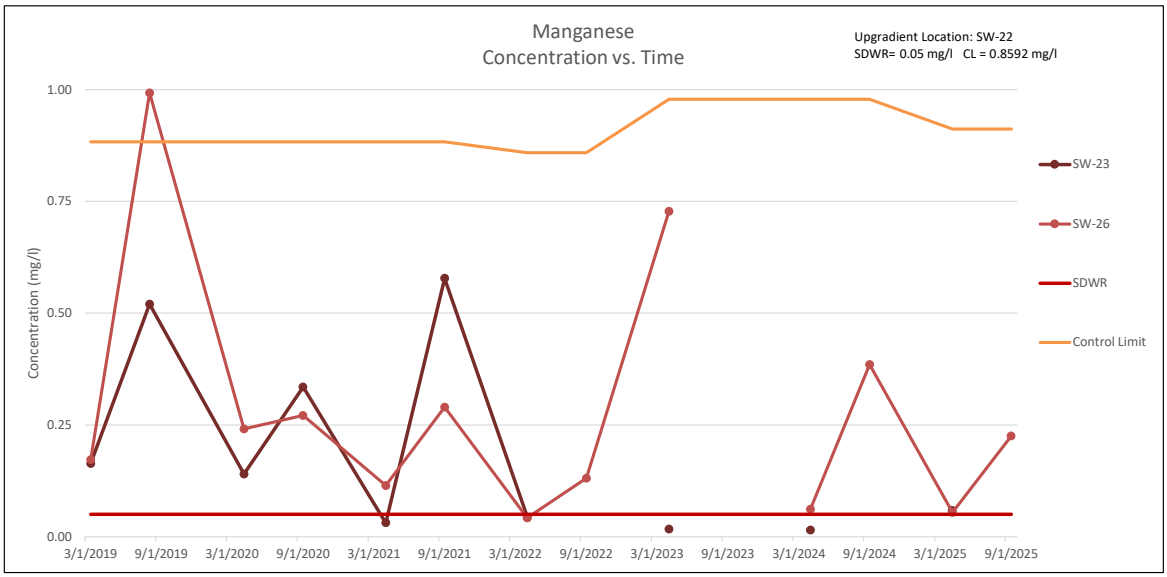


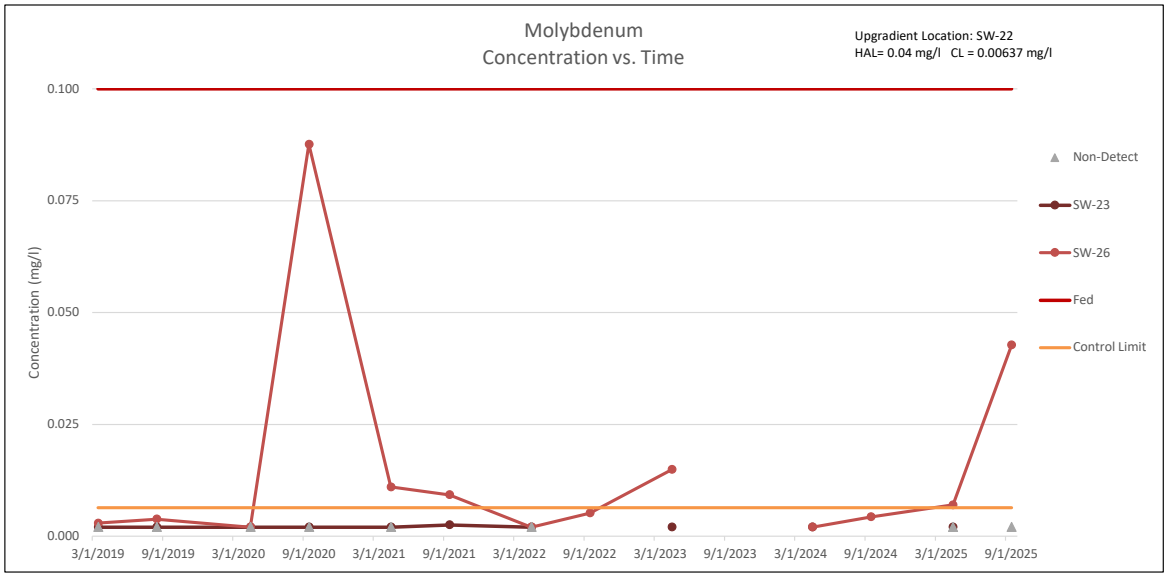




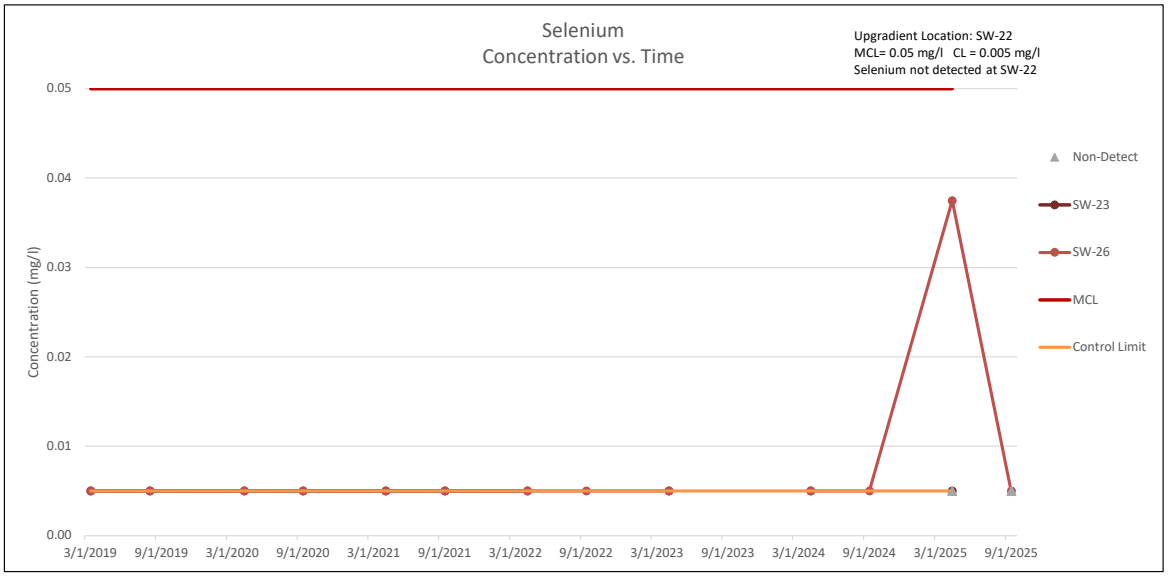
Water Quality Results
2016 - 2025

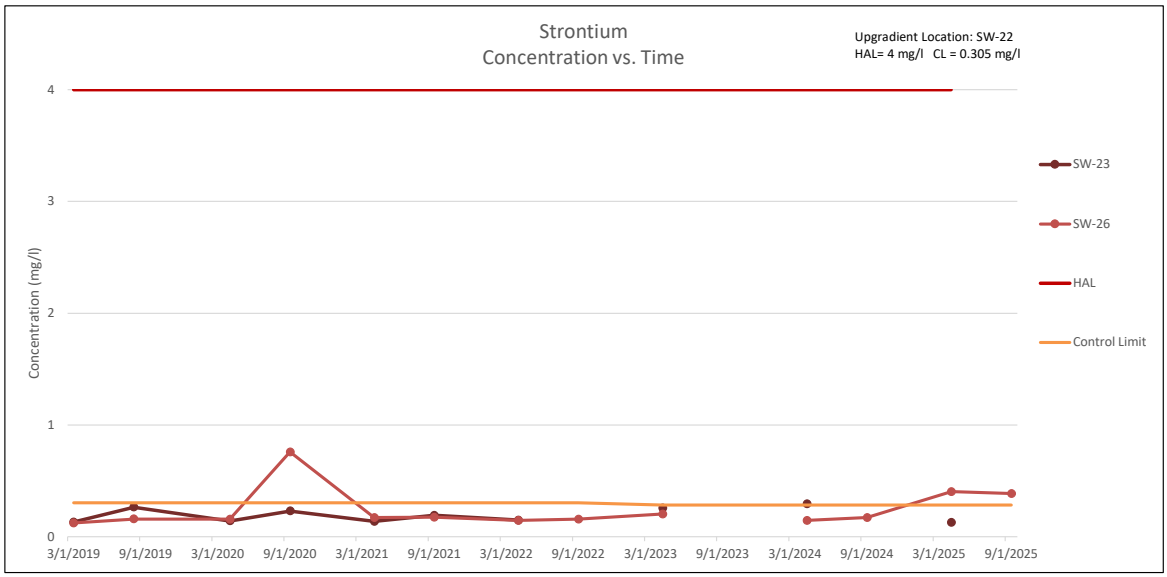


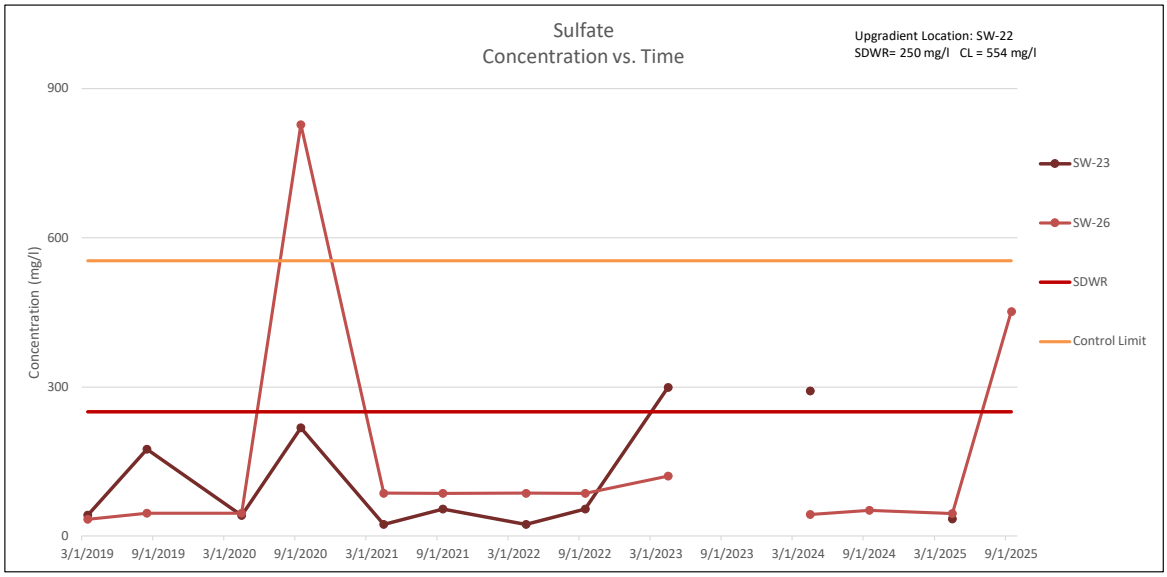




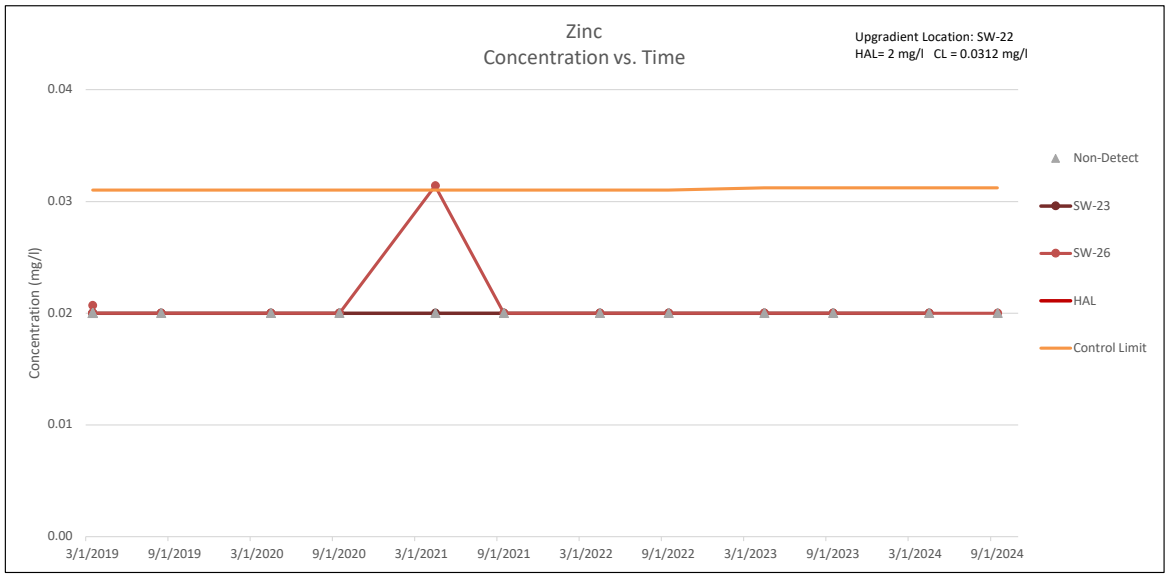
Water Quality Results
2016 - 2025





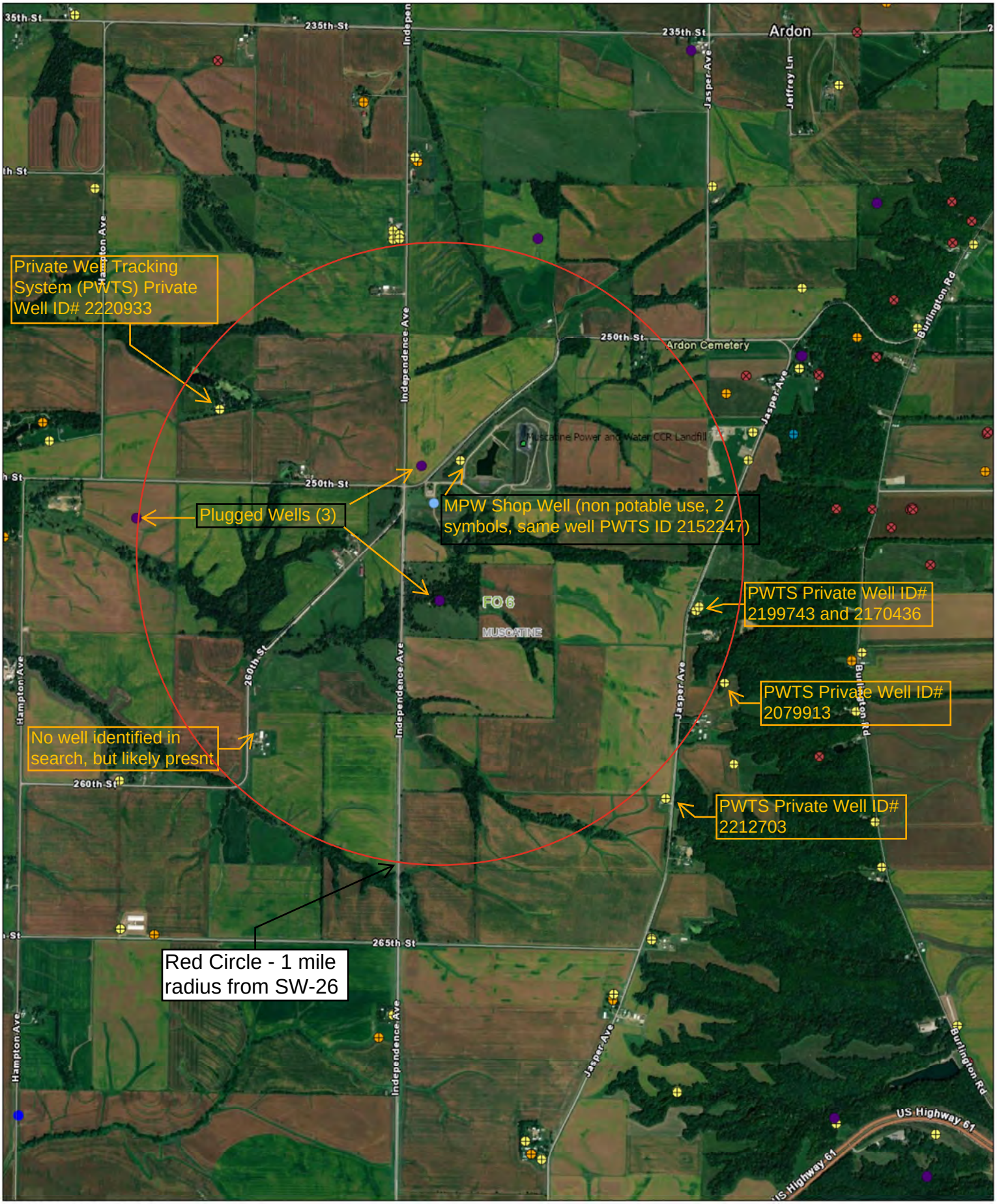


Water Quality Results
2016 - 2025



Appendix E

Receptor Survey Results



4/1/2026, 11:08:43 AM

- MSW Landfills (Operating)
- MSW Landfills (Operating) Property Boundaries
- MSW Landfills (Closed)
- C&D Landfills
- CCR Landfills
- Foundry Sand Landfills
- Industrial Monofills
- Wells - Public
- Surface Water Intake - Water Use

All Wells

- Public Water Supply Well
- IGS GeoSam Well
- Water Use Well
- Private Well Tracking System

1:25,262

0 0.2 0.4 0.8 mi

0 0.35 0.7 1.4 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Vantor



ghd.com

→ The Power of Commitment