

REPORT

# 2023 Annual Groundwater Monitoring and Corrective Action Report

RCPA Surface Impoundment, Rush Island Energy Center, Jefferson County, Missouri, USA

January 31, 2024

Project Number: 23008

**Submitted to:**



Ameren Missouri  
1901 Chouteau Avenue  
St. Louis, Missouri 63103

**Submitted by:**



Rocksmith Geoengineering, LLC  
2320 Creve Coeur Mill Road  
Maryland Heights, MO 63043



## EXECUTIVE SUMMARY AND STATUS OF THE RCPA GROUNDWATER MONITORING PROGRAM

This annual report was developed to meet the requirements of United States Environmental Protection Agency (USEPA) 40 CFR Part 257 “Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule” (the CCR Rule). The CCR Rule requires owners or operators of existing CCR units to produce an Annual Groundwater Monitoring and Corrective Action Report (Annual Report) each year (§ 257.90(e)). Ameren Missouri (Ameren) has determined that the Coal Combustion Residuals (CCR) surface impoundments at the Rush Island Energy Center (RIEC) are subject to the requirements of the CCR Rule. This Annual Report for the RIEC Surface Impoundments describes CCR Rule groundwater monitoring activities from January 1, 2023 through December 31, 2023 including verification results related to late 2022 sampling.

Throughout 2023, the RCPA has been in Corrective Action Monitoring with Detection and Assessment Monitoring continuing concurrently. Semi-annual groundwater sampling associated with Detection Monitoring has been ongoing since it was initiated on October 17, 2017 as required by the CCR Rule. As a part of Detection Monitoring, statistical evaluations are completed after each sampling event to determine if there are any values at a Statistically Significant Increase (SSI) over background. SSIs have been determined for each sampling event and a summary of the SSIs for the past year is provided in **Table 1**.

The Assessment Monitoring program was established at the RCPA on April 15, 2018. Since that time, groundwater sampling and statistical evaluations have been completed semi-annually to determine if there are any values at a Statistically Significant Level (SSL) over the site-specific Groundwater Protection Standard (GWPS). On October 11, 2018, it was determined that arsenic and molybdenum were present at SSLs. A summary of SSIs and SSLs for the past year is provided in **Table 1**.

**Table 1 - Summary of 2023 RCPA Sampling Events, Previous Year Verification, and Statistical Evaluations**

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
October-November 2022 Sampling Event	Detection & Assessment Monitoring, October 31 – November 3, 2022	November 30, 2022	Appendix III, Detected Appendix IV (See Note 1), & Major Cations and Anions	<p><b>pH:</b> MW-1, MW-2, MW-3  <b>Boron:</b> MW-1, MW-2, MW-3, MW-4, MW-6, MW-7/MW-7(R)  <b>Fluoride:</b> MW-2, MW-3, MW-4, MW-6  <b>Sulfate:</b> MW-1, MW-2, MW-3  <b>TDS:</b> MW-2, MW-3</p>	<p><b>Arsenic:</b> MW-2, MW-3, MW-7/MW-7(R)  <b>Molybdenum:</b> MW-2, MW-3</p>	February 22, 2023
	Verification Sampling, January 5, 2023	January 18, 2023	Detected Appendix III parameters (See Note 2)			
April 2023 Sampling Event	Detection & Assessment Monitoring, April 21-27, 2023	May 25, 2023	Appendix III, Appendix IV, Major Cations and Anions, & selected MNA parameters	<p><b>pH:</b> MW-1, MW-2, MW-3  <b>Boron:</b> MW-1, MW-2, MW-3, MW-4, MW-6, MW-7(R)  <b>Fluoride:</b> MW-2, MW-3, MW-4  <b>Sulfate:</b> MW-1, MW-2, MW-3  <b>TDS:</b> MW-2, MW-3</p>	<p><b>Arsenic:</b> MW-2, MW-3, MW-7/MW-7(R)  <b>Molybdenum:</b> MW-2, MW-3</p>	August 22, 2023
	Verification Sampling, July 11, 2023	July 27, 2023	Detected Appendix III parameters (See Note 2)			
November 2023 Sampling Event	Detection & Assessment Monitoring, November 6-8, 2023	December 11, 2023	Appendix III, Detected Appendix IV (See Note 3), & Major Cations and Anions	To be determined after statistical analysis and Verification Sampling are completed in 2024.		



Notes:

- 1) Testing was completed for Appendix IV analytes that were detected above the Practical Quantitation Limit (PQL) during the April 2022 sampling event.
- 2) Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.
- 3) Testing was completed for Appendix IV analytes that were detected above the PQL during the April 2023 sampling event.
- 4) SSI – Statistically Significant Increase.
- 5) SSL – Statistically Significant Level.
- 6) TDS – Total Dissolved Solids.
- 7) MNA – Monitored Natural Attenuation.

On January 9, 2019, Ameren initiated its Corrective Measures Assessment (CMA) and posted its CMA report on May 20, 2019. A public meeting was held on May 28, 2019 and responses to public comments are posted on Ameren’s CCR website. On August 30, 2019, Ameren published its “Remedy Selection Report – 40 CFR § 257.97 Rush Island, Labadie, Sioux and Meramec CCR Basins” (Remedy Selection Report) that identified source control through installation of a low permeability cover system, use of Monitored Natural Attenuation (MNA), and installation of Supplemental Corrective Measures as its chosen corrective action remedial plan. The Remedy Selection Report’s remedial plan consists of two initial phases as follows:

- 1) Source control, stabilization and containment of CCR by installation of a low permeability geomembrane cap (a minimum  $1 \times 10^{-7}$  centimeters per second (cm/sec) versus  $1 \times 10^{-5}$  cm/sec required by the CCR Rule).
- 2) Once source control is achieved, monitor the natural attenuation of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modelling evaluations will document that concentrations are decreasing as modelled. MNA occurs due to naturally occurring processes within the aquifer.

In addition to MNA as a Corrective Measure, Ameren has also initiated a supplemental corrective measure consisting of groundwater extraction, treatment, and re-injection using ex-situ treatment technologies with chemical precipitation and selective ion exchange.

Ameren commenced phase 1 of the corrective action remedial plan in August 2019 by initiating closure at the RCPA. Closure of the RCPA was completed on December 15, 2020, thereby transitioning the RCPA into the post-closure care requirements of the CCR Rule. As outlined in §257.104 (Post-closure Care Requirements) of the CCR Rule, the monitoring system and programs must be maintained for at least 30 years. After 30 years, if the unit is in Detection Monitoring, the unit may cease groundwater sampling activities, otherwise post-closure care must continue until the unit can return to Detection Monitoring in accordance with section §257.95 (Assessment Monitoring Program).

Phase 2 of the corrective measures remedial plan as outlined in the Remedy Selection Report began with the April 2021 Corrective Action Sampling event on April 22, 2021. Since that time, groundwater sampling and statistical evaluations have been completed semi-annually to determine if there are any values at the corrective action monitoring well network that are statistically exceeding the GWPS. A summary of the Corrective Action Monitoring and associated statistical results for this year is provided in **Table 2**.

**Table 2 - Summary of 2023 RCPA Sampling Events and Statistical Evaluations for Corrective Action Monitoring Well Network**

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt Date	Parameters Collected	Constituents Statistically Exceeding the GWPS as a Part of Corrective Action Statistical Evaluations	Date Exceedance of GWPS was determined
October – November 2022 Sampling Event	Phase 2 – Corrective Action Sampling October 31 – November 3, 2022	December 2, 2022	Appendix III, Detected Appendix IV (See Note 1), & Major Cations and Anions	<p><b>Arsenic:</b> P05S, P17I, P17S, P19I, P21S</p> <p><b>Lead:</b> P17I, P19I</p> <p><b>Lithium:</b> P19I, P21D, P22S</p> <p><b>Molybdenum:</b> P10S, P17D, P17I, P19D, P19I, P21D, P21I, P22D</p>	February 22, 2023

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt Date	Parameters Collected	Constituents Statistically Exceeding the GWPS as a Part of Corrective Action Statistical Evaluations	Date Exceedance of GWPS was determined
April 2023 Sampling Event	Phase 2 – Corrective Action Sampling April 21-27, 2023	May 24, 2023	Appendix III, Appendix IV, Major Cations and Anions, & selected MNA parameters	<p><b>Arsenic:</b> P05S, P17I, P17S, P19I, P21S</p> <p><b>Lead:</b> P19I</p> <p><b>Lithium:</b> P19I, P21D, P22S</p> <p><b>Molybdenum:</b> P10S, P17D, P17I, P19D, P19I, P21D, P21I, P22D</p>	August 22, 2023
November 2023 Sampling Event	Phase 2 – Corrective Action Sampling November 6-9, 2023	December 19, 2023	Appendix III, Detected Appendix IV (See Note 2), & Major Cations and Anions	To be determined after statistical analyses are completed in 2024.	

Notes:

- 1) Testing was completed for Appendix IV analytes that were detected above the PQL during the April 2022 sampling event.
- 2) Testing was completed for Appendix IV analytes that were detected above the PQL during the April 2023 sampling event.
- 3) N/A – Not Applicable.
- 4) SSI – Statistically Significant Increase.
- 5) SSL – Statistically Significant Level.
- 6) MNA – Monitored Natural Attenuation.
- 7) On January 5, 2023, A confirmatory sample at P-19I was tested for Lithium due to a suspected outlier result collected in November 2022.

### Corrective Action

In addition to MNA as a Corrective Action Remedy at Rush Island, Ameren received an Underground Injection Control Missouri State Operating Permit (UI-0000043, available at <https://dnrservices.mo.gov/env/wpp/permits/issued/docs/UI0000043.pdf>) and a pilot groundwater treatment study was completed in 2021. The results of this groundwater treatment pilot study displayed significant reductions in key CCR indicator concentrations. Due to the success, Ameren expanded this technology to the downgradient side (eastern side) of the RCPA. The groundwater treatment system became fully operational in February 2022 and 6.291 million gallons of water were treated in 2022 and 11.603 million gallons of water were treated in 2023.

Overall, Corrective Action taken by Ameren has reduced concentrations of key CCR constituents by means of closure of the RCPA with an engineered geomembrane cover system, installation and operation of a groundwater treatment system, and MNA of impacts. In monitoring wells downgradient of the RCPA, average arsenic concentrations have decreased approximately 36%, average boron concentrations have decreased approximately 18%, and average molybdenum concentrations have decreased approximately 12% since 2018. Monitoring and further evaluation of monitoring results will continue, and progress will be tracked in future Annual Reports and statistical evaluations.

# Table of Contents

1.0	Installation or Decommissioning of Monitoring Wells.....	1
2.0	Groundwater Sampling Results and Discussion.....	1
2.1	Detection Monitoring Program.....	1
2.2	Assessment Monitoring Program.....	1
2.3	Corrective Action Monitoring.....	2
2.4	Supplemental Corrective Measures.....	3
2.5	Evaluation of Corrective Measures.....	5
2.6	Groundwater Elevation, Flow Rate and Direction.....	6
2.7	Sampling Issues.....	6
3.0	Activities Planned for 2024.....	7

## TABLES

**Table 1** - Summary of 2023 RCPA Sampling Events, Previous Year Verification, and Statistical Evaluations (in text)

**Table 2** - Summary of RCPA Sampling Events for Corrective Action Monitoring Well Network (in text)

**Table 3** - Summary of Well Construction Details

**Table 4** - Summary of Detection and Assessment Groundwater Network Sampling Dates

**Table 5** - Summary of Corrective Action Groundwater Network Sampling Dates

**Table 6** - October-November 2022 Detection Monitoring Results

**Table 7** - April 2023 Detection Monitoring Results

**Table 8** - November 2023 Detection Monitoring Results

**Table 9** - October-November 2022 Assessment Monitoring Results

**Table 10** - April 2023 Assessment Monitoring Results

**Table 11** - November 2023 Assessment Monitoring Results

**Table 12** - October-November 2022 Corrective Action Monitoring Results

**Table 13** - April 2023 Corrective Action Monitoring Results

**Table 14** - November 2023 Corrective Action Monitoring Results

## FIGURES

**Figure 1** - Rush Island Energy Center Groundwater Monitoring Programs and Monitoring Well Location Map

**Figure 2** - CCR Impacted Groundwater Treatment Process (in text)

**Figure 3** - Rush Island CCR Treatment System Effluent Data – System Optimization Period and Full-Scale Operations (in text)

**Figure 4** - Average Arsenic Concentrations (in text)

**Figure 5** - Average Boron Concentrations (in text)

**Figure 6** - Average Molybdenum Concentrations (in text)

**Figure 7** - Mississippi River Level at St. Louis, Missouri (in text)



## APPENDICES

**Appendix A** - Laboratory Analytical Data

**Appendix B** - October-November 2022 Assessment Monitoring Statistical Evaluation

**Appendix C** - April 2023 Assessment Monitoring Statistical Evaluation

**Appendix D** - October-November 2022 Corrective Action Statistical Evaluation

**Appendix E** - April 2023 Corrective Action Statistical Evaluation

**Appendix F** - 2023 Potentiometric Surface Maps

## 1.0 INSTALLATION OR DECOMMISSIONING OF MONITORING WELLS

---

There are currently two different networks used for monitoring the RCPA and these include the monitoring well network established under §257.91 for Detection and Assessment Monitoring and the network established under §257.98 for Corrective Action Monitoring, as displayed in **Figure 1**. No new wells were installed or decommissioned in 2023. A summary of the well construction details for monitoring wells in both networks is provided in **Table 3**. Further details including well construction diagrams for these wells are provided in previous annual reports for the RCPA.

## 2.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

---

The following sections discuss the sampling events completed for the RCPA CCR Unit in 2023. **Tables 4 and 5** provide a summary of the groundwater samples collected in 2023 including the number of samples, the date of the sample collection, and the monitoring program for which the samples were collected. **Appendix A** provides laboratory analytical data for CCR Rule sampling events.

### 2.1 Detection Monitoring Program

A Detection Monitoring sampling event was completed October 31 – November 3, 2022. Verification sampling and the statistical analysis to evaluate for SSIs for the October-November 2022 event were not completed until 2023 and are therefore included in this report. A new initial exceedance of one Appendix III analyte triggered a verification sampling event, which was completed on January 5, 2023. The initial exceedance was not confirmed. **Table 6** summarizes the results and the statistical analysis of the October-November 2022 Detection Monitoring event.

Detection Monitoring samples were again collected April 21-27, 2023, and testing was completed for all Appendix III analytes, as well as major cations and anions. As outlined in the Statistical Analysis Plan for the Site, updates to the statistical limits should be completed once four to eight new sample results are available. During the statistical analysis of the April 2023 sampling event, the statistical limits used to determine an SSI were updated according to the Statistical Analysis Plan. New initial exceedances of Appendix III analytes triggered a verification sampling event, which was completed July 11, 2023. The initial exceedances were not confirmed. **Table 7** summarizes the results and the statistical analysis of the April 2023 Detection Monitoring event.

A Detection Monitoring sampling event was completed November 6-8, 2023, and testing was performed for all Appendix III analytes, as well as major cations and anions. Statistical analyses to evaluate for SSIs in the November 2023 data were not completed in 2023 and will be included in the 2024 Annual Report. **Table 8** summarizes the results of the November 2023 Detection Monitoring event.

### 2.2 Assessment Monitoring Program

An Assessment Monitoring sampling event was completed October 31 – November 3, 2022, and testing was completed for Appendix IV analytes that were detected above the Practical Quantitation Limit (PQL) during the previous sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks, as well as major cations and anions. **Table 9** summarizes the results of the October-November 2022 Assessment Monitoring event. The statistical evaluation for this event was completed in 2023 and is included in this report. The results from this analysis and a table that displays the site-specific GWPS for each Appendix IV constituent are provided in **Appendix B**. The statistical evaluation determined there were no new SSLs. The SSLs for the RCPA CCR Unit as of the October-November 2022 sampling event are:

- Arsenic at MW-2, MW-3, and MW-7/MW-7(R)
- Molybdenum at MW-2 and MW-3

An Assessment Monitoring sampling event was completed April 21-27, 2023 and testing was completed for all Appendix IV analytes, major cations and anions, and other selected MNA parameters. During the statistical analysis of the April 2023 sampling event, the site-specific GWPSs used to determine SSLs were updated in accordance with the Statistical Analysis Plan. **Table 10** summarizes the results of the April 2023 Assessment Monitoring event. The statistical evaluation for this event was completed in 2023 and is included in this report. The results from this analysis and a table that displays the site-specific GWPS are provided in **Appendix C**. The statistical evaluation determined there were no new SSLs.

An Assessment Monitoring sampling event was completed November 6-8, 2023, and testing was completed for Appendix IV analytes that were detected above the PQL during the April 2023 sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks as well as major cations and anions. **Table 11** summarizes the results of the November 2023 Assessment Monitoring event; however, statistical analysis to evaluate SSLs was not completed in 2023. Results of the statistical evaluation will be included in the 2024 Annual Report.

## 2.3 Corrective Action Monitoring

A Corrective Action sampling event was completed October 31 – November 3, 2022, and testing was completed for all Appendix III analytes, Appendix IV analytes that were detected above the PQL during the previous sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks, and major cations and anions. A summary of the October-November 2022 Corrective Action sampling event results is provided in **Table 12**. The statistical evaluation for this event was completed in 2023 and is included in this report. The results from this statistical evaluation are provided in **Appendix D**. A new exceedance for lithium at R-P-19I was identified during the October-November 2022 sampling event. The other exceedances remained the same for this event as those reported for the April 2022 event in the 2022 Annual Report. A summary of constituents displaying statistical exceedances of the GWPS using Corrective Action statistical methods<sup>1</sup> at corresponding wells is as follows:

- Arsenic at R-P-05S, R-P-17I, R-P-17S, R-P-19I, and R-P-21S
- Lead at R-P-17I and R-P-19I
- Lithium at R-P-19I, R-P-21D, and R-P-22S
- Molybdenum at R-P-10S, R-P-17D, R-P-17I, R-P-19D, R-P-19I, R-P-21D, R-P-21I, and R-P-22D

A Corrective Action sampling event was completed April 21-27, 2023, and testing was completed for Appendix III and IV analytes, major cations and anions, and other selected MNA parameters. As with Assessment Monitoring, during the statistical analysis of the April 2023 sampling event, the site-specific GWPSs were updated in accordance with the Statistical Analysis Plan. A summary of the April 2023 Corrective Action sampling event results is provided in **Table 13**. The results from this statistical evaluation are provided in **Appendix E**. Lead at R-P-17I is no longer an exceedance as of the April 2023 Corrective Action sampling event. The other exceedances remained the same for this event as those reported for the October-November 2022 event. A summary of constituents statistically exceeding the GWPS at corresponding well(s) is as follows:

- Arsenic at R-P-05S, R-P-17I, R-P-17S, R-P-19I, and R-P-21S
- Lead at R-P-19I
- Lithium at R-P-19I, R-P-21D, and R-P-22S

<sup>1</sup> The statistical testing method used to evaluate the Corrective Action monitoring results is the confidence interval method, which is the same method used during Assessment Monitoring, except the null hypothesis for the confidence intervals is reversed. For Corrective Action, the Unified Guidance states that the appropriate null hypothesis is that the groundwater population (mean) exceeds the Groundwater Protection Standard (GWPS) for those constituents that exceed the GWPS under Assessment Monitoring program. Therefore, in Corrective Action the Upper Confidence Limit (UCL) is compared to the GWPS instead of the Lower Confidence Limit (LCL) [as used during Assessment Monitoring].



■ Molybdenum at R-P-10S, R-P-17D, R-P-17I, R-P-19D, R-P-19I, R-P-21D, R-P-21I, and R-P-22D

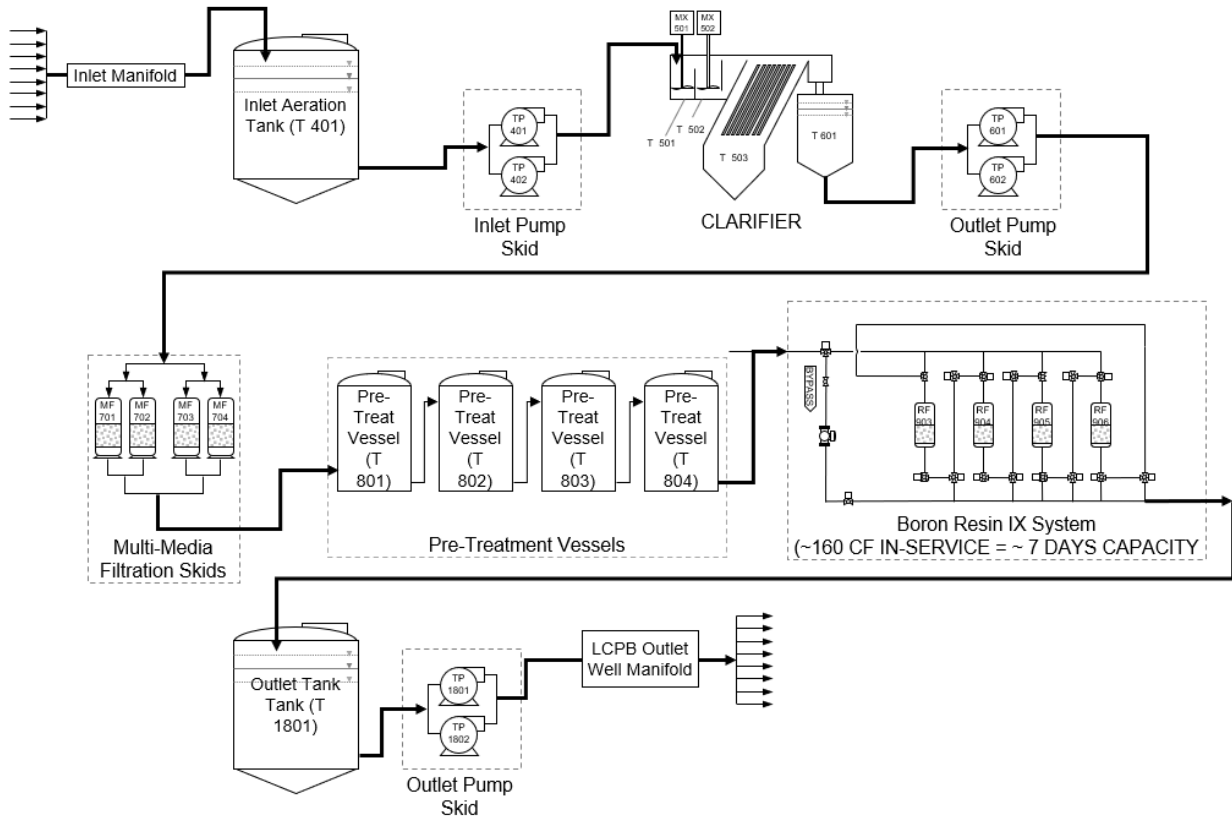
A Corrective Action sampling event was completed November 6-9, 2023, and testing was completed for Appendix III analytes, Appendix IV analytes that were detected above the PQL during the April 2023 sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks, as well as major cations and anions. **Table 14** summarizes the results of the November 2023 Corrective Action event; however, statistical analyses to evaluate statistical exceedances of the GWPS were not completed in 2023. Results of the statistical evaluation will be included in the 2024 Annual Report.

## 2.4 Supplemental Corrective Measures

As outlined in Ameren’s Remedy Selection Report, once source control is achieved, Ameren planned to monitor natural attenuation of groundwater and complete supplemental corrective measures using groundwater treatment. In 2021, Ameren began implementing the supplemental corrective measure for CCR groundwater compliance using ex-situ treatment technologies of chemical precipitation and selective-ion exchange by completing a pilot study at the site. The results of this groundwater treatment pilot study displayed significant reductions in key CCR indicator concentrations. Due to the success, Ameren expanded this technology to the downgradient side (eastern side) of the RCMPA and the full-scale treatment system began operation in February 2022.

The groundwater treatment system was developed to successfully capture the CCR impacted groundwater downgradient of the RCMPA, treat the water by removing contaminants, and return treated water to the same hydrogeologic horizon. The process used for this treatment is illustrated in Figure 2 below.

**Figure 2: CCR Impacted Groundwater Treatment Process**

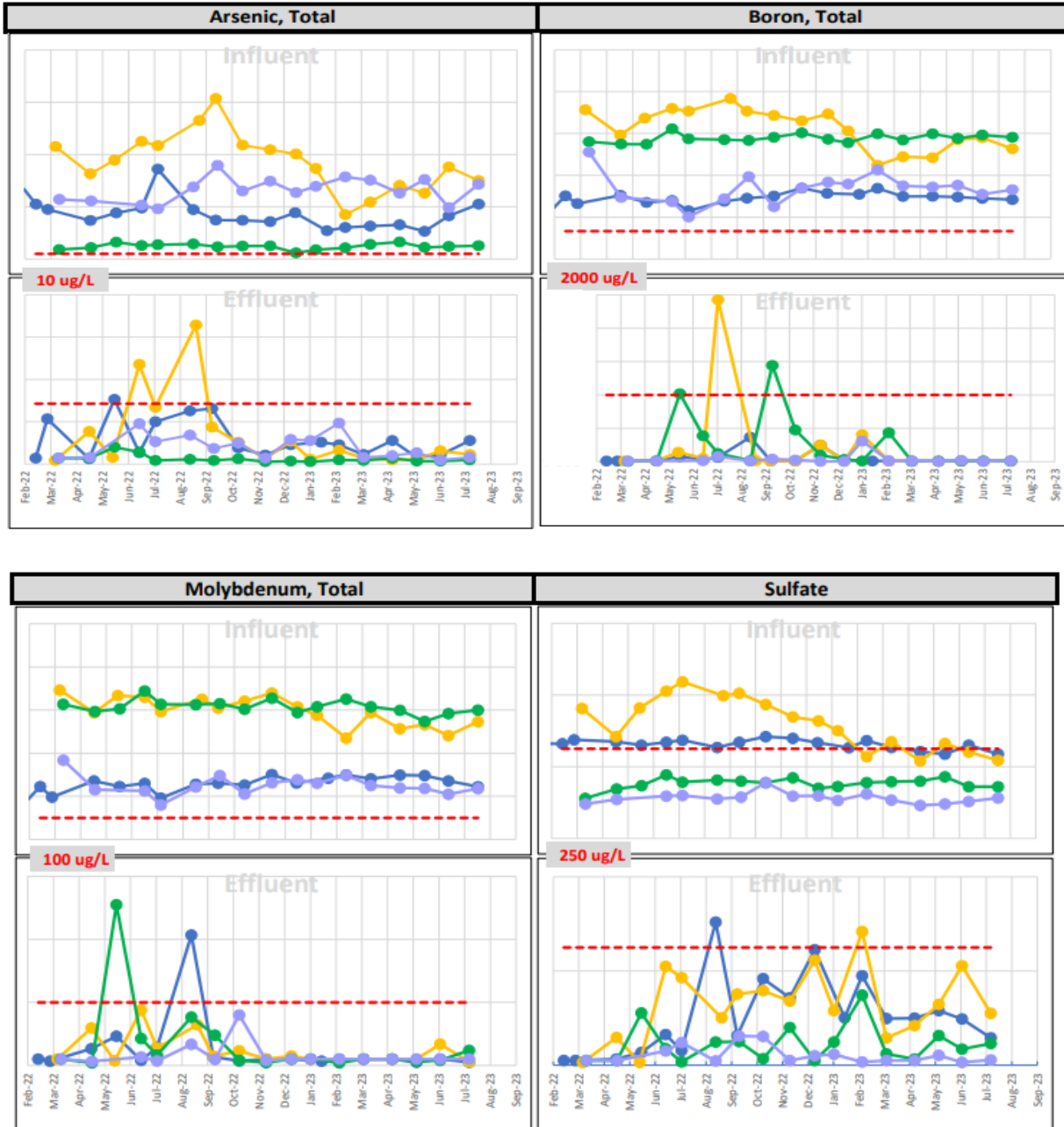


The process is constructed to minimize waste generation and operate independently of other facilities onsite.

**Figure 3** below shows the RCMPA groundwater treatment system influent and effluent data collected over the period of system optimization through initial full-scale system operation for key CCR constituents in groundwater

downgradient of the impoundment. The figure illustrates that after a few months of optimization the system effluent concentrations have consistently been below the discharge standards to groundwater. These discharge standards meet drinking water action levels for the applicable constituents.

**Figure 3: RCPA Groundwater Treatment System Influent and Effluent Concentrations – System Optimization Period and Full-Scale Operation**



Note: The 4 colors represent four treatment system flows monitored by the system

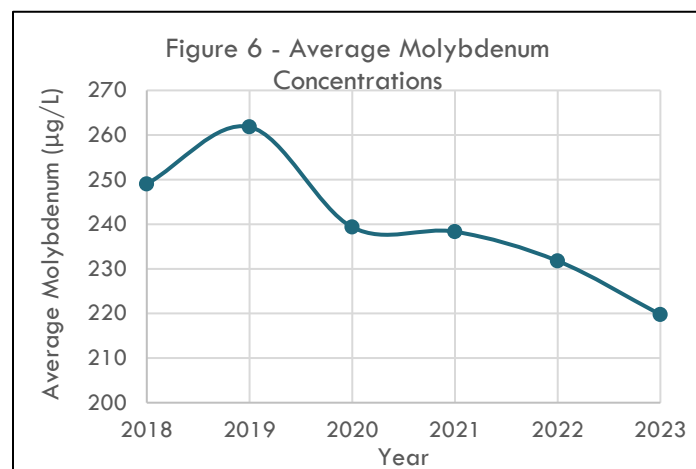
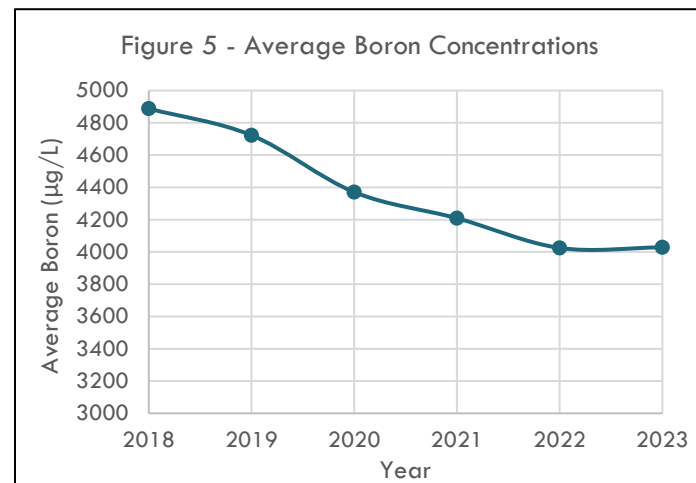
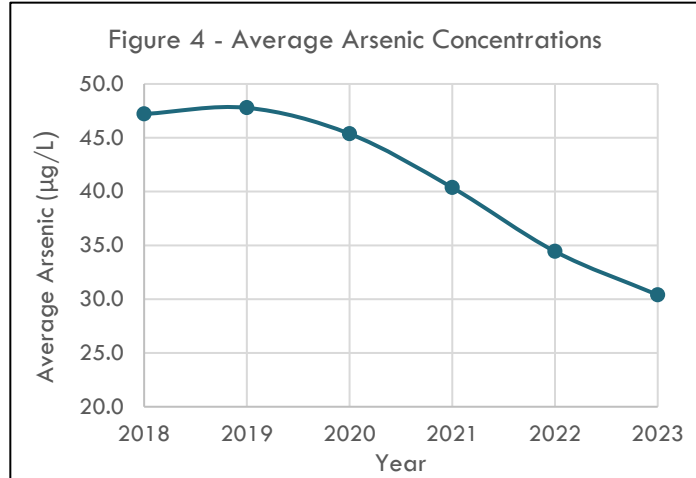
## 2.5 Evaluation of Corrective Measures

Ameren commenced phase 1 of the corrective action remedial plan in August 2019 by initiating closure of the RCPA, which was completed on December 15, 2020. The November 2023 groundwater sampling event represents the sixth event since closure of the RCPA was completed, and the fourth sampling event since the implementation of the full groundwater treatment system.

In order to document the effectiveness of the Corrective Action Remedies (corrective measures), an evaluation of the key site CCR indicators was completed. **Figures 4-6** (right), display the site average concentrations for arsenic, molybdenum, and boron in the downgradient monitoring wells onsite at the RIEC. While there is variability in individual well results, the average annual concentrations at the site are decreasing for arsenic, boron, and molybdenum concentrations as follows:

- Arsenic - Average concentrations in the monitoring wells downgradient of the RCPA have decreased approximately 36% since 2018.
- Boron - Average concentrations in the monitoring wells downgradient of the RCPA have decreased approximately 18% since 2018.
- Molybdenum – Average concentrations in the monitoring wells downgradient of the RCPA have decreased approximately 12% since 2018.

As displayed by these figures, corrective measures taken by Ameren, including the closure of the RCPA with an engineered geomembrane cover system, installation and operation of a groundwater treatment system, and MNA have been effective in reducing concentrations of these constituents. Monitoring and further evaluation of monitoring results will continue, and progress will be tracked in future Annual Reports and statistical evaluations.





## 2.6 Groundwater Elevation, Flow Rate and Direction

To meet the requirements of §257.93(c), water level measurements were taken at all monitoring wells prior to the start of groundwater purging and sampling. Static water levels were measured within a 24-hour period in each monitoring well using an electronic water level indicator.

Groundwater elevations were used to generate potentiometric surface maps included in **Appendix F**. As shown on the potentiometric surface maps, groundwater flow direction within the uppermost aquifer is dynamic and influenced by seasonal changes in water level of the adjacent Mississippi River. Water flows into and out of the alluvial aquifer as a result of fluctuating river water levels that produce “bank recharge” and “bank discharge” conditions. Overall, based on the potentiometric surface maps, a general flow direction from the west (bluffs area) to the east (Mississippi River) is observed under normal river conditions. However, during periods of high river levels, groundwater flow can temporarily reverse. During these times of high river stage and temporary flow direction changes, horizontal groundwater gradients generally decrease, and little net movement of groundwater occurs.

Groundwater flow direction and hydraulic gradient were estimated for the monitoring wells at the RIEC using commercially available software. Results from this assessment indicate that while groundwater flow direction is variable and gradients are relatively low, the overall net groundwater flow at the RCPA was toward the Mississippi River. Horizontal gradients calculated by the program range from 0.00002 to 0.0015 feet/foot with an estimated net annual groundwater movement of approximately 31 feet in the prevailing downgradient direction.

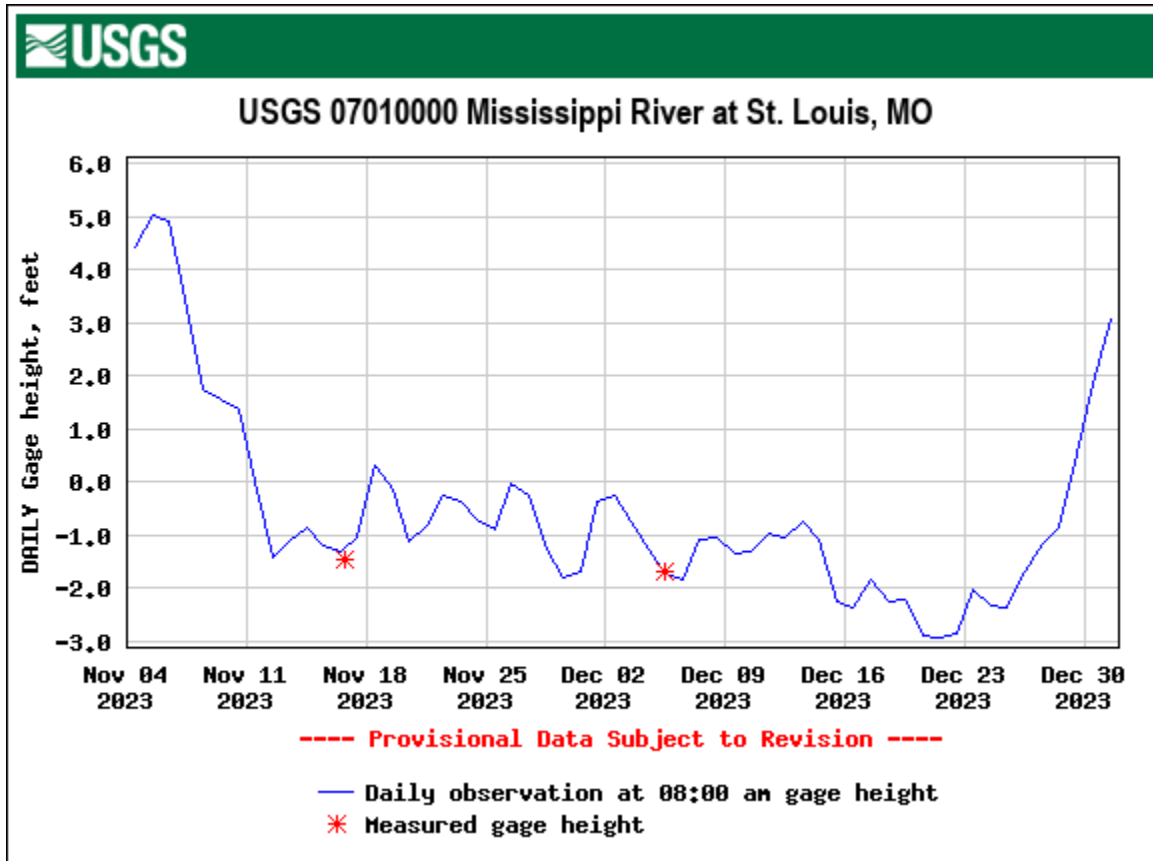
## 2.7 Sampling Issues

During the November 2023 sampling event, low Mississippi River levels prevented the sampling of P10S and P31S. The water elevation in P10s was below the dedicated bladder pump on November 8<sup>th</sup>. As discussed in Section 2.5, groundwater elevations vary at the RIEC based on seasonal changes in water level in the adjacent Mississippi River. As displayed on **Figure 7**, the river gauge height at the upstream Mississippi gauge in St. Louis (United State Geological Survey (USGS) gauge # 07010000) was 1.7 feet on November 8<sup>th</sup> and the Mississippi River level has remained too low to sample P10S.

Additionally, P31S could not be sampled due to low groundwater elevations. P31S is typically sampled using a positive displacement method (i.e. a peristaltic pump), however, due to low groundwater conditions, this method could not be used as this method is only effective up to the suction lift limit, which varies with elevation but can be as much as approximately 30 feet. In an effort to sample this well, a bladder pump was lowered down the well, however, the pump became lodged and it was unable to be retrieved. No sample was collected at P31S as the groundwater elevation has not risen to an elevation such that a sample using the positive displacement method could be collected since November 9<sup>th</sup>, 2023.

Review of the laboratory data from the November 2023 sampling event identified that sample R-P-22D and R-P-22S were switched as the result of an error. Values were determined to be switched based on review of the results and professional judgement. Consequently, testing data were matched with the correct wells and these results are updated on **Table 14**.

Figure 7 – Mississippi River Level at St. Louis, Missouri



### 3.0 ACTIVITIES PLANNED FOR 2024

Detection and Assessment Monitoring are scheduled to continue on a semi-annual basis in the second and fourth quarters of 2022. Statistical analysis of the November 2023 Detection and Assessment Monitoring data will be completed in 2024 and will be included in the 2024 Annual Report.

As part of the phase 2 of the Remedy Selection Report’s corrective measures remedial plan, Corrective Action sampling is scheduled to continue on a semi-annual basis in the second and fourth quarters of 2024. Statistical analysis of the November 2023 Corrective Action Monitoring data will be completed in 2024 and will be included in the 2024 Annual Report. Monitoring and statistical evaluation of the Corrective Action will be completed in accordance with the corrective measures remedial plan discussed in the Remedy Selection Report.

Evaluation of the effectiveness of Corrective Action and Corrective Measures on CCR constituent concentrations in groundwater will continue in 2024 and be included in the 2024 Annual Report.

# Tables



**Table 3**  
**Summary of Well Construction Details**  
**RCPA Surface Impoundment**  
**Rush Island Energy Center, Jefferson County, MO**

Monitoring Well ID	Installation Date	Location		Top of Casing Elevation	Ground Surface Elevation	Top of Screen Elevation	Base of Well	Total Depth
		Northing <sup>1</sup>	Easting <sup>1</sup>	(FT MSL) <sup>2</sup>	(FT MSL) <sup>2</sup>	(FT MSL) <sup>2</sup>	(FT MSL) <sup>2</sup>	(FT BGS) <sup>3</sup>
<b>CCR RULE COMPLIANCE NETWORK</b>								
MW-1	10/31/2015	835384.2	889832.5	395.52	393.5	320.7	310.5	83.0
MW-2	11/1/2015	834261.5	890364.1	393.87	391.7	319.5	309.3	82.4
MW-3	10/31/2015	833178.4	890892.7	391.38	389.2	319.1	308.9	80.3
MW-4	10/30/2015	831647.5	890830.5	392.78	390.8	310.9	300.7	90.1
MW-5	10/29/2015	831994.9	889984.5	390.36	388.0	333.0	327.8	60.2
MW-6	10/28/2015	833111.0	888977.0	402.71	401.1	346.4	341.2	59.8
MW-7(R)	9/11/2019	834501.4	888496.4	408.22	406.0	318.7	308.6	97.4
MW-B1	10/28/2015	837602.1	887903.9	411.61	409.6	319.8	309.6	100.0
MW-B2	10/27/2015	837801.7	885337.2	397.85	395.9	318.3	308.1	87.9
<b>CORRECTIVE ACTION MONITORING WELL NETWORK</b>								
P05S	12/5/2012	832317.6	889749.7	392.50	390.1	365.6	345.6	44.5
P10S	12/4/2012	834545.1	888099.0	407.23	404.8	375.8	355.8	49.0
P16S	12/6/2012	835092.8	889998.3	393.39	390.9	370.9	350.9	40.0
P17D	9/6/2013	834718.8	890158.3	395.56	392.6	267.3	262.3	130.3
P17I	12/10/2013	834744.2	890148.9	394.86	392.5	333.6	328.6	63.9
P17S	11/27/2012	834736.7	890152.8	394.65	392.5	373.5	355.5	37.0
P19D	12/10/2013	833915.6	890552.2	392.08	390.3	270.3	265.3	125.0
P19I	12/10/2013	833911.3	890550.6	392.75	390.2	330.7	325.7	64.5
P19S	11/27/2012	833919.0	890546.4	393.31	390.6	368.6	348.6	42.0
P21D	12/9/2013	832902.9	891031.2	393.39	391.0	271.8	266.8	124.2
P21I	12/9/2013	832904.2	891027.0	393.53	391.2	333.4	328.4	62.8
P21S	11/28/2012	832898.0	891024.7	393.87	391.5	371.5	351.5	40.0
P22D <sup>5</sup>	12/7/2013	832278.2	891018.7	395.05	391.6	286.6	281.6	110.0
P22S	11/29/2012	832277.0	891007.6	394.30	392.2	373.2	353.2	39.0
P29D	12/11/2013	837804.9	885389.1	398.27	396.2	300.9	295.9	100.3
P29S	1/17/2013	837797.9	885383.8	399.11	397.0	367.0	347.0	50.0
P30S	1/16/2013	836606.9	889007.8	407.75	408.0	368.0	348.0	60.0
P31S	12/10/2012	835629.4	887488.1	408.68	406.1	374.1	354.1	52.0

Notes:

- 1) Horizontal Datum: State Plane Coordinates NAD83 (2000) Missouri East Zone 2401 (feet).
- 2) FT MSL- Feet above mean sea level.
- 3) FT BGS - Feet below ground surface.
- 4) Vertical Datum: NAVD88 (feet).
- 5) Monitoring well P22D repaired and modified on February 9, 2021.

**Table 4**  
**Summary of Detection and Assessment Groundwater Network Sampling Dates**  
**RCPA Surface Impoundment**  
**Rush Island Energy Center, Jefferson County, MO**

Groundwater Monitoring Wells	Date of Sample Collection				
	January 2023 Verification Sampling	April 2023 Sampling Event	July 2023 Verification Sampling	November 2023 Sampling Event	Total Number of Samples
<b>CCR Rule Compliance Monitoring Well Network</b>					
<b>MW-B1</b>	-	4/27/2023	-	11/8/2023	2
<b>MW-B2</b>	-	4/26/2023	-	11/8/2023	2
<b>MW-1</b>	1/5/2023	4/24/2023	7/11/2023	11/8/2023	4
<b>MW-2</b>	-	4/24/2023	-	11/8/2023	2
<b>MW-3</b>	-	4/25/2023	7/11/2023	11/7/2023	3
<b>MW-4</b>	-	4/21/2023	-	11/6/2023	2
<b>MW-5</b>	-	4/21/2023	7/11/2023	11/6/2023	3
<b>MW-6</b>	-	4/25/2023	-	11/8/2023	2
<b>MW-7(R)</b>	-	4/25/2023	-	11/8/2023	2
<b>Assessment or Detection Monitoring</b>	Detection	Assessment/ Detection	Detection	Assessment/ Detection	NA

Notes:

- 1.) Detection Monitoring results provided in Tables 6 - 8.
- 2.) Verification Sampling results provided in Tables 6 & 7.
- 3.) Assessment Monitoring results provided in Tables 9 -11.
- 4.) "-" No sample collected.
- 5.) NA - Not Applicable.

**Table 5**  
**Summary of Corrective Action Groundwater Network Sampling Dates**  
**RCPA Surface Impoundment**  
**Rush Island Energy Center, Jefferson County, MO**

Groundwater Monitoring Wells	Date of Sample Collection			
	January 2023 Confirmatory Sampling	April 2023 Sampling Event	November 2023 Sampling Event	Total Number of Samples
<b>Corrective Action Monitoring Well Network</b>				
P05S	-	4/21/2023	11/6/2023	2
P10S	-	4/25/2023	NS	1
P16S	-	4/24/2023	11/8/2023	2
P17D	-	4/24/2023	11/8/2023	2
P17I	-	4/24/2023	11/8/2023	2
P17S	-	4/24/2023	11/8/2023	2
P19D	-	4/24/2023	11/7/2023	2
P19I	1/5/2023	4/24/2023	11/7/2023	3
P19S	-	4/24/2023	11/7/2023	2
P21D	-	4/24/2023	11/7/2023	2
P21I	-	4/24/2023	11/7/2023	2
P21S	-	4/24/2023	11/7/2023	2
P22D	-	4/24/2023	11/6/2023	2
P22S	-	4/24/2023	11/6/2023	2
P29D	-	4/26/2023	11/9/2023	2
P29S	-	4/26/2023	11/9/2023	2
P30S	-	4/27/2023	11/8/2023	2
P31S	-	4/21/2023	NS	1
<b>Event Type</b>	Corrective Action	Corrective Action	Corrective Action	NA

Notes:

- 1.) Corrective Action sampling results provided in Tables 12-14.
- 2.) NA - Not Applicable.
- 3.) Confirmatory sampling completed in January 2023 for Lithium at R-P-19I.
- 4.) NS - Not Sampled. Water elevation too low to collect sample.

**Table 6**  
**October-November 2022 Detection Monitoring Results**  
**RCPA Surface Impoundment**  
**Rush Island Energy Center, Jefferson County, MO**

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS							
			MW-B1	MW-B2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7(R)	
<b>October-November 2022 Detection Monitoring Event</b>												
DATE	NA	NA	11/3/2022	11/3/2022	11/3/2022	11/2/2022	11/1/2022	11/1/2022	11/1/2022	11/1/2022	11/1/2022	10/31/2022
pH	SU	6.517-7.417	6.67	6.94	7.58	10.59	9.30	7.14	7.33	6.95	7.13	
BORON, TOTAL	µg/L	125	106	37.5 J	2,450	3,350	14,500	2,100	57.4 J	540	1,660	
CALCIUM, TOTAL	µg/L	161,000	166,000	104,000	46,500	9,950	9,220	104,000	118,000	96,800	71,100	
CHLORIDE, TOTAL	mg/L	71.83	59.8	26.1	23.7	24.1	26.7 J	14.4	3.4 J	4.3 J	6.9	
FLUORIDE, TOTAL	mg/L	0.2668	ND	0.17 J	0.33	0.98	1.1	0.34	0.19 J	0.27	ND	
SULFATE, TOTAL	mg/L	46.9	41.1	12.0	229	269	335 J	9.7	28.2	23.8	16.2	
TOTAL DISSOLVED SOLIDS	mg/L	757	727	377	603	814	855	461	388	312	370	
<b>January 2023 Verification Sampling Event</b>												
DATE	NA	NA			1/5/2023							
pH	SU	6.517-7.417										
BORON, TOTAL	µg/L	125										
CALCIUM, TOTAL	µg/L	161,000										
CHLORIDE, TOTAL	mg/L	71.83										
FLUORIDE, TOTAL	mg/L	0.2668			0.16 J							
SULFATE, TOTAL	mg/L	46.9										
TOTAL DISSOLVED SOLIDS	mg/L	757										

**NOTES:**

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. NA - Not applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Prediction Limits calculated using Sanitas Software.
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
7. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).
8. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.

**Table 7**  
**April 2023 Detection Monitoring Results**  
**RCPA Surface Impoundment**  
**Rush Island Energy Center, Jefferson County, MO**

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS						
			MW-B1	MW-B2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7(R)
<b>April 2023 Detection Monitoring Event</b>											
DATE	NA	NA	4/27/2023	4/26/2023	4/24/2023	4/24/2023	4/25/2023	4/21/2023	4/21/2023	4/25/2023	4/25/2023
pH	SU	6.550 - 7.39	6.98	7.19	7.86	10.55	9.03	7.24	7.40	7.25	7.20
BORON, TOTAL	µg/L	125	96.7 J	36.7 J	2,530	3,900	13,100	1,980	55.5 J	625	1,360
CALCIUM, TOTAL	µg/L	166,000	139,000	103,000	77,400	11,300	16,700	102,000	118,000	86,800	75,000
CHLORIDE, TOTAL	mg/L	69.98	50.0	26.8	70.9	24.5	86.6	13.4	2.9	4.3 J	8.3
FLUORIDE, TOTAL	mg/L	0.2777	ND	ND	ND	0.92	0.51	0.53	0.21	0.27	ND
SULFATE, TOTAL	mg/L	46.9	36.0	21.3	238	271	237	4.0	23.5	23.1	10.9
TOTAL DISSOLVED SOLIDS	mg/L	757	657	378	624	794	799	458	397	308	372
<b>July 2023 Verification Sampling Event</b>											
DATE	NA	NA			7/11/2023		7/11/2023		7/11/2023		
pH	SU	6.550 - 7.39							7.38		
BORON, TOTAL	µg/L	125									
CALCIUM, TOTAL	µg/L	166,000									
CHLORIDE, TOTAL	mg/L	69.98			56.7 J		52.3 J				
FLUORIDE, TOTAL	mg/L	0.2777									
SULFATE, TOTAL	mg/L	46.9									
TOTAL DISSOLVED SOLIDS	mg/L	757									

**NOTES:**

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. NA - Not applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Prediction Limits calculated using Sanitas Software.
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
7. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).
8. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.

**Table 8**  
**November 2023 Detection Monitoring Results**  
**RCPA Surface Impoundment**  
**Rush Island Energy Center, Jefferson County, MO**

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS						
			MW-B1	MW-B2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7(R)
<b>November 2023 Detection Monitoring Event</b>											
DATE	NA	NA	11/8/2023	11/8/2023	11/8/2023	11/8/2023	11/7/2023	11/6/2023	11/6/2023	11/8/2023	11/8/2023
pH	SU	6.55 - 7.39	7.02	7.36	8.23	10.91	9.26	7.27	7.43	7.37	7.20
BORON, TOTAL	µg/L	125	95.4 J	32.2 J	3,320	4,540	14,200	1,950	51.5 J	452	1,180
CALCIUM, TOTAL	µg/L	166,000	171,000	111,000	40,600	10,700	18,600	112,000	116,000	97,800	83,200
CHLORIDE, TOTAL	mg/L	69.98	67.8	31.5	28.6 J	34.1	37.9 J	11.7	2.5	3.5 J	11.8 J
FLUORIDE, TOTAL	mg/L	0.2777	ND	ND	ND	0.54 J	0.84	0.54	ND	0.39 J	ND
SULFATE, TOTAL	mg/L	46.9	14.1	8.6	202	264	318	ND	21.3	25.9	16.9 J
TOTAL DISSOLVED SOLIDS	mg/L	757	743	437	593	668	841	435	381	501	392

**NOTES:**

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. NA - Not applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

Prepared By: JSI  
Checked By: GTM  
Reviewed By: MNH

**Table 9**  
**October-November 2022 Assessment Monitoring Results**  
**RCPA Surface Impoundment**  
**Rush Island Energy Center, Jefferson County, MO**

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS						
		MW-B1	MW-B2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7(R)
<b>FIELD PARAMETERS</b>										
DATE	NA	11/3/2022	11/3/2022	11/3/2022	11/2/2022	11/1/2022	11/1/2022	11/1/2022	11/1/2022	10/31/2022
DISSOLVED OXYGEN	mg/L	0.13	0.17	0.18	0.10	0.07	0.04	0.15	2.56	0.42
pH	SU	6.67	6.94	7.58	10.59	9.30	7.14	7.33	6.95	7.13
REDOX POTENTIAL	mV	-137.1	-134.2	22.8	176.0	-97.8	112.0	103.9	2.3	116.7
SPECIFIC CONDUCTIVITY	mS/cm	1.307	0.722	0.953	1.354	1.301	0.828	0.708	0.562	0.687
TURBIDITY	NTU	3.08	4.90	1.12	3.10	2.69	2.74	2.01	4.91	2.03
<b>APPENDIX IV PARAMETERS</b>										
ANTIMONY, TOTAL	µg/L	ND	ND	0.12 J	3.3	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	28.4	3.8	2.5	260	35.4	14.5	1.7	0.53 J	120
BARIUM, TOTAL	µg/L	537	373	33.4	10.7	31.8	368	337	112	249
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	1.2
FLUORIDE, TOTAL	mg/L	ND	0.17 J	0.33	0.98	1.1	0.34	0.19 J	0.27	ND
LEAD, TOTAL	µg/L	ND	ND	ND	12.2	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	57.5	7.5 J	ND	ND	ND	34.3	ND	ND	28.1
MOLYBDENUM, TOTAL	µg/L	ND	1.1 J	82.8	126	928 J	49.3	ND	1.5 J	55.0
RADIUM [226 + 228]	pCi/L	1.676	1.351	ND	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	2.1 J	0.58 J	ND	ND	0.41 J	ND

**NOTES**

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. NA - Not Applicable.
4. ND - Constituent was analyzed for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.



**Table 10**  
**April 2023 Assessment Monitoring Results**  
**RCPA Surface Impoundment**  
**Rush Island Energy Center, Jefferson County, MO**

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS						
		MW-B1	MW-B2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7(R)
<b>FIELD PARAMETERS</b>										
DATE	NA	4/27/2023	4/26/2023	4/24/2023	4/24/2023	4/25/2023	4/21/2023	4/21/2023	4/25/2023	4/25/2023
DISSOLVED OXYGEN	mg/L	0.34	0.12	0.18	0.08	0.04	0.04	0.14	3.30	0.15
pH	SU	6.98	7.19	7.86	10.55	9.03	7.24	7.40	7.25	7.20
REDOX POTENTIAL	mV	-132.0	-156.3	-70.9	-209.2	-149.2	-152.2	-161.1	-43.5	-161.0
SPECIFIC CONDUCTIVITY	mS/cm	1.167	0.720	0.935	1.089	1.242	0.811	0.695	0.537	0.684
TURBIDITY	NTU	3.49	3.58	0.87	2.21	2.03	0.63	2.07	3.23	1.75
<b>APPENDIX IV PARAMETERS</b>										
ANTIMONY, TOTAL	µg/L	ND	ND	0.13 J	3.4	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	18.3	2.8	3.0	268	34.2	9.1	1.7	0.59 J	123
BARIUM, TOTAL	µg/L	419	384	55.1	12.4	49.8	364	343	124	267
BERYLLIUM, TOTAL	µg/L	ND	0.23 J	ND	ND	ND	ND	ND	ND	0.34 J
CADMIUM, TOTAL	µg/L	ND	ND	ND	0.42 J	0.21 J	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	ND	0.68 J	0.38 J	0.78 J	0.46 J	0.40 J	0.46 J	0.40 J	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	0.92	0.51	0.53	0.21	0.27	ND
LEAD, TOTAL	µg/L	ND	ND	ND	10.5	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	54.4	9.9 J	ND	ND	11.9	31.9	4.2 J	ND	30.9
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	ND	3.1 J	73.7	139	507	40.4	ND	2.3 J	50.3
RADIUM [226 + 228]	pCi/L	1.955	ND	ND	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	2.3	0.45 J	ND	ND	0.41 J	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND

- NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
  2. J - Result is an estimated value.
  3. NA - Not Applicable.
  4. ND - Constituent was analyzed for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
  5. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.

**Table 11**  
**November 2023 Assessment Monitoring Results**  
**RCPA Surface Impoundment**  
**Rush Island Energy Center, Jefferson County, MO**

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS						
		MW-B1	MW-B2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7(R)
<b>FIELD PARAMETERS</b>										
DATE	NA	11/8/2023	11/8/2023	11/8/2023	11/8/2023	11/7/2023	11/6/2023	11/6/2023	11/8/2023	11/8/2023
DISSOLVED OXYGEN	mg/L	0.26	0.36	0.52	0.12	0.72	0.30	0.27	1.53	0.01
pH	SU	7.02	7.36	8.23	10.91	9.26	7.27	7.43	7.37	7.20
REDOX POTENTIAL	mV	-41.3	-78.5	91.4	-26.0	-4.3	-138.0	-151.9	-29.0	-66.0
SPECIFIC CONDUCTIVITY	mS/cm	1.250	0.704	0.788	1.080	1.191	0.763	0.631	0.527	0.683
TURBIDITY	NTU	4.95	4.97	2.02	1.41	2.93	0.90	1.81	2.52	2.04
<b>APPENDIX IV PARAMETERS</b>										
ANTIMONY, TOTAL	µg/L	ND	ND	0.14 J	3.3	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	22.6	3.4	3.9	277	39.1	8.0	1.5	0.90 J	123
BARIUM, TOTAL	µg/L	550	400	34.3	10.3	57.3	385	330	112	295
CHROMIUM, TOTAL	µg/L	ND	ND	ND	0.43 J	0.41 J	ND	ND	0.32 J	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	0.54 J	0.84	0.54	ND	0.39 J	ND
LEAD, TOTAL	µg/L	ND	ND	ND	4.6 J	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	64.3	11.8	ND	4.4 J	12.0	34.6	6.0 J	3.9 J	33.9
MOLYBDENUM, TOTAL	µg/L	ND	ND	145	256	722	37.7	ND	1.2 J	41.3
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	2.094	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	1.4	0.61 J	ND	ND	0.29 J	ND

**NOTES**

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. NA - Not Applicable.
4. ND - Constituent was analyzed for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.

**Table 12**  
**October-November 2022 Corrective Action Monitoring Results**  
**RCPA Surface Impoundment**  
**Rush Island Energy Center, Jefferson County, MO**

ANALYTE	UNITS	P05S	P10S	P16S	P17D	P17I	P17S	P19D	P19I	P19S	P21D	P21I	P21S	P22D	P22S	P29D	P29S	P30S	P31S
<b>FIELD PARAMETERS</b>																			
DATE	NA	11/1/2022	10/31/2022	11/3/2022	11/2/2022	11/2/2022	11/2/2022	11/2/2022	11/2/2022	11/2/2022	11/2/2022	11/2/2022	11/2/2022	11/3/2022	11/1/2022	11/3/2022	11/3/2022	11/3/2022	11/3/2022
DISSOLVED OXYGEN	mg/L	0.07	1.35	0.09	0.60	0.06	1.45	0.10	0.12	0.84	0.08	0.76	0.10	0.30	0.08	0.14	0.07	0.32	3.88
REDOX POTENTIAL	mV	72.1	-64.2	49.0	145.2	-46.0	-87.3	144.4	166.3	172.0	-146.9	-147.2	-125.3	177.9	126.8	-99.7	122.6	8.1	138.0
SPECIFIC CONDUCTIVITY	mS/cm	0.807	0.843	0.839	1.121	1.145	1.935	0.948	1.310	0.604	1.759	0.696	1.145	0.852	1.428	0.852	1.135	1.150	0.379
TURBIDITY	NTU	8.24	4.39	1.54	3.88	1.80	1.81	2.97	3.05	2.74	0.97	1.06	19.70	3.55	8.58	0.98	13.80	4.73	9.37
<b>APPENDIX III PARAMETERS</b>																			
BORON, TOTAL	µg/L	4,260	2,850	438	7,810	2,630	1,700	10,500	3,570	274	5,590	3,170	483	8,520	515	71.0 J	113	884	281
CALCIUM, TOTAL	µg/L	66,000	69,800	123,000	45,800	19,800	35,400	30,200	11,300	84,700	58,400	25,200	154,000	21,200	194,000	92,600	166,000	162,000	54,200
CHLORIDE, TOTAL	mg/L	25.3	18.5	4.6 J	27.8	29.1	74.1	26.3	23.7	1.6 J	433	49.2	11.5	28.8	46.0	67.5	35.9	40.9	3.2 J
pH	SU	7.12	6.84	6.60	7.63	8.80	8.82	7.62	9.36	6.98	7.39	7.83	6.66	7.47	6.67	6.77	6.88	6.74	7.32
SULFATE, TOTAL	mg/L	19.3	115	59.1	250	325 J	369	161	121	13.6	97.9	88.3	15.5	97.5	188	21.5	22.3	144	17.2
TOTAL DISSOLVED SOLIDS	mg/L	358	518	477	621	768	1,240	633	693	324	1,040	420	630	588	887	448	599	712	240
<b>APPENDIX IV PARAMETERS</b>																			
ANTIMONY, TOTAL	µg/L	ND	0.12 J	ND	ND	0.18 J	0.46 J	ND	0.47 J	ND	ND	ND	ND	0.15 J	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	164	11.9	1.0	1.1	29.1	40.1	0.62 J	28.5	11.6	0.52 J	5.0	125	9.9	2.0	0.96 J	22.7	1.2	29.5
BARIUM, TOTAL	µg/L	162	168	144	95.7	30.1	38.4	89.5	37.9	170	62.7	51.1	278	67.6	162	149	434	111	152
CHROMIUM, TOTAL	µg/L	0.39 J	0.80 J	ND	0.75 J	0.91 J	0.64 J	0.80 J	0.46 J	0.46 J	0.60 J	0.43 J	ND	2.2	ND	ND	ND	0.38 J	0.41 J
FLUORIDE, TOTAL	mg/L	0.33	0.46	ND	0.59	1.9	ND	2.2	0.43	0.33	1.4	0.90	0.24	2.5	ND	0.22	ND	0.27	0.34
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	13.6	11.2	23.0	35.1	ND	10.4	15.2	126	17.3	89.2	20.0	14.8	21.5	50.0	31.7	21.0	41.0	7.0 J
MOLYBDENUM, TOTAL	µg/L	7.8 J	101	9.4 J	663	165	26.9	892	100	4.2 J	417	203	ND	318	7.1 J	ND	ND	ND	ND
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	0.25 J	ND	0.46 J	0.24 J	1.0	0.44 J	0.31 J	0.28 J	ND	0.22 J	0.35 J	0.29 J	1.0	0.49 J	ND	ND	2.2	ND
<b>ADDITIONAL PARAMETERS</b>																			
ALKALINITY	mg/L	286	300	416	720	144	605	242	371	302	260	170	582	293	566	327	512	442	191
IRON, TOTAL	µg/L	9,420	1,900	52.0 J	2,460	243	401	1,840	ND	5,750	1,350	283	34,000	1,300	1,900	4,040	19,300	513	3,120
MAGNESIUM, TOTAL	µg/L	21,900	9,900	29,200	10,200	1,090	6,000	4,360	321	16,100	20,500	2,980	43,500	2,890	46,100	25,900	31,300	28,900	10,100
MANGANESE, TOTAL	µg/L	221	917	228	401	10.3	263	241	2.5 J	618	463	57.9	1,630	74.8	424	161	761	379	1,540
POTASSIUM, TOTAL	µg/L	5,770	4,190	4,050	7,360	3,200	2,100	3,570	30,400	4,720	6,820	5,600	4,260	4,240	7,520	3,870	5,380	7,030	3,440
SODIUM, TOTAL	µg/L	33,000	101,000	24,200	127,000	214,000 J	399,000	165,000	209,000	13,000	261,000	109,000	28,200	173,000	64,000	42,600	18,700	55,000	10,900

**NOTES**

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
4. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
5. NA - Not Applicable.

**Table 13**  
**April 2023 Corrective Action Monitoring Results**  
**RCPA Surface Impoundment**  
**Rush Island Energy Center, Jefferson County, MO**

ANALYTE	UNITS	P05S	P10S	P16S	P17D	P17I	P17S	P19D	P19I	P19S	P21D	P21I	P21S	P22D	P22S	P29D	P29S	P30S	P31S
<b>FIELD PARAMETERS</b>																			
DATE	NA	4/21/2023	4/25/2023	4/24/2023	4/24/2023	4/24/2023	4/24/2023	4/24/2023	4/24/2023	4/24/2023	4/24/2023	4/24/2023	4/24/2023	4/24/2023	4/24/2023	4/26/2023	4/26/2023	4/27/2023	4/21/2023
DISSOLVED OXYGEN	mg/L	0.13	0.51	1.93	0.40	0.53	0.56	0.05	0.01	0.57	0.33	0.41	0.16	0.32	0.17	0.06	0.10	0.14	0.36
REDOX POTENTIAL	mV	-162.6	23.2	77.8	-190.5	-211.6	-115.7	-203.7	-171.9	-72.7	-114.4	-2.5	-21.8	10.4	20.6	-118.4	-128.8	-33.4	-91.2
SPECIFIC CONDUCTIVITY	mS/cm	0.646	0.925	0.565	0.893	1.103	1.072	0.933	1.002	0.773	2.650	0.699	0.863	0.851	1.218	1.020	1.227	1.071	0.418
TURBIDITY	NTU	18.2	4.72	1.46	1.16	2.12	13.9	2.67	1.03	7.32	0.44	1.01	9.97	1.24	17.3	1.03	10.5	4.48	7.61
<b>APPENDIX III PARAMETERS</b>																			
BORON, TOTAL	µg/L	4,390	1,410	75.9 J	7,770	2,480	2,820	9,590	3,630	238	4,560	3,890	145	9,490	516	83.0 J	99.5 J	830	318
CALCIUM, TOTAL	µg/L	64,700	138,000	90,500	44,000	9,590	107,000	34,600	13,700	130,000	131,000	30,000	130,000	22,100	171,000	93,300	182,000	136,000	59,900
CHLORIDE, TOTAL	mg/L	24.7	11.9	1.1 J	26.6	50.2	55.9	57.2	50.4	1.1	894	99.5 J	2.1	28.8	60.3	112	36.2	48.2	3.3
pH	SU	7.19	6.82	7.05	7.71	10.16	7.15	7.67	9.30	6.77	7.70	7.76	6.75	6.87	6.49	7.21	6.83	7.05	7.35
SULFATE, TOTAL	mg/L	2.5	77.6	13.4	256	310	243	191	169	63.2	150	96.6	25.2	96.4	178	27.8	28.5	128	21.8
TOTAL DISSOLVED SOLIDS	mg/L	355	599	329	605	770	748	651	682	462	1,710	431	484	583	776	900	705	692	255
<b>APPENDIX IV PARAMETERS</b>																			
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	0.31 J	0.18 J	ND	0.44 J	ND	ND	ND	ND	0.19 J	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	210	2.3	1.1	1.2	49.5	29.8	0.64 J	28.5	8.2	0.57 J	5.2	23.3	10.3	6.0	1.1	46.2	1.2	22.0
BARIUM, TOTAL	µg/L	211	211	64.3	100	15.5	118	109	50.4	224	161	59.4	228	69.4	156	158	487	97.2	145
BERYLLIUM, TOTAL	µg/L	0.25 J	ND	ND	ND	ND	ND	ND	ND	0.17 J	ND	ND	ND	0.14 J	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.15 J	ND	0.25 J	0.33 J	0.23 J	0.29 J	0.094 J	ND	0.15 J	0.11 J	0.065 J	0.17 J	0.093 J	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	0.73 J	0.66 J	0.36 J	0.35 J	0.92 J	0.67 J	0.53 J	0.46 J	0.32 J	0.48 J	0.55 J	0.31 J	1.6	ND	0.76 J	ND	0.31 J	ND
COBALT, TOTAL	µg/L	ND	3.6 J	ND	ND	ND	1.4 J	ND	ND	4.1 J	ND	ND	ND	ND	ND	ND	2.2 J	ND	ND
FLUORIDE, TOTAL	mg/L	0.35	ND	0.31 J	0.33	1.5	0.51	1.6	0.32	ND	0.67	0.65	ND	2.0	ND	ND	ND	ND	0.44
LEAD, TOTAL	µg/L	ND	ND	ND	ND	7.9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	14.5	25.8	17.6	35.5	ND	29.8	20.3	118	32.0	191	27.4	14.4	24.0	54.6	46.5	28.3	34.1	8.3 J
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	6.5 J	49.3	10.1 J	679	162	97.6	793	193	5.9 J	395	298	3.0 J	363	13.6 J	1.0 J	1.5 J	5.6 J	9.7 J
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.779	ND	ND
SELENIUM, TOTAL	µg/L	0.21 J	ND	2.5	0.21 J	1.5	0.81 J	0.29 J	0.49 J	ND	ND	0.37 J	ND	0.97 J	0.23 J	ND	ND	0.23 J	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>ADDITIONAL PARAMETERS</b>																			
ALKALINITY	mg/L	290	458	322	261	187	312	240	325	392	249	171	441	292	465	322	587	374	199
IRON, FERRIC, TOTAL	mg/L	11.7	0.45	0.086 J	2.4	0.15	4.9	1.8	0.034 J	4.5	3.0	0.18	12.3	1.5	6.6	3.9	18.3	0.82	3.9
IRON, FERROUS, TOTAL	mg/L	0.24 J	ND	ND	0.13 J	0.098 J	0.11 J	0.37 J	ND	ND	0.11 J	0.13 J	ND	ND	0.14 J	ND	0.14 J	ND	ND
IRON, TOTAL	µg/L	11,900	447	85.5 J	2,510	246	5,000	2,140	74.0	4,540	3,100	307	12,300	1,450	6,790	3,960	18,500	817	3,930
MAGNESIUM, TOTAL	µg/L	22,600	19,200	23,500	9,350	208	24,100	4,950	316	22,100	48,100	3,220	27,000	3,100	38,100	26,800	40,600	22,200	10,600
MANGANESE, TOTAL	µg/L	321	2,390	2.9 J	397	5.0	2,140	298	2.6 J	1,050	1,000	66.0	2,080	75.0	779	151	863	330	1,320
POTASSIUM, TOTAL	µg/L	5,840	5,920	1,490	7,190	2,050	3,910	3,740	35,100	6,530	11,600	6,130	3,590	4,470	7,260	4,670	6,390	6,410	3,910
SODIUM, TOTAL	µg/L	25,000	58,800	4,980	135,000 J	236,000	114,000	181,000	200,000	11,300	462,000	116,000	16,500	187,000	59,700	67,900	18,600	56,500	11,100
SULFIDE, TOTAL	mg/L	ND	ND	ND	0.040 J	3.3	ND	0.023 J	0.50	ND	ND	0.046 J	ND	ND	ND	ND	ND	ND	0.021 J

- NOTES
- Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
  - J - Result is an estimated value.
  - ND - Constituent was analyzed for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
  - Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
  - NA - Not Applicable.

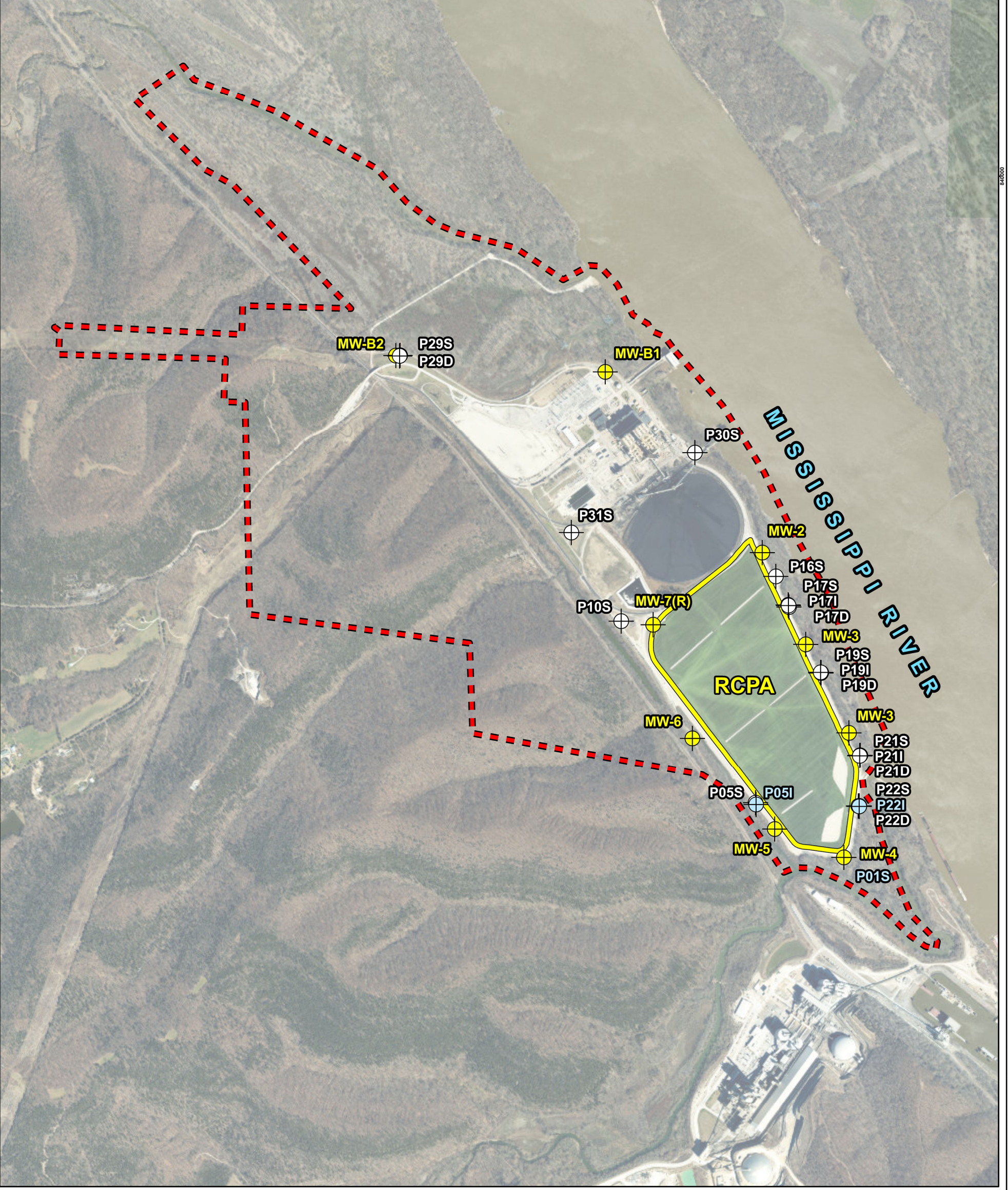
**Table 14  
November 2023 Corrective Action Monitoring Results  
RCPA Surface Impoundment  
Rush Island Energy Center, Jefferson County, MO**

ANALYTE	UNITS	P05S	P10S	P16S	P17D	P17I	P17S	P19D	P19I	P19S	P21D	P21I	P21S	P22D	P22S	P29D	P29S	P30S	P31S
<b>FIELD PARAMETERS</b>																			
DATE	NA	11/6/2023	NS	11/8/2023	11/8/2023	11/8/2023	11/8/2023	11/7/2023	11/7/2023	11/7/2023	11/7/2023	11/7/2023	11/7/2023	11/6/2023	11/6/2023	11/9/2023	11/9/2023	11/8/2023	NS
DISSOLVED OXYGEN	mg/L	0.14	NS	0.45	0.64	0.11	2.21	1.01	0.20	1.28	0.52	0.81	0.15	0.73	0.13	1.26	0.25	2.96	NS
REDOX POTENTIAL	mV	-153.1	NS	104.2	-164.1	-99.3	114.9	-153.9	-77.1	12.8	-45.2	-100.3	-130.5	-87.0	-28.2	36.1	-86.2	106.7	NS
SPECIFIC CONDUCTIVITY	mS/cm	0.645	NS	0.791	0.906	1.176	1.882	1.060	0.915	0.588	2.647	0.788	0.946	0.917	1.223	1.023	0.843	1.098	NS
TURBIDITY	NTU	17.70	NS	3.83	1.33	2.33	4.48	0.72	1.00	1.83	1.19	0.94	16.00	4.03	2.90	0.68	9.87	4.96	NS
<b>APPENDIX III PARAMETERS</b>																			
BORON, TOTAL	µg/L	4,410	NS	615	8,200	2,570	1,760	9,710	3,790	195	4,270	4,500	614	9,310	601	99.8 J	85.0 J	927	NS
CALCIUM, TOTAL	µg/L	67,100	NS	116,000	46,300	10,500	121,000	42,400	19,300	96,300	111,000	36,900	141,000	21,700	184,000	91,600	154,000	169,000	NS
CHLORIDE, TOTAL	mg/L	25.2	NS	5.0 J	30.6	73.5 J	61.0 J	75.2	16.3	1.2	711	75.0	14.5	28.9	33.8	156	31.3	39.0	NS
pH	SU	7.25	NS	7.22	7.84	10.30	7.12	7.79	9.23	7.00	7.45	8.22	6.97	7.55	6.83	7.34	7.05	7.08	NS
SULFATE, TOTAL	mg/L	19.7	NS	64.3 J	265	347	299	190	104	31.9	123 J	84.8	7.1	112	150	31.1	5.0	129	NS
TOTAL DISSOLVED SOLIDS	mg/L	360	NS	486 J	645	825	1,320	753	685	127	1,720	511	588	595	816	548	533	745	NS
<b>APPENDIX IV PARAMETERS</b>																			
ANTIMONY, TOTAL	µg/L	ND	NS	0.13 J	ND	0.37 J	0.36 J	ND	0.16 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
ARSENIC, TOTAL	µg/L	195	NS	1.8	1.2	39.7	24.5	0.54 J	29.2	8.1	0.56 J	6.0	97.9	11.2	2.9	1.0	24.4	1.3	NS
BARIUM, TOTAL	µg/L	210	NS	128	100	16.9	139	128	69.4	177	126	75.4	279	68.4	160	156	382	107	NS
CHROMIUM, TOTAL	µg/L	0.34 J	NS	ND	ND	0.75 J	0.37 J	ND	0.38 J	0.41 J	0.33 J	0.40 J	ND	2.0 J	0.41 J	ND	ND	0.32 J	NS
FLUORIDE, TOTAL	mg/L	0.34	NS	ND	0.32 J	1.3 J	ND	1.6	0.47	0.33	0.90	0.86	0.32	2.1	ND	ND	ND	ND	NS
LEAD, TOTAL	µg/L	ND	NS	ND	ND	6.5 J	ND	ND	ND	ND	ND	ND	ND	6.4 J	ND	ND	ND	ND	NS
LITHIUM, TOTAL	µg/L	15.2	NS	26.7	40.2	4.4 J	36.7	20.9	134	19.6	164	24.0	19.6	24.0	54.6	59.5	19.4	47.5	NS
MOLYBDENUM, TOTAL	µg/L	6.0 J	NS	16.3 J	687	145	14.0 J	690	68.5	5.5 J	245	319	2.5 J	335	8.9 J	ND	ND	ND	NS
RADIUM [226 + 228]	pCi/L	ND	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS
SELENIUM, TOTAL	µg/L	0.23 J	NS	0.27 J	0.26 J	1.7	5.9	0.20 J	0.20 J	ND	ND	0.44 J	0.22 J	1.2 J	0.27 J	ND	ND	10.2	NS
<b>ADDITIONAL PARAMETERS</b>																			
ALKALINITY	mg/L	308 J	NS	396	165	172	696	224 J	354 J	308 J	228 J	200 J	512 J	306 J	526 J	303	475	449	NS
IRON, TOTAL	µg/L	11,000	NS	301	2,330	235	1,260	2,310	31.9 J	4,780	2,420	402	28,700	1,480	3,520	3,290	16,500	487	NS
MAGNESIUM, TOTAL	µg/L	23,300	NS	29,900	9,970	280	25,500	6,310	420	17,600	39,000	4,620	39,700	3,170	45,200	29,700	27,800	29,200	NS
MANGANESE, TOTAL	µg/L	263	NS	65.5	389	4.8 J	3,160	310	2.7 J	777	787	82.9	1,310	67.5	532	118	707	111	NS
POTASSIUM, TOTAL	µg/L	5,930	NS	3,180	7,500	2,290	2,600	4,190	43,200	4,920	10,300	6,760	4,360	4,330	7,600	5,840	4,820	6,540	NS
SODIUM, TOTAL	µg/L	34,200	NS	31,200	147,000	258,000	328,000	202,000 J	180,000	8,930	400,000	142,000	32,500	183,000	64,100	89,800	18,900	55,100	NS

- NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
  2. J - Result is an estimated value.
  3. ND - Constituent was analyzed for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
  4. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
  5. NA - Not Applicable.
  6. NS - Not Sampled.

# Figures

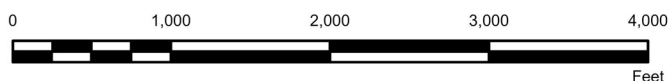




- LEGEND**
- Rush Island Energy Center Property Boundary
  - RCPA Surface Impoundment
  - Monitoring Well Networks**
  - Corrective Action Monitoring Well
  - RCPA Detection and Assessment Monitoring Well
  - Monitoring Well Used for Water Levels Only

**NOTES**  
1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.

**REFERENCES**  
1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.  
2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



**RUSH ISLAND ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND WELL LOCATION MAP**

PROJECT  
CCR GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER



DESIGN	GTM	YYYY-MM-DD	2023-09-22
PREPARED	GTM	PROJECT No.	23008
REVIEW	JSI	<b>FIGURE 1</b>	
APPROVED	MNH		



# Appendix A

## Laboratory Analytical Data

January 18, 2023

Jeffrey Ingram  
WSP Golder  
701 Emerson Road  
Suite 250  
Saint Louis, MO 63141

RE: Project: AMEREN RIEC RCPA  
Pace Project No.: 60419382

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on January 07, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church  
jamie.church@pacelabs.com  
314-838-7223  
Project Manager

Enclosures

cc: Mark Haddock, Golder Associates  
Lisa Meyer, Ameren  
Grant Morey, WSP Golder  
Ann Muehlfarth, WSP Golder  
Eric Schneider, WSP Golder



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## CERTIFICATIONS

Project: AMEREN RIEC RCPA

Pace Project No.: 60419382

---

### **Pace Analytical Services Kansas**

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 22-031-0

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-21-15

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

---

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## SAMPLE SUMMARY

Project: AMEREN RIEC RCPA

Pace Project No.: 60419382

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60419382001	R-MW-1	Water	01/05/23 09:35	01/07/23 07:00
60419382002	R-RCPA-DUP-1	Water	01/05/23 00:00	01/07/23 07:00
60419382003	R-RCPA-FB-1	Water	01/05/23 09:40	01/07/23 07:00

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60419382

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60419382001	R-MW-1	EPA 300.0	RKA	1	PASI-K
60419382002	R-RCPA-DUP-1	EPA 300.0	RKA	1	PASI-K
60419382003	R-RCPA-FB-1	EPA 300.0	RKA	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60419382

---

**Sample: R-MW-1**      **Lab ID: 60419382001**      Collected: 01/05/23 09:35      Received: 01/07/23 07:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Fluoride	<b>0.16J</b>	mg/L	0.20	0.12	1		01/09/23 22:55	16984-48-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60419382

---

**Sample: R-RCPA-DUP-1**      **Lab ID: 60419382002**      Collected: 01/05/23 00:00      Received: 01/07/23 07:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City									
Fluoride	<b>0.13J</b>	mg/L	0.20	0.12	1		01/09/23 23:49	16984-48-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60419382

---

**Sample: R-RCPA-FB-1**      **Lab ID: 60419382003**      Collected: 01/05/23 09:40      Received: 01/07/23 07:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City									
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		01/10/23 00:02	16984-48-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA  
Pace Project No.: 60419382

QC Batch: 826414      Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0      Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60419382001, 60419382002, 60419382003

METHOD BLANK: 3282913      Matrix: Water  
Associated Lab Samples: 60419382001, 60419382002, 60419382003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.12	0.20	0.12	01/09/23 17:34	

METHOD BLANK: 3284283      Matrix: Water  
Associated Lab Samples: 60419382001, 60419382002, 60419382003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.12	0.20	0.12	01/10/23 08:51	

METHOD BLANK: 3284437      Matrix: Water  
Associated Lab Samples: 60419382001, 60419382002, 60419382003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.12	0.20	0.12	01/11/23 09:26	

LABORATORY CONTROL SAMPLE: 3282914

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	100	90-110	

LABORATORY CONTROL SAMPLE: 3284284

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	99	90-110	

LABORATORY CONTROL SAMPLE: 3284438

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.6	103	90-110	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60419382

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3282915												3282916	
Parameter	Units	60419381002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Fluoride	mg/L	<0.12	2.5	2.5	2.7	2.7	108	106	80-120	2	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3282918												3282919	
Parameter	Units	60419382001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Fluoride	mg/L	0.16J	2.5	2.5	2.9	2.9	109	111	80-120	1	15		

SAMPLE DUPLICATE: 3282917						
Parameter	Units	60419381002 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	<0.12	<0.12		15	

SAMPLE DUPLICATE: 3282920						
Parameter	Units	60419382001 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	0.16J	<0.12		15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## QUALIFIERS

Project: AMEREN RIEC RCPA

Pace Project No.: 60419382

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: AMEREN RIEC RCPA  
Pace Project No.: 60419382

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60419382001	R-MW-1	EPA 300.0	826414		
60419382002	R-RCPA-DUP-1	EPA 300.0	826414		
60419382003	R-RCPA-FB-1	EPA 300.0	826414		

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



DC#\_Title: ENV-FRM-LENE-0009\_Sample C

Revision: 2

Effective Date: 01/12/2022

WO#: 60419382



Client Name: Golder Associates v/s A, Inc.

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other  zpc

Thermometer Used: 1296 Type of Ice:  Blue  None

Cooler Temperature (°C): As-read 1.6 Corr. Factor -0.1 Corrected 1.6

Date and initials of person examining contents: 1/7/23

Temperature should be above freezing to 6°C 2-4

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

**CHAIN-OF-CUSTODY / Analytical Request Document**

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section A</b> Required Client Information:			<b>Section B</b> Required Project Information:			<b>Section C</b> Invoice Information:			
Company:	Golder Associates USA, Inc.		Report To:	Jeffrey Ingram		Attention:			
Address:	701 Emerson Rd, Ste 250 Creve Coeur, MO 63141		Copy To:	Eric Schneider, Grant Morey		Company Name:	Golder Associates USA, Inc.		
Email To:	jeffrey_ingram@golder.com		Purchase Order No.:			Address:			
Phone:	636-724-9191		Project Name:	Ameren - LCRA		Pace Quote Reference:			
Requested Due Date/TAT:	Standard		Project Number:	GL153140604		Pace Project Manager:	Jamie Church		
						Site Location STATE:	MO		
						REGULATORY AGENCY	<input type="checkbox"/> NPDES <input checked="" type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER		

Page: | of (

ITEM #	Section D Required Client Information		Valid Matrix Codes		COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.														
	MATRIX	CODE	DRINKING WATER	WASTE WATER	PRODUCT	LIQUID			SOLID	DATE	TIME	DATE	TIME	HNO <sub>3</sub>	HCl					NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	Other	Y/N	Calcium	Chloride	Fluoride	Sulfate	TDS				
1	R-MW-1	WT	G				11/17/23	0935	1	X																							
2	R-RCRA-DUP-1	WT	G						1	X																							
3	R-RCRA-FB-1	WT	G					0940	1	X																							
4	R-RCRA-MS-1	WT	G					0935	1	X																							
5	R-RCRA-MSD-1	WT	G					0935	1	X																							
6		WT	G																														
7		WT	G																														
8		WT	G																														
9		WT	G																														
10		WT	G																														
11		WT	G																														
12		WT	G																														

60419382

MS MSD taken  
A-MW-1

11/16/23 1050  
11/16/23 1055

Jay Clark  
Eric Schneider

<b>Section E</b> SAMPLER NAME AND SIGNATURE			<b>Section F</b> SAMPLE CONDITIONS		
PRINT Name of SAMPLER:		Eric Schneider		Received on	
SIGNATURE of SAMPLER:				Sealed Cooler (Y/N)	
DATE Signed (MM/DD/YYYY):		11/16/23		Ice (Y/N)	
		11/16/23 1050		Custody (Y/N)	
		11/16/23 1055		Temp In °C	
				Samples Intact (Y/N)	







## MEMORANDUM

**DATE** January 20, 2023

**Project No.** 153140604

**TO** Project File  
WSP USA Inc.

**CC** Amanda Derhake, Jeff Ingram

**FROM** Rahel Pommerenke

**EMAIL** rahel.pommerenke@wsp.com

### **DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA – VERIFICATION SAMPLING - DATA PACKAGE 60419382**

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was detected in a sample result between the MDL and the PQL the results were recorded at the detection value and qualified as estimates (J).
- When duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: WSP USA Inc.  
 Project Name: Ameren REC - RCPA VS  
 Reviewer: R.Pommerenke

Project Manager: J. Ingram  
 Project Number: 153140604  
 Validation Date: 1/20/2023

Laboratory: Pace Analytical Services

SDG #: 60419382

Analytical Method (type and no.): EPA 300.0 (Anions)

Matrix:  Air  Soil/Sed.  Water  Waste

Sample Names R-MW-1, R-RCPA-DUP-1, R-RCPA-FB-1

**NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).**

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>1/5/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>JAB</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See notes.</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Sp.Cond, ORP, Temp, DO, Turb</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were analytes detected in the method blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b) Were analytes detected in the field blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	R-RCPA-FB-1 @ R-MW-1
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R-RCPA-DUP-1 @ R-MW-1
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.

<b>Blind Standards</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was MS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Comments/Notes:**

Duplicates:

R-RCPA-DUP-1 @ R-MW-1: RPD for Fluoride (20.7%) exceeds control limit (20%): qualified as estimate.

Lab Duplicate 3282920: Fluoride detected in parent sample, and ND in lab duplicate: qualified as estimate. Associated with R-MW-1.

# QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

**Data Qualification:**

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-MW-1	Fluoride	0.16	J	DUP exceeds RPD limit; Detected in parent sample, ND in lab dup.
R-RCPA-DUP-1	Fluoride	0.13	J	DUP exceeds RPD limit.

Signature: \_\_\_\_\_ *Rahul R...* \_\_\_\_\_ Date: 1/20/2023

January 10, 2023

Jeffrey Ingram  
WSP Golder  
701 Emerson Road  
Suite 250  
Saint Louis, MO 63141

RE: Project: AMEREN RIEC RCPA  
Pace Project No.: 60419383

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on January 07, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church  
jamie.church@pacelabs.com  
314-838-7223  
Project Manager

Enclosures

cc: Mark Haddock, Golder Associates  
Lisa Meyer, Ameren  
Grant Morey, WSP Golder  
Ann Muehlfarth, WSP Golder  
Eric Schneider, WSP Golder



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## CERTIFICATIONS

Project: AMEREN RIEC RCPA

Pace Project No.: 60419383

---

### **Pace Analytical Services Kansas**

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 22-031-0

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-21-15

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

---

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## SAMPLE SUMMARY

Project: AMEREN RIEC RCPA

Pace Project No.: 60419383

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60419383001	R-P-19I	Water	01/05/23 10:30	01/07/23 07:00

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60419383

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60419383001	R-P-19I	EPA 200.7	MA1	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60419383

---

**Sample: R-P-19I**      **Lab ID: 60419383001**    Collected: 01/05/23 10:30    Received: 01/07/23 07:00    Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Lithium	<b>118</b>	ug/L	10.0	5.6	1	01/09/23 14:15	01/10/23 10:49	7439-93-2	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60419383

QC Batch: 826478

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60419383001

METHOD BLANK: 3283061

Matrix: Water

Associated Lab Samples: 60419383001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Lithium	ug/L	<5.6	10.0	5.6	01/10/23 10:25	

LABORATORY CONTROL SAMPLE: 3283062

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lithium	ug/L	1000	916	92	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3283063 3283064

Parameter	Units	60419381002		3283063		3283064		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Lithium	ug/L	43.2	1000	1000	1060	994	101	95	70-130	6	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## QUALIFIERS

Project: AMEREN RIEC RCPA

Pace Project No.: 60419383

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA

Pace Project No.: 60419383

---

<b>Lab ID</b>	<b>Sample ID</b>	<b>QC Batch Method</b>	<b>QC Batch</b>	<b>Analytical Method</b>	<b>Analytical Batch</b>
60419383001	R-P-19I	EPA 200.7	826478	EPA 200.7	826514

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

WO#: 60419383



DC#\_Title: ENV-FRM-LENE-0009\_Sample Condi

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Golder Associates USA Inc.

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other  ZPLS

Thermometer Used: T296 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 1-6 Corr. Factor -0.1 Corrected 1.6  
Temperature should be above freezing to 6°C 2-4 2-4

Date and initials of person examining contents: 1/19/23 DA

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>6787</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: Golder Associates USA Inc.		Report To: Jeffrey Ingram		Attention:	
Address: 701 Emerson Rd, Ste 250 Creve Coeur, MO 63141		Copy To: Eric Schnieder, Grant Morey		Company Name: Golder Associates USA, Inc.	
Email To: jeffrey_ingram@golder.com		Purchase Order No.:		Address:	
Phone: 636-724-9191 Fax: 636-724-9323		Project Name: Ameren - RCRA Confirmation		Site Location	
Requested Due Date/TAT: Standard		Project Number: GL153140604		STATE: MO	
		Jamie Church Pace Profile #: 9285			
		Pace Quote Reference:			
		Pace Project Manager:			
		Pace Profile #:			

Page: | of |

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID OL OIL WP AR OT TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		COMPOSITE START	COMPOSITE END/GRAB									
1				G	WT	Gil Clark	11/16/23	10:50	Gil Clark	11/16/23	10:50	Y
2				G	WT							
3				G	WT							
4				G	WT							
5				G	WT							
6				G	WT							
7				G	WT							
8				G	WT							
9				G	WT							
10				G	WT							
11				G	WT							
12				G	WT							

700.7 Metals = Lithium

Eric Schnieder

Eric Schnieder

01/06/23

DATE Signed (MM/DD/YY):

SIGNATURE OF SAMPLER:

PRINT Name of SAMPLER:

SAMPLER NAME AND SIGNATURE

Temp in °C

Received on

Ice (Y/N)

Custody Sealed Cooler (Y/N)

Samples Intact (Y/N)

Client: Golder Associates USA Inc.

Profile # 9285

Site: Ameren - RCRA Contamination Sample

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT																													
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	BP1C 1L NaOH plastic	I Wipe/Swab
DG9H	40mL HCl amber vial	BP1N 1L HNO3 plastic	SP5T 120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U 1L unpreserved plastic	AF Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U	40mL amber unpreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H	40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	BP2U 500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	
BG1U	1liter unpres glass	BP3F 250mL HNO3 plastic - field filtered	WT Water
BG3H	250mL HCL Clear glass	BP3N 250mL HNO3 plastic	SL Solid
BG3U	250mL Unpres Clear glass	BP3U 250mL unpreserved plastic	NAL Non-aqueous Liquid
WGDU	16oz clear soil jar	BP3S 250mL H2SO4 plastic	OL OIL
		BP3Z 250mL NaOH, Zn Acetate	WP Wipe
		BP4U 125mL unpreserved plastic	DW Drinking Water
		BP4N 125mL HNO3 plastic	
		BP4S 125mL H2SO4 plastic	
		WPDU 16oz unpreserved plastic	

Work Order Number: 60419383





## MEMORANDUM

**DATE** January 13, 2023

**Project No.** 153140604.0002

**TO** Project File  
WSP USA Inc.

**CC** Amanda Derhake, Jeff Ingram

**FROM** Rahel Pommerenke

**EMAIL** rahel.pommerenke@wsp.com

### **DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA VERIFICATION SAMPLING - DATA PACKAGE 60419383**

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- None.

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: WSP USA Inc.  
 Project Name: Ameren REC - RCPA VS  
 Reviewer: R.Pommerenke

Project Manager: J. Ingram  
 Project Number: 153140604.0002  
 Validation Date: 1/13/2023

Laboratory: Pace Analytical Services

SDG #: 60419383

Analytical Method (type and no.): EPA 200.7 (Total Metals)

Matrix:  Air  Soil/Sed.  Water  Waste

Sample Names R-P-19I

**NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).**

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>1/5/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>JAB</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Sp.Cond, ORP, Temp, DO, Turb</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>

Note Deficiencies: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were analytes detected in the method blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
b) Were analytes detected in the field blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

<b>Blind Standards</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was MS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
b) Was MSD accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD [6%] < 20%

**Comments/Notes:**

---



---



---



---



---



---



---



---



---



---

## QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature:                 *Rahul Ram*                

Date:                 1/13/2023

May 25, 2023

Mark Haddock  
Rocksmith Geoengineering, LLC.  
5233 Roanoke Drive  
Saint Charles, MO 63304

RE: Project: AMEREN RCPA  
Pace Project No.: 60426950

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between April 22, 2023 and April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church  
jamie.church@pacelabs.com  
314-838-7223  
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.  
Grant Morey, Rocksmith Geoengineering, LLC.



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## CERTIFICATIONS

Project: AMEREN RCPA

Pace Project No.: 60426950

---

### **Pace Analytical Services Pennsylvania**

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

---

### **Pace Analytical Services Kansas**

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 88-00679

Illinois Certification #: 2000302023-5

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-22-16

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

---

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## SAMPLE SUMMARY

Project: AMEREN RCPA

Pace Project No.: 60426950

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60426950001	R-MW-4	Water	04/21/23 13:30	04/22/23 04:59
60426950002	R-MW-5	Water	04/21/23 12:36	04/22/23 04:59
60426950003	R-DUP-1	Water	04/21/23 08:00	04/22/23 04:59
60426950004	R-MW-1	Water	04/24/23 09:08	04/26/23 05:44
60426950005	R-MW-2	Water	04/24/23 15:15	04/26/23 05:44
60426950006	R-MW-3	Water	04/25/23 09:43	04/26/23 05:44
60426950007	R-MW-6	Water	04/25/23 10:46	04/26/23 05:44
60426950008	R-MW-7(r)	Water	04/25/23 12:18	04/26/23 05:44
60426950009	R-FB-1	Water	04/25/23 12:28	04/26/23 05:44
60426950010	R-MS-1	Water	04/25/23 10:46	04/26/23 05:44
60426950011	R-MSD-1	Water	04/25/23 10:46	04/26/23 05:44
60426950012	R-MW-B2	Water	04/26/23 10:02	04/28/23 05:00
60426950013	R-MW-B1	Water	04/27/23 09:33	04/28/23 05:00

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA

Pace Project No.: 60426950

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60426950001	R-MW-4	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
60426950002	R-MW-5	EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
60426950003	R-DUP-1	SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	CRN2, RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
60426950004	R-MW-1	SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA

Pace Project No.: 60426950

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60426950005	R-MW-2	EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		60426950006	R-MW-3	SM 3500-Fe B#4	BLA
SM 3500-Fe B#4	MLD			1	PASI-K
SM 4500-S-2 D	MLD			1	PASI-K
EPA 300.0	RKA			3	PASI-K
EPA 200.7	JXD			13	PASI-K
EPA 200.8	JGP			6	PASI-K
EPA 7470	MRV			1	PASI-K
EPA 903.1	JLJ			1	PASI-PA
EPA 904.0	JJS1			1	PASI-PA
SM 2320B	JS2			1	PASI-K
SM 2540C	CRN2			1	PASI-K
SM 3500-Fe B#4	BLA			1	PASI-K
SM 3500-Fe B#4	MLD			1	PASI-K
SM 4500-S-2 D	MLD			1	PASI-K
60426950007	R-MW-6			EPA 300.0	RKA
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA

Pace Project No.: 60426950

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60426950008	R-MW-7(r)	SM 3500-Fe B#4	MLD	1	PASI-K		
		SM 4500-S-2 D	MLD	1	PASI-K		
		EPA 300.0	RKA	3	PASI-K		
		EPA 200.7	JXD	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	MRV	1	PASI-K		
		EPA 903.1	JLJ	1	PASI-PA		
		EPA 904.0	JJS1	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
		SM 2540C	CRN2	1	PASI-K		
60426950009	R-FB-1	SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	MLD	1	PASI-K		
		SM 4500-S-2 D	MLD	1	PASI-K		
		EPA 300.0	RKA	3	PASI-K		
		EPA 200.7	JXD	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	MRV	1	PASI-K		
		EPA 903.1	JLJ	1	PASI-PA		
		EPA 904.0	JJS1	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
60426950010	R-MS-1	SM 2540C	CRN2	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	MLD	1	PASI-K		
		SM 4500-S-2 D	MLD	1	PASI-K		
		EPA 300.0	RKA	3	PASI-K		
		EPA 903.1	CLM	1	PASI-PA		
		EPA 904.0	JJS1	1	PASI-PA		
		60426950011	R-MSD-1	EPA 903.1	CLM	1	PASI-PA
				EPA 904.0	JJS1	1	PASI-PA
		60426950012	R-MW-B2	EPA 200.7	JXD	13	PASI-K
EPA 200.8	JGP			6	PASI-K		
EPA 7470	MRV			1	PASI-K		
EPA 903.1	CLM			1	PASI-PA		
EPA 904.0	JJS1			1	PASI-PA		
SM 2320B	JS2			1	PASI-K		
SM 2540C	BLA			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA

Pace Project No.: 60426950

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60426950013	R-MW-B1	SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample:** R-MW-4      **Lab ID:** 60426950001      Collected: 04/21/23 13:30      Received: 04/22/23 04:59      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	364	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 09:29	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 09:29	7440-41-7	
Boron	1980	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 09:29	7440-42-8	
Calcium	102000	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 09:29	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 09:29	7440-48-4	
Iron	8010	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 09:29	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 09:29	7439-92-1	
Lithium	31.9	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 09:29	7439-93-2	
Magnesium	20900	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 09:29	7439-95-4	
Manganese	431	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 09:29	7439-96-5	
Molybdenum	40.4	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 09:29	7439-98-7	
Potassium	5360	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 09:29	7440-09-7	
Sodium	35000	ug/L	500	115	1	05/02/23 07:10	05/11/23 09:29	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 17:08	7440-36-0	
Arsenic	9.1	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 17:08	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 17:08	7440-43-9	
Chromium	0.40J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 17:08	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 17:08	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 17:08	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 11:49	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	420	mg/L	20.0	10.5	1		04/27/23 10:23		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	458	mg/L	10.0	10.0	1		04/28/23 12:42		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.9	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.098J	mg/L	0.20	0.041	1		04/26/23 14:29	15438-31-0	H6

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

---

**Sample: R-MW-4**      **Lab ID: 60426950001**      Collected: 04/21/23 13:30      Received: 04/22/23 04:59      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		04/28/23 15:14	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>13.4</b>	mg/L	1.0	0.53	1		05/08/23 14:14	16887-00-6	
Fluoride	<b>0.53</b>	mg/L	0.20	0.12	1		05/08/23 14:14	16984-48-8	
Sulfate	<b>4.0</b>	mg/L	1.0	0.55	1		05/08/23 14:14	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

Sample: R-MW-5 Lab ID: 60426950002 Collected: 04/21/23 12:36 Received: 04/22/23 04:59 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	343	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 09:31	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 09:31	7440-41-7	
Boron	55.5J	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 09:31	7440-42-8	
Calcium	118000	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 09:31	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 09:31	7440-48-4	
Iron	8870	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 09:31	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 09:31	7439-92-1	
Lithium	4.2J	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 09:31	7439-93-2	
Magnesium	15900	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 09:31	7439-95-4	
Manganese	334	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 09:31	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 09:31	7439-98-7	
Potassium	1960	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 09:31	7440-09-7	
Sodium	4290	ug/L	500	115	1	05/02/23 07:10	05/11/23 09:31	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 17:15	7440-36-0	
Arsenic	1.7	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 17:15	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 17:15	7440-43-9	
Chromium	0.46J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 17:15	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 17:15	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 17:15	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 11:51	7439-97-6	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	345	mg/L	20.0	10.5	1		04/27/23 10:30		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	397	mg/L	10.0	10.0	1		04/28/23 12:42		
<b>Iron, Ferric (Calculation)</b>		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	8.9	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		04/26/23 14:29	15438-31-0	1e,H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

---

**Sample: R-MW-5**      **Lab ID: 60426950002**      Collected: 04/21/23 12:36      Received: 04/22/23 04:59      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>0.045J</b>	mg/L	0.050	0.016	1		04/28/23 15:15	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>2.9</b>	mg/L	1.0	0.53	1		05/08/23 14:40	16887-00-6	
Fluoride	<b>0.21</b>	mg/L	0.20	0.12	1		05/08/23 14:40	16984-48-8	
Sulfate	<b>23.5</b>	mg/L	2.0	1.1	2		05/10/23 01:29	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-DUP-1**      **Lab ID: 60426950003**      Collected: 04/21/23 08:00      Received: 04/22/23 04:59      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	377	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 09:33	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 09:33	7440-41-7	
Boron	2030	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 09:33	7440-42-8	
Calcium	104000	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 09:33	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 09:33	7440-48-4	
Iron	8400	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 09:33	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 09:33	7439-92-1	
Lithium	33.4	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 09:33	7439-93-2	
Magnesium	21300	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 09:33	7439-95-4	
Manganese	449	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 09:33	7439-96-5	
Molybdenum	42.9	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 09:33	7439-98-7	
Potassium	5550	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 09:33	7440-09-7	
Sodium	36000	ug/L	500	115	1	05/02/23 07:10	05/11/23 09:33	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 17:19	7440-36-0	
Arsenic	9.4	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 17:19	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 17:19	7440-43-9	
Chromium	0.59J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 17:19	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 17:19	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 17:19	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 11:53	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	415	mg/L	20.0	10.5	1		04/27/23 10:37		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	475	mg/L	10.0	10.0	1		04/28/23 12:42		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	8.3	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.086J	mg/L	0.20	0.041	1		04/26/23 14:28	15438-31-0	H6

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

---

**Sample: R-DUP-1**      **Lab ID: 60426950003**      Collected: 04/21/23 08:00      Received: 04/22/23 04:59      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		04/28/23 15:15	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>13.5</b>	mg/L	1.0	0.53	1		05/08/23 15:07	16887-00-6	
Fluoride	<b>0.54</b>	mg/L	0.20	0.12	1		05/08/23 15:07	16984-48-8	
Sulfate	<b>4.1</b>	mg/L	1.0	0.55	1		05/08/23 15:07	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-1**      **Lab ID: 60426950004**      Collected: 04/24/23 09:08      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	55.1	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 09:35	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 09:35	7440-41-7	
Boron	2530	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 09:35	7440-42-8	
Calcium	77400	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 09:35	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 09:35	7440-48-4	
Iron	61.2	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 09:35	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 09:35	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 09:35	7439-93-2	
Magnesium	11600	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 09:35	7439-95-4	
Manganese	76.6	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 09:35	7439-96-5	
Molybdenum	73.7	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 09:35	7439-98-7	
Potassium	7970	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 09:35	7440-09-7	
Sodium	123000	ug/L	500	115	1	05/02/23 07:10	05/11/23 09:35	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.13J	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 17:22	7440-36-0	
Arsenic	3.0	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 17:22	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 17:22	7440-43-9	
Chromium	0.38J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 17:22	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 17:22	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 17:22	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 11:56	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	231	mg/L	20.0	10.5	1		04/27/23 10:54		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	624	mg/L	10.0	10.0	1		04/28/23 12:44		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.061	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 13:49	15438-31-0	H6

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-1**      **Lab ID: 60426950004**      Collected: 04/24/23 09:08      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		04/28/23 15:15	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>70.9</b>	mg/L	50.0	26.4	50		05/09/23 12:03	16887-00-6	B
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/09/23 11:51	16984-48-8	
Sulfate	<b>238</b>	mg/L	50.0	27.5	50		05/09/23 12:03	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-2**      **Lab ID: 60426950005**      Collected: 04/24/23 15:15      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	12.4	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 09:37	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 09:37	7440-41-7	
Boron	3900	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 09:37	7440-42-8	
Calcium	11300	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 09:37	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 09:37	7440-48-4	
Iron	109	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 09:37	7439-89-6	
Lead	10.5	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 09:37	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 09:37	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 09:37	7439-95-4	
Manganese	8.3	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 09:37	7439-96-5	
Molybdenum	139	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 09:37	7439-98-7	
Potassium	3470	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 09:37	7440-09-7	
Sodium	238000	ug/L	500	115	1	05/02/23 07:10	05/11/23 09:37	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	3.4	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 17:26	7440-36-0	
Arsenic	268	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 17:26	7440-38-2	
Cadmium	0.42J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 17:26	7440-43-9	
Chromium	0.78J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 17:26	7440-47-3	
Selenium	2.3	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 17:26	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 17:26	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 11:58	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	235	mg/L	20.0	10.5	1		04/27/23 11:00		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	794	mg/L	10.0	10.0	1		04/28/23 12:38		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.015J	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.094J	mg/L	0.20	0.041	1		05/08/23 13:49	15438-31-0	H6

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

---

**Sample: R-MW-2**      **Lab ID: 60426950005**      Collected: 04/24/23 15:15      Received: 04/26/23 05:44      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>12.8</b>	mg/L	1.0	0.31	20		04/28/23 15:19	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>24.5</b>	mg/L	2.0	1.1	2		05/10/23 18:46	16887-00-6	
Fluoride	<b>0.92</b>	mg/L	0.20	0.12	1		05/09/23 12:16	16984-48-8	
Sulfate	<b>271</b>	mg/L	50.0	27.5	50		05/09/23 12:29	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

Sample: R-MW-3 Lab ID: 60426950006 Collected: 04/25/23 09:43 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	49.8	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 09:46	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 09:46	7440-41-7	
Boron	13100	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 09:46	7440-42-8	
Calcium	16700	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 09:46	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 09:46	7440-48-4	
Iron	137	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 09:46	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 09:46	7439-92-1	
Lithium	11.9	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 09:46	7439-93-2	
Magnesium	970	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 09:46	7439-95-4	
Manganese	19.6	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 09:46	7439-96-5	
Molybdenum	507	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 09:46	7439-98-7	
Potassium	3250	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 09:46	7440-09-7	
Sodium	264000	ug/L	500	115	1	05/02/23 07:10	05/11/23 09:46	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 17:30	7440-36-0	
Arsenic	34.2	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 17:30	7440-38-2	
Cadmium	0.21J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 17:30	7440-43-9	
Chromium	0.46J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 17:30	7440-47-3	
Selenium	0.45J	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 17:30	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 17:30	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:00	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	361	mg/L	20.0	10.5	1		04/27/23 11:32		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	799	mg/L	13.3	13.3	1		04/28/23 12:38		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.041J	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.096J	mg/L	0.20	0.041	1		05/08/23 13:51	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-3**      **Lab ID: 60426950006**      Collected: 04/25/23 09:43      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>0.41</b>	mg/L	0.050	0.016	1		04/28/23 15:19	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>86.6</b>	mg/L	50.0	26.4	50		05/09/23 12:54	16887-00-6	B
Fluoride	<b>0.51</b>	mg/L	0.20	0.12	1		05/09/23 12:41	16984-48-8	
Sulfate	<b>237</b>	mg/L	50.0	27.5	50		05/09/23 12:54	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

Sample: R-MW-6 Lab ID: 60426950007 Collected: 04/25/23 10:46 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	124	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 09:48	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 09:48	7440-41-7	
Boron	625	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 09:48	7440-42-8	
Calcium	86800	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 09:48	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 09:48	7440-48-4	
Iron	131	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 09:48	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 09:48	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 09:48	7439-93-2	
Magnesium	12200	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 09:48	7439-95-4	
Manganese	95.7	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 09:48	7439-96-5	
Molybdenum	2.3J	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 09:48	7439-98-7	
Potassium	1440	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 09:48	7440-09-7	
Sodium	14200	ug/L	500	115	1	05/02/23 07:10	05/11/23 09:48	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 17:37	7440-36-0	
Arsenic	0.59J	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 17:37	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 17:37	7440-43-9	
Chromium	0.40J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 17:37	7440-47-3	
Selenium	0.41J	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 17:37	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 17:37	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:07	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	269	mg/L	20.0	10.5	1		04/27/23 11:38		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	308	mg/L	5.0	5.0	1		04/28/23 12:38		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.13	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 13:59	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

---

**Sample: R-MW-6**      **Lab ID: 60426950007**      Collected: 04/25/23 10:46      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		04/28/23 15:20	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>4.3</b>	mg/L	1.0	0.53	1		05/09/23 13:32	16887-00-6	B
Fluoride	<b>0.27</b>	mg/L	0.20	0.12	1		05/09/23 13:32	16984-48-8	
Sulfate	<b>23.1</b>	mg/L	2.0	1.1	2		05/10/23 18:59	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

Sample: R-MW-7(r) Lab ID: 60426950008 Collected: 04/25/23 12:18 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	267	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 09:54	7440-39-3	
Beryllium	0.34J	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 09:54	7440-41-7	
Boron	1360	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 09:54	7440-42-8	
Calcium	75000	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 09:54	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 09:54	7440-48-4	
Iron	16300	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 09:54	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 09:54	7439-92-1	
Lithium	30.9	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 09:54	7439-93-2	
Magnesium	22100	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 09:54	7439-95-4	
Manganese	328	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 09:54	7439-96-5	
Molybdenum	50.3	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 09:54	7439-98-7	
Potassium	5670	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 09:54	7440-09-7	
Sodium	32000	ug/L	500	115	1	05/02/23 07:10	05/11/23 09:54	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 17:48	7440-36-0	
Arsenic	123	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 17:48	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 17:48	7440-43-9	
Chromium	0.48J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 17:48	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 17:48	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 17:48	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:14	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	338	mg/L	20.0	10.5	1		04/27/23 12:01		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	372	mg/L	10.0	10.0	1		04/28/23 12:38		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	16.3	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 14:02	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

---

**Sample: R-MW-7(r)**      **Lab ID: 60426950008**      Collected: 04/25/23 12:18      Received: 04/26/23 05:44      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		04/28/23 15:22	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>8.3</b>	mg/L	1.0	0.53	1		05/09/23 14:22	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/09/23 14:22	16984-48-8	
Sulfate	<b>10.9</b>	mg/L	1.0	0.55	1		05/09/23 14:22	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-FB-1**      **Lab ID: 60426950009**      Collected: 04/25/23 12:28      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	<0.64	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 09:56	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 09:56	7440-41-7	
Boron	<6.4	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 09:56	7440-42-8	
Calcium	28.2J	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 09:56	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 09:56	7440-48-4	
Iron	11.3J	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 09:56	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 09:56	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 09:56	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 09:56	7439-95-4	
Manganese	0.49J	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 09:56	7439-96-5	
Molybdenum	1.1J	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 09:56	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 09:56	7440-09-7	
Sodium	<115	ug/L	500	115	1	05/02/23 07:10	05/11/23 09:56	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 17:51	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 17:51	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 17:51	7440-43-9	
Chromium	0.69J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 17:51	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 17:51	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 17:51	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:16	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		04/27/23 12:14		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		04/28/23 12:39		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	0.011J	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 14:02	15438-31-0	H6

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

---

**Sample: R-FB-1**      **Lab ID: 60426950009**      Collected: 04/25/23 12:28      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		04/28/23 15:22	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>0.71J</b>	mg/L	1.0	0.53	1		05/09/23 14:47	16887-00-6	B
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/09/23 14:47	16984-48-8	
Sulfate	<b>&lt;0.55</b>	mg/L	1.0	0.55	1		05/09/23 14:47	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

Sample: R-MW-B2 Lab ID: 60426950012 Collected: 04/26/23 10:02 Received: 04/28/23 05:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	384	ug/L	5.0	0.64	1	05/02/23 07:00	05/10/23 16:49	7440-39-3	
Beryllium	0.23J	ug/L	1.0	0.12	1	05/02/23 07:00	05/10/23 16:49	7440-41-7	
Boron	36.7J	ug/L	100	6.4	1	05/02/23 07:00	05/10/23 16:49	7440-42-8	
Calcium	103000	ug/L	200	26.9	1	05/02/23 07:00	05/10/23 16:49	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:00	05/10/23 16:49	7440-48-4	
Iron	9680	ug/L	50.0	9.1	1	05/02/23 07:00	05/10/23 16:49	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:00	05/10/23 16:49	7439-92-1	
Lithium	9.9J	ug/L	10.0	3.7	1	05/02/23 07:00	05/10/23 16:49	7439-93-2	
Magnesium	18200	ug/L	50.0	20.1	1	05/02/23 07:00	05/10/23 16:49	7439-95-4	
Manganese	249	ug/L	5.0	0.39	1	05/02/23 07:00	05/10/23 16:49	7439-96-5	
Molybdenum	3.1J	ug/L	20.0	1.0	1	05/02/23 07:00	05/10/23 16:49	7439-98-7	
Potassium	1820	ug/L	500	69.7	1	05/02/23 07:00	05/10/23 16:49	7440-09-7	
Sodium	18600	ug/L	500	115	1	05/02/23 07:00	05/10/23 16:49	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:00	05/10/23 19:57	7440-36-0	
Arsenic	2.8	ug/L	1.0	0.13	1	05/02/23 07:00	05/10/23 19:57	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:00	05/10/23 19:57	7440-43-9	
Chromium	0.68J	ug/L	1.0	0.30	1	05/02/23 07:00	05/10/23 19:57	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:00	05/10/23 19:57	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:00	05/10/23 19:57	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 13:28	7439-97-6	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	326	mg/L	20.0	10.5	1		05/01/23 15:47		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	378	mg/L	10.0	10.0	1		05/03/23 13:42		
<b>Iron, Ferric (Calculation)</b>		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	9.7	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 15:06	15438-31-0	1e,H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

---

**Sample: R-MW-B2**      **Lab ID: 60426950012**      Collected: 04/26/23 10:02      Received: 04/28/23 05:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		05/03/23 14:09	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>26.8</b>	mg/L	10.0	5.3	10		05/10/23 23:00	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/10/23 00:13	16984-48-8	
Sulfate	<b>21.3</b>	mg/L	10.0	5.5	10		05/10/23 23:00	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-B1**      **Lab ID: 60426950013**      Collected: 04/27/23 09:33      Received: 04/28/23 05:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	419	ug/L	5.0	0.64	1	05/02/23 07:00	05/10/23 16:51	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:00	05/10/23 16:51	7440-41-7	
Boron	96.7J	ug/L	100	6.4	1	05/02/23 07:00	05/10/23 16:51	7440-42-8	
Calcium	139000	ug/L	200	26.9	1	05/02/23 07:00	05/10/23 16:51	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:00	05/10/23 16:51	7440-48-4	
Iron	21500	ug/L	50.0	9.1	1	05/02/23 07:00	05/10/23 16:51	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:00	05/10/23 16:51	7439-92-1	
Lithium	54.4	ug/L	10.0	3.7	1	05/02/23 07:00	05/10/23 16:51	7439-93-2	
Magnesium	44200	ug/L	50.0	20.1	1	05/02/23 07:00	05/10/23 16:51	7439-95-4	
Manganese	1090	ug/L	5.0	0.39	1	05/02/23 07:00	05/10/23 16:51	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/02/23 07:00	05/10/23 16:51	7439-98-7	
Potassium	8720	ug/L	500	69.7	1	05/02/23 07:00	05/10/23 16:51	7440-09-7	
Sodium	26900	ug/L	500	115	1	05/02/23 07:00	05/10/23 16:51	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:00	05/10/23 20:07	7440-36-0	
Arsenic	18.3	ug/L	1.0	0.13	1	05/02/23 07:00	05/10/23 20:07	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:00	05/10/23 20:07	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/02/23 07:00	05/10/23 20:07	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:00	05/10/23 20:07	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:00	05/10/23 20:07	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 13:30	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	518	mg/L	20.0	10.5	1		05/01/23 16:15		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	657	mg/L	10.0	10.0	1		05/04/23 14:18		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	21.4	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.13J	mg/L	0.20	0.041	1		05/08/23 15:09	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60426950

---

**Sample: R-MW-B1**      **Lab ID: 60426950013**      Collected: 04/27/23 09:33      Received: 04/28/23 05:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		05/03/23 14:15	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>50.0</b>	mg/L	10.0	5.3	10		05/10/23 23:13	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/10/23 00:26	16984-48-8	
Sulfate	<b>36.0</b>	mg/L	10.0	5.5	10		05/10/23 23:13	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60426950

---

QC Batch:	847479	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

---

METHOD BLANK: 3357955 Matrix: Water

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	05/17/23 11:40	

---

LABORATORY CONTROL SAMPLE: 3357956

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	100	80-120	

---

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3357957 3357958

Parameter	Units	60426950007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	5.0	4.9	98	97	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA  
Pace Project No.: 60426950

QC Batch: 847480	Analysis Method: EPA 7470
QC Batch Method: EPA 7470	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950012, 60426950013

METHOD BLANK: 3357959 Matrix: Water

Associated Lab Samples: 60426950012, 60426950013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	05/17/23 12:48	

LABORATORY CONTROL SAMPLE: 3357960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3357961 3357962

Parameter	Units	60426948015		3357962		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Mercury	ug/L	<0.096	5	5	4.3	4.3	86	86	75-125	0	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch:	844567	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

METHOD BLANK:	3347271	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	05/11/23 09:21	
Beryllium	ug/L	<0.12	1.0	0.12	05/11/23 09:21	
Boron	ug/L	<6.4	100	6.4	05/11/23 09:21	
Calcium	ug/L	<26.9	200	26.9	05/11/23 09:21	
Cobalt	ug/L	<1.2	5.0	1.2	05/11/23 09:21	
Iron	ug/L	<9.1	50.0	9.1	05/11/23 09:21	
Lead	ug/L	<3.8	10.0	3.8	05/11/23 09:21	
Lithium	ug/L	<3.7	10.0	3.7	05/11/23 09:21	
Magnesium	ug/L	<20.1	50.0	20.1	05/11/23 09:21	
Manganese	ug/L	<0.39	5.0	0.39	05/11/23 09:21	
Molybdenum	ug/L	<1.0	20.0	1.0	05/11/23 09:21	
Potassium	ug/L	<69.7	500	69.7	05/11/23 09:21	
Sodium	ug/L	<115	500	115	05/11/23 09:21	

LABORATORY CONTROL SAMPLE: 3347272

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1000	100	85-115	
Beryllium	ug/L	1000	1040	104	85-115	
Boron	ug/L	1000	963	96	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	10600	106	85-115	
Lead	ug/L	1000	998	100	85-115	
Lithium	ug/L	1000	1000	100	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1090	109	85-115	
Molybdenum	ug/L	1000	1030	103	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10100	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347273 3347274

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Spike Conc.	Result	Result						
Barium	ug/L	124	1000	1000	1130	1110	101	99	70-130	2	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60426950

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347273 3347274												
Parameter	Units	60426950007		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Beryllium	ug/L	<0.12	1000	1000	1040	1020	104	102	70-130	2	20	
Boron	ug/L	625	1000	1000	1590	1560	96	94	70-130	2	20	
Calcium	ug/L	86800	10000	10000	96000	95300	92	85	70-130	1	20	
Cobalt	ug/L	<1.2	1000	1000	1030	1040	103	104	70-130	1	20	
Iron	ug/L	131	10000	10000	10900	10700	108	106	70-130	2	20	
Lead	ug/L	<3.8	1000	1000	995	987	100	99	70-130	1	20	
Lithium	ug/L	<3.7	1000	1000	1030	1010	103	101	70-130	2	20	
Magnesium	ug/L	12200	10000	10000	22100	21900	99	97	70-130	1	20	
Manganese	ug/L	95.7	1000	1000	1130	1130	104	103	70-130	0	20	
Molybdenum	ug/L	2.3J	1000	1000	1050	1060	104	106	70-130	2	20	
Potassium	ug/L	1440	10000	10000	11600	11400	102	99	70-130	2	20	
Sodium	ug/L	14200	10000	10000	24300	23900	101	97	70-130	2	20	

MATRIX SPIKE SAMPLE: 3347276							
Parameter	Units	60426948007	Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits	
Barium	ug/L	100	1000	1100	100	70-130	
Beryllium	ug/L	<0.12	1000	1020	102	70-130	
Boron	ug/L	7770	1000	8990	123	70-130	
Calcium	ug/L	44000	10000	55400	114	70-130	
Cobalt	ug/L	<1.2	1000	1010	101	70-130	
Iron	ug/L	2510	10000	13000	105	70-130	
Lead	ug/L	<3.8	1000	973	97	70-130	
Lithium	ug/L	35.5	1000	1050	101	70-130	
Magnesium	ug/L	9350	10000	19600	102	70-130	
Manganese	ug/L	397	1000	1410	101	70-130	
Molybdenum	ug/L	679	1000	1720	104	70-130	
Potassium	ug/L	7190	10000	17500	103	70-130	
Sodium	ug/L	135000	10000	148000	138	70-130	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch:	844573	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950012, 60426950013

METHOD BLANK: 3347293 Matrix: Water

Associated Lab Samples: 60426950012, 60426950013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	05/10/23 16:40	
Beryllium	ug/L	<0.12	1.0	0.12	05/10/23 16:40	
Boron	ug/L	<6.4	100	6.4	05/10/23 16:40	
Calcium	ug/L	<26.9	200	26.9	05/10/23 16:40	
Cobalt	ug/L	<1.2	5.0	1.2	05/10/23 16:40	
Iron	ug/L	<9.1	50.0	9.1	05/10/23 16:40	
Lead	ug/L	<3.8	10.0	3.8	05/10/23 16:40	
Lithium	ug/L	<3.7	10.0	3.7	05/10/23 16:40	
Magnesium	ug/L	<20.1	50.0	20.1	05/10/23 16:40	
Manganese	ug/L	<0.39	5.0	0.39	05/10/23 16:40	
Molybdenum	ug/L	<1.0	20.0	1.0	05/10/23 16:40	
Potassium	ug/L	<69.7	500	69.7	05/10/23 16:40	
Sodium	ug/L	<115	500	115	05/10/23 16:40	

LABORATORY CONTROL SAMPLE: 3347294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Beryllium	ug/L	1000	1030	103	85-115	
Boron	ug/L	1000	977	98	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Cobalt	ug/L	1000	1070	107	85-115	
Iron	ug/L	10000	10900	109	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1040	104	85-115	
Magnesium	ug/L	10000	9900	99	85-115	
Manganese	ug/L	1000	1060	106	85-115	
Molybdenum	ug/L	1000	1070	107	85-115	
Potassium	ug/L	10000	10200	102	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347295 3347296

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60426948024	Result	Spike Conc.	Spike Conc.								
Barium	ug/L	97.2	1000	1000	1100	1080	100	98	70-130	2	20		
Beryllium	ug/L	<0.12	1000	1000	1000	1010	100	101	70-130	1	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

Parameter	Units	60426948024		3347295		3347296		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Boron	ug/L	830	1000	1000	1820	1770	99	94	70-130	2	20			
Calcium	ug/L	136000	10000	10000	148000	146000	117	95	70-130	1	20			
Cobalt	ug/L	<1.2	1000	1000	1040	1030	104	103	70-130	0	20			
Iron	ug/L	817	10000	10000	11600	11300	108	105	70-130	2	20			
Lead	ug/L	<3.8	1000	1000	1010	994	101	99	70-130	1	20			
Lithium	ug/L	34.1	1000	1000	1060	1030	103	100	70-130	3	20			
Magnesium	ug/L	22200	10000	10000	32200	31500	101	93	70-130	2	20			
Manganese	ug/L	330	1000	1000	1350	1360	102	103	70-130	0	20			
Molybdenum	ug/L	5.6J	1000	1000	1070	1080	106	108	70-130	1	20			
Potassium	ug/L	6410	10000	10000	16800	16300	104	99	70-130	3	20			
Sodium	ug/L	56500	10000	10000	67700	66500	112	100	70-130	2	20			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch:	844569	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

METHOD BLANK: 3347277 Matrix: Water

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	05/10/23 16:55	
Arsenic	ug/L	<0.13	1.0	0.13	05/10/23 16:55	
Cadmium	ug/L	<0.050	0.50	0.050	05/10/23 16:55	
Chromium	ug/L	<0.30	1.0	0.30	05/10/23 16:55	
Selenium	ug/L	<0.18	1.0	0.18	05/10/23 16:55	
Thallium	ug/L	<0.14	1.0	0.14	05/10/23 16:55	

LABORATORY CONTROL SAMPLE: 3347278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.7	102	85-115	
Arsenic	ug/L	40	41.1	103	85-115	
Cadmium	ug/L	40	40.8	102	85-115	
Chromium	ug/L	40	40.3	101	85-115	
Selenium	ug/L	40	42.1	105	85-115	
Thallium	ug/L	40	38.9	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347279 3347280

Parameter	Units	60426950007		60426950008		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Antimony	ug/L	<0.12	40	40	40.1	40.4	100	101	70-130	1	20		
Arsenic	ug/L	0.59J	40	40	42.1	42.2	104	104	70-130	0	20		
Cadmium	ug/L	<0.050	40	40	39.5	39.8	99	100	70-130	1	20		
Chromium	ug/L	0.40J	40	40	41.3	41.2	102	102	70-130	0	20		
Selenium	ug/L	0.41J	40	40	41.0	41.5	101	103	70-130	1	20		
Thallium	ug/L	<0.14	40	40	40.3	40.3	101	101	70-130	0	20		

MATRIX SPIKE SAMPLE: 3347281

Parameter	Units	60426948004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	39.7	99	70-130	
Arsenic	ug/L	1.1	40	42.2	103	70-130	
Cadmium	ug/L	<0.050	40	39.4	98	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

MATRIX SPIKE SAMPLE:		3347281					
Parameter	Units	60426948004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	0.36J	40	40.7	101	70-130	
Selenium	ug/L	2.5	40	43.2	102	70-130	
Thallium	ug/L	<0.14	40	40.1	100	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch:	844575	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950012, 60426950013

METHOD BLANK: 3347297 Matrix: Water

Associated Lab Samples: 60426950012, 60426950013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	05/10/23 19:46	
Arsenic	ug/L	<0.13	1.0	0.13	05/10/23 19:46	
Cadmium	ug/L	<0.050	0.50	0.050	05/10/23 19:46	
Chromium	ug/L	<0.30	1.0	0.30	05/10/23 19:46	
Selenium	ug/L	<0.18	1.0	0.18	05/10/23 19:46	
Thallium	ug/L	<0.14	1.0	0.14	05/10/23 19:46	

LABORATORY CONTROL SAMPLE: 3347298

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.1	103	85-115	
Arsenic	ug/L	40	42.1	105	85-115	
Cadmium	ug/L	40	41.4	104	85-115	
Chromium	ug/L	40	41.7	104	85-115	
Selenium	ug/L	40	42.9	107	85-115	
Thallium	ug/L	40	40.2	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347299 3347300

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		60426950012	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Antimony	ug/L	<0.12	40	40	40.6	39.7	101	99	70-130	2	20		
Arsenic	ug/L	2.8	40	40	45.3	44.4	106	104	70-130	2	20		
Cadmium	ug/L	<0.050	40	40	40.1	39.2	100	98	70-130	2	20		
Chromium	ug/L	0.68J	40	40	42.1	41.4	104	102	70-130	2	20		
Selenium	ug/L	<0.18	40	40	41.2	40.5	103	101	70-130	2	20		
Thallium	ug/L	<0.14	40	40	41.2	40.7	103	102	70-130	1	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA  
Pace Project No.: 60426950

QC Batch: 843896 Analysis Method: SM 2320B  
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity  
Laboratory: Pace Analytical Services - Kansas City  
Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950007

METHOD BLANK: 3344449 Matrix: Water  
Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	04/27/23 09:04	

LABORATORY CONTROL SAMPLE: 3344450

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	497	99	90-110	

SAMPLE DUPLICATE: 3344451

Parameter	Units	10650230001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	93.6	88.1	6	10	

SAMPLE DUPLICATE: 3344452

Parameter	Units	60426950007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	269	270	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 843897

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950008, 60426950009

METHOD BLANK: 3344453

Matrix: Water

Associated Lab Samples: 60426950008, 60426950009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	<10.5	20.0	10.5	04/27/23 11:50	

LABORATORY CONTROL SAMPLE: 3344454

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	500	494	99	90-110	

SAMPLE DUPLICATE: 3344455

Parameter	Units	60426950008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	338	342	1	10	

SAMPLE DUPLICATE: 3344456

Parameter	Units	60426948015 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	292	290	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 844433

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950012, 60426950013

METHOD BLANK: 3346791

Matrix: Water

Associated Lab Samples: 60426950012, 60426950013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/01/23 13:35	

LABORATORY CONTROL SAMPLE: 3346792

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	502	100	90-110	

SAMPLE DUPLICATE: 3346793

Parameter	Units	60427265002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	1370	1270	7	10	

SAMPLE DUPLICATE: 3346794

Parameter	Units	60427332001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	367	369	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 844134

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004

METHOD BLANK: 3345517

Matrix: Water

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/28/23 12:40	

LABORATORY CONTROL SAMPLE: 3345518

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	976	98	80-120	

SAMPLE DUPLICATE: 3345519

Parameter	Units	60426917001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	318	297	7	10	

SAMPLE DUPLICATE: 3345520

Parameter	Units	60426948001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	355	356	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch:	844136	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

METHOD BLANK: 3345524 Matrix: Water  
Associated Lab Samples: 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/28/23 12:38	

LABORATORY CONTROL SAMPLE: 3345525

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1040	104	80-120	

SAMPLE DUPLICATE: 3345526

Parameter	Units	60426950007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	308	308	0	10	

SAMPLE DUPLICATE: 3345527

Parameter	Units	60426948015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	583	581	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA  
Pace Project No.: 60426950

QC Batch: 844945	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950012

METHOD BLANK: 3348282 Matrix: Water

Associated Lab Samples: 60426950012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/03/23 13:39	

LABORATORY CONTROL SAMPLE: 3348283

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 3348284

Parameter	Units	60427341008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1530	1570	3	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 845204

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950013

METHOD BLANK: 3349176

Matrix: Water

Associated Lab Samples: 60426950013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/04/23 14:16	

LABORATORY CONTROL SAMPLE: 3349177

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1050	105	80-120	

SAMPLE DUPLICATE: 3349178

Parameter	Units	60427363002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5200	5130	1	10	

SAMPLE DUPLICATE: 3349179

Parameter	Units	60427490002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	648	638	2	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 843506

Analysis Method: SM 3500-Fe B#4

QC Batch Method: SM 3500-Fe B#4

Analysis Description: Iron, Ferrous

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950001, 60426950002, 60426950003

METHOD BLANK: 3343187

Matrix: Water

Associated Lab Samples: 60426950001, 60426950002, 60426950003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	04/26/23 14:25	H6

LABORATORY CONTROL SAMPLE: 3343188

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	105	90-110	H6

SAMPLE DUPLICATE: 3343189

Parameter	Units	60427090003 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	ND	0.16J		20	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch:	845656	Analysis Method:	SM 3500-Fe B#4
QC Batch Method:	SM 3500-Fe B#4	Analysis Description:	Iron, Ferrous
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

METHOD BLANK: 3350976 Matrix: Water

Associated Lab Samples: 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	05/08/23 10:22	H6

LABORATORY CONTROL SAMPLE: 3350977

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.0	100	90-110	H6

SAMPLE DUPLICATE: 3350985

Parameter	Units	60426948015 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.041	<0.041		20	H6

SAMPLE DUPLICATE: 3350986

Parameter	Units	60426950007 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.041	<0.041		20	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 845657	Analysis Method: SM 3500-Fe B#4
QC Batch Method: SM 3500-Fe B#4	Analysis Description: Iron, Ferrous
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950012, 60426950013

METHOD BLANK: 3350979 Matrix: Water

Associated Lab Samples: 60426950012, 60426950013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	05/08/23 14:57	H6

LABORATORY CONTROL SAMPLE: 3350980

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	103	90-110	H6

SAMPLE DUPLICATE: 3350981

Parameter	Units	60426948008 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.041	<0.041		20	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 844137

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

METHOD BLANK: 3345528

Matrix: Water

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	04/28/23 15:11	

LABORATORY CONTROL SAMPLE: 3345529

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.48	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3345530 3345531

Parameter	Units	60426950007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	<0.016	0.5	0.5	0.42	0.42	82	83	75-125	1	20	

SAMPLE DUPLICATE: 3345532

Parameter	Units	60426950007 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 844925

Analysis Method: SM 4500-S-2 D

QC Batch Method: SM 4500-S-2 D

Analysis Description: 4500S2D Sulfide, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950012, 60426950013

METHOD BLANK: 3348226

Matrix: Water

Associated Lab Samples: 60426950012, 60426950013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/03/23 13:54	

LABORATORY CONTROL SAMPLE: 3348227

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.46	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3348228 3348229

Parameter	Units	60427241002		3348229		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Sulfide, Total	mg/L	1.8	0.5	0.5	4.2	4.2	481	481	75-125	0	20 M1

SAMPLE DUPLICATE: 3348230

Parameter	Units	60426948022 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA  
Pace Project No.: 60426950

QC Batch: 845456 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950001, 60426950002, 60426950003

METHOD BLANK: 3350048 Matrix: Water

Associated Lab Samples: 60426950001, 60426950002, 60426950003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/08/23 08:23	
Fluoride	mg/L	<0.12	0.20	0.12	05/08/23 08:23	
Sulfate	mg/L	<0.55	1.0	0.55	05/08/23 08:23	

LABORATORY CONTROL SAMPLE: 3350049

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.2	105	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3350051 3350052

Parameter	Units	60427736003		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	184	50	50	222	204	78	40	80-120	9	15	E,M1	
Fluoride	mg/L	ND	25	25	28.7	26.6	115	106	80-120	8	15		
Sulfate	mg/L	122	50	50	164	149	83	53	80-120	10	15	M1	

SAMPLE DUPLICATE: 3350050

Parameter	Units	60427736003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	184	178	3	15	
Fluoride	mg/L	ND	<1.2		15	
Sulfate	mg/L	122	118	4	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 845828 Analysis Method: EPA 300.0  
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
 Laboratory: Pace Analytical Services - Kansas City  
 Associated Lab Samples: 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

METHOD BLANK: 3351703 Matrix: Water  
 Associated Lab Samples: 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.56J	1.0	0.53	05/09/23 08:21	
Fluoride	mg/L	<0.12	0.20	0.12	05/09/23 08:21	
Sulfate	mg/L	<0.55	1.0	0.55	05/09/23 08:21	

METHOD BLANK: 3354873 Matrix: Water  
 Associated Lab Samples: 60426950004, 60426950005, 60426950006, 60426950007, 60426950008, 60426950009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/10/23 16:19	
Fluoride	mg/L	<0.12	0.20	0.12	05/10/23 16:19	
Sulfate	mg/L	<0.55	1.0	0.55	05/10/23 16:19	

LABORATORY CONTROL SAMPLE: 3351704

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	93	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

LABORATORY CONTROL SAMPLE: 3354874

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3351706 3351705

Parameter	Units	3351706		3351705		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	4.3	5	5	8.7	8.9	88	91	80-120	2	15
Fluoride	mg/L	0.27	2.5	2.5	2.6	2.6	95	95	80-120	0	15
Sulfate	mg/L	23.1	10	10	33.1	33.1	100	100	80-120	0	15

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
 without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

SAMPLE DUPLICATE: 3351707

Parameter	Units	60426950007 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	4.3	4.3	0	15	
Fluoride	mg/L	0.27	0.27	0	15	
Sulfate	mg/L	23.1	23.3	1	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 845829

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426950012, 60426950013

METHOD BLANK: 3351708

Matrix: Water

Associated Lab Samples: 60426950012, 60426950013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/09/23 16:28	
Fluoride	mg/L	<0.12	0.20	0.12	05/09/23 16:28	
Sulfate	mg/L	<0.55	1.0	0.55	05/09/23 16:28	

METHOD BLANK: 3354876

Matrix: Water

Associated Lab Samples: 60426950012, 60426950013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/10/23 19:53	
Fluoride	mg/L	<0.12	0.20	0.12	05/10/23 19:53	
Sulfate	mg/L	<0.55	1.0	0.55	05/10/23 19:53	

LABORATORY CONTROL SAMPLE: 3351709

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	91	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	5.4	109	90-110	

LABORATORY CONTROL SAMPLE: 3354877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3351710

3351711

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60426948015 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	28.8	50	50	74.1	74.8	90	92	80-120	1	15		
Fluoride	mg/L	2.0	2.5	2.5	4.8	4.8	109	111	80-120	1	15		
Sulfate	mg/L	96.4	50	50	145	146	98	99	80-120	0	15		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60426950

SAMPLE DUPLICATE: 3351712

Parameter	Units	60426948015 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	28.8	28.7	0	15	
Fluoride	mg/L	2.0	2.1	1	15	
Sulfate	mg/L	96.4	96.9	1	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-4**      **Lab ID: 60426950001**      Collected: 04/21/23 13:30      Received: 04/22/23 04:59      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.245 ± 0.537 (0.970)</b> <b>C:NA T:100%</b>	pCi/L	05/17/23 15:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.812 ± 0.388 (0.648)</b> <b>C:78% T:86%</b>	pCi/L	05/12/23 15:31	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-5**      **Lab ID: 60426950002**      Collected: 04/21/23 12:36      Received: 04/22/23 04:59      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.209 ± 0.410 (0.749)</b> <b>C:NA T:92%</b>	pCi/L	05/17/23 15:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.502 ± 0.332 (0.622)</b> <b>C:80% T:84%</b>	pCi/L	05/12/23 15:31	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-DUP-1**      **Lab ID: 60426950003**      Collected: 04/21/23 08:00      Received: 04/22/23 04:59      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.389 ± 0.541 (0.914)</b> <b>C:NA T:98%</b>	pCi/L	05/17/23 15:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.716 ± 0.386 (0.684)</b> <b>C:76% T:87%</b>	pCi/L	05/12/23 15:31	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-1**      **Lab ID: 60426950004**      Collected: 04/24/23 09:08      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.367 ± 0.628 (1.10)</b> <b>C:NA T:84%</b>	pCi/L	05/17/23 15:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.532 ± 0.395 (0.772)</b> <b>C:75% T:83%</b>	pCi/L	05/12/23 15:31	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-2**      **Lab ID: 60426950005**      Collected: 04/24/23 15:15      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0796 ± 0.363 (0.739)</b> <b>C:NA T:78%</b>	pCi/L	05/17/23 15:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.440 ± 0.474 (0.981)</b> <b>C:75% T:55%</b>	pCi/L	05/12/23 15:31	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-3**      **Lab ID: 60426950006**      Collected: 04/25/23 09:43      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.000 ± 0.296 (0.664)</b> <b>C:NA T:97%</b>	pCi/L	05/17/23 16:14	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.327 ± 0.323 (0.662)</b> <b>C:79% T:84%</b>	pCi/L	05/12/23 15:31	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-6**      **Lab ID: 60426950007**      Collected: 04/25/23 10:46      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>-0.0444 ± 0.261 (0.582)</b> <b>C:NA T:96%</b>	pCi/L	05/18/23 12:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.463 ± 0.326 (0.628)</b> <b>C:79% T:89%</b>	pCi/L	05/11/23 12:59	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-7(r)**      **Lab ID: 60426950008**      Collected: 04/25/23 12:18      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0669 ± 0.435 (0.876)</b> <b>C:NA T:99%</b>	pCi/L	05/17/23 16:14	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.621 ± 0.354 (0.640)</b> <b>C:78% T:92%</b>	pCi/L	05/12/23 15:31	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-FB-1**      **Lab ID: 60426950009**      Collected: 04/25/23 12:28      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.138 ± 0.316 (0.509)</b> <b>C:NA T:95%</b>	pCi/L	05/17/23 16:14	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>-0.301 ± 0.283 (0.734)</b> <b>C:79% T:78%</b>	pCi/L	05/12/23 15:31	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MS-1**      **Lab ID: 60426950010**      Collected: 04/25/23 10:46      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>85.80 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/18/23 12:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>79.33 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/11/23 12:59	15262-20-1	

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MSD-1**      **Lab ID: 60426950011**      Collected: 04/25/23 10:46      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>96.66 %REC</b> <b>11.90 RPD ±</b> <b>NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/18/23 12:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>70.76 %REC</b> <b>11.42RPD ±</b> <b>NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/11/23 12:59	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-B2**      **Lab ID: 60426950012**      Collected: 04/26/23 10:02      Received: 04/28/23 05:00      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.185 ± 0.405 (0.732)</b> <b>C:NA T:93%</b>	pCi/L	05/22/23 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.800 ± 0.451 (0.838)</b> <b>C:79% T:93%</b>	pCi/L	05/15/23 15:56	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

**Sample: R-MW-B1**      **Lab ID: 60426950013**      Collected: 04/27/23 09:33      Received: 04/28/23 05:00      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.525 ± 0.390 (0.488)</b> <b>C:NA T:87%</b>	pCi/L	05/22/23 13:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.43 ± 0.552 (0.873)</b> <b>C:79% T:87%</b>	pCi/L	05/15/23 15:56	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 585492

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950008, 60426950009

METHOD BLANK: 2843596

Matrix: Water

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950008, 60426950009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.522 ± 0.338 (0.632) C:83% T:79%	pCi/L	05/12/23 12:25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 585733

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60426950007, 60426950010, 60426950011

METHOD BLANK: 2845067

Matrix: Water

Associated Lab Samples: 60426950007, 60426950010, 60426950011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.401 ± 0.294 (0.568) C:78% T:90%	pCi/L	05/11/23 12:58	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 585867

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60426950012, 60426950013

METHOD BLANK: 2845655

Matrix: Water

Associated Lab Samples: 60426950012, 60426950013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.409 ± 0.287 (0.536) C:74% T:87%	pCi/L	05/15/23 12:09	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 585864

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60426950012, 60426950013

METHOD BLANK: 2845648

Matrix: Water

Associated Lab Samples: 60426950012, 60426950013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.100 ± 0.241 (0.466) C:NA T:87%	pCi/L	05/22/23 12:58	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 585490

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950008, 60426950009

METHOD BLANK: 2843591

Matrix: Water

Associated Lab Samples: 60426950001, 60426950002, 60426950003, 60426950004, 60426950005, 60426950006, 60426950008, 60426950009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0521 ± 0.238 (0.484) C:NA T:93%	pCi/L	05/17/23 15:39	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60426950

QC Batch: 585731

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60426950007, 60426950010, 60426950011

METHOD BLANK: 2845061

Matrix: Water

Associated Lab Samples: 60426950007, 60426950010, 60426950011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.152 ± 0.263 (0.469) C:NA T:86%	pCi/L	05/18/23 12:24	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## QUALIFIERS

Project: AMEREN RCPA

Pace Project No.: 60426950

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

1e Ferrrous Iron result is greater than the total iron. Data is within laboratory control limits.

B Analyte was detected in the associated method blank.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

H6 Analysis initiated outside of the 15 minute EPA required holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA

Pace Project No.: 60426950

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60426950001	R-MW-4	EPA 200.7	844567	EPA 200.7	844802
60426950002	R-MW-5	EPA 200.7	844567	EPA 200.7	844802
60426950003	R-DUP-1	EPA 200.7	844567	EPA 200.7	844802
60426950004	R-MW-1	EPA 200.7	844567	EPA 200.7	844802
60426950005	R-MW-2	EPA 200.7	844567	EPA 200.7	844802
60426950006	R-MW-3	EPA 200.7	844567	EPA 200.7	844802
60426950007	R-MW-6	EPA 200.7	844567	EPA 200.7	844802
60426950008	R-MW-7(r)	EPA 200.7	844567	EPA 200.7	844802
60426950009	R-FB-1	EPA 200.7	844567	EPA 200.7	844802
60426950012	R-MW-B2	EPA 200.7	844573	EPA 200.7	844795
60426950013	R-MW-B1	EPA 200.7	844573	EPA 200.7	844795
60426950001	R-MW-4	EPA 200.8	844569	EPA 200.8	844803
60426950002	R-MW-5	EPA 200.8	844569	EPA 200.8	844803
60426950003	R-DUP-1	EPA 200.8	844569	EPA 200.8	844803
60426950004	R-MW-1	EPA 200.8	844569	EPA 200.8	844803
60426950005	R-MW-2	EPA 200.8	844569	EPA 200.8	844803
60426950006	R-MW-3	EPA 200.8	844569	EPA 200.8	844803
60426950007	R-MW-6	EPA 200.8	844569	EPA 200.8	844803
60426950008	R-MW-7(r)	EPA 200.8	844569	EPA 200.8	844803
60426950009	R-FB-1	EPA 200.8	844569	EPA 200.8	844803
60426950012	R-MW-B2	EPA 200.8	844575	EPA 200.8	844796
60426950013	R-MW-B1	EPA 200.8	844575	EPA 200.8	844796
60426950001	R-MW-4	EPA 7470	847479	EPA 7470	847494
60426950002	R-MW-5	EPA 7470	847479	EPA 7470	847494
60426950003	R-DUP-1	EPA 7470	847479	EPA 7470	847494
60426950004	R-MW-1	EPA 7470	847479	EPA 7470	847494
60426950005	R-MW-2	EPA 7470	847479	EPA 7470	847494
60426950006	R-MW-3	EPA 7470	847479	EPA 7470	847494
60426950007	R-MW-6	EPA 7470	847479	EPA 7470	847494
60426950008	R-MW-7(r)	EPA 7470	847479	EPA 7470	847494
60426950009	R-FB-1	EPA 7470	847479	EPA 7470	847494
60426950012	R-MW-B2	EPA 7470	847480	EPA 7470	847495
60426950013	R-MW-B1	EPA 7470	847480	EPA 7470	847495
60426950001	R-MW-4	EPA 903.1	585490		
60426950002	R-MW-5	EPA 903.1	585490		
60426950003	R-DUP-1	EPA 903.1	585490		
60426950004	R-MW-1	EPA 903.1	585490		
60426950005	R-MW-2	EPA 903.1	585490		
60426950006	R-MW-3	EPA 903.1	585490		
60426950007	R-MW-6	EPA 903.1	585731		
60426950008	R-MW-7(r)	EPA 903.1	585490		
60426950009	R-FB-1	EPA 903.1	585490		
60426950010	R-MS-1	EPA 903.1	585731		
60426950011	R-MSD-1	EPA 903.1	585731		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA

Pace Project No.: 60426950

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60426950012	R-MW-B2	EPA 903.1	585864		
60426950013	R-MW-B1	EPA 903.1	585864		
60426950001	R-MW-4	EPA 904.0	585492		
60426950002	R-MW-5	EPA 904.0	585492		
60426950003	R-DUP-1	EPA 904.0	585492		
60426950004	R-MW-1	EPA 904.0	585492		
60426950005	R-MW-2	EPA 904.0	585492		
60426950006	R-MW-3	EPA 904.0	585492		
60426950007	R-MW-6	EPA 904.0	585733		
60426950008	R-MW-7(r)	EPA 904.0	585492		
60426950009	R-FB-1	EPA 904.0	585492		
60426950010	R-MS-1	EPA 904.0	585733		
60426950011	R-MSD-1	EPA 904.0	585733		
60426950012	R-MW-B2	EPA 904.0	585867		
60426950013	R-MW-B1	EPA 904.0	585867		
60426950001	R-MW-4	SM 2320B	843896		
60426950002	R-MW-5	SM 2320B	843896		
60426950003	R-DUP-1	SM 2320B	843896		
60426950004	R-MW-1	SM 2320B	843896		
60426950005	R-MW-2	SM 2320B	843896		
60426950006	R-MW-3	SM 2320B	843896		
60426950007	R-MW-6	SM 2320B	843896		
60426950008	R-MW-7(r)	SM 2320B	843897		
60426950009	R-FB-1	SM 2320B	843897		
60426950012	R-MW-B2	SM 2320B	844433		
60426950013	R-MW-B1	SM 2320B	844433		
60426950001	R-MW-4	SM 2540C	844134		
60426950002	R-MW-5	SM 2540C	844134		
60426950003	R-DUP-1	SM 2540C	844134		
60426950004	R-MW-1	SM 2540C	844134		
60426950005	R-MW-2	SM 2540C	844136		
60426950006	R-MW-3	SM 2540C	844136		
60426950007	R-MW-6	SM 2540C	844136		
60426950008	R-MW-7(r)	SM 2540C	844136		
60426950009	R-FB-1	SM 2540C	844136		
60426950012	R-MW-B2	SM 2540C	844945		
60426950013	R-MW-B1	SM 2540C	845204		
60426950001	R-MW-4	SM 3500-Fe B#4	847953		
60426950002	R-MW-5	SM 3500-Fe B#4	847953		
60426950003	R-DUP-1	SM 3500-Fe B#4	847953		
60426950004	R-MW-1	SM 3500-Fe B#4	847953		
60426950005	R-MW-2	SM 3500-Fe B#4	847953		

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA

Pace Project No.: 60426950

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60426950006	R-MW-3	SM 3500-Fe B#4	847953		
60426950007	R-MW-6	SM 3500-Fe B#4	847953		
60426950008	R-MW-7(r)	SM 3500-Fe B#4	847953		
60426950009	R-FB-1	SM 3500-Fe B#4	847953		
60426950012	R-MW-B2	SM 3500-Fe B#4	847954		
60426950013	R-MW-B1	SM 3500-Fe B#4	847954		
60426950001	R-MW-4	SM 3500-Fe B#4	843506		
60426950002	R-MW-5	SM 3500-Fe B#4	843506		
60426950003	R-DUP-1	SM 3500-Fe B#4	843506		
60426950004	R-MW-1	SM 3500-Fe B#4	845656		
60426950005	R-MW-2	SM 3500-Fe B#4	845656		
60426950006	R-MW-3	SM 3500-Fe B#4	845656		
60426950007	R-MW-6	SM 3500-Fe B#4	845656		
60426950008	R-MW-7(r)	SM 3500-Fe B#4	845656		
60426950009	R-FB-1	SM 3500-Fe B#4	845656		
60426950012	R-MW-B2	SM 3500-Fe B#4	845657		
60426950013	R-MW-B1	SM 3500-Fe B#4	845657		
60426950001	R-MW-4	SM 4500-S-2 D	844137		
60426950002	R-MW-5	SM 4500-S-2 D	844137		
60426950003	R-DUP-1	SM 4500-S-2 D	844137		
60426950004	R-MW-1	SM 4500-S-2 D	844137		
60426950005	R-MW-2	SM 4500-S-2 D	844137		
60426950006	R-MW-3	SM 4500-S-2 D	844137		
60426950007	R-MW-6	SM 4500-S-2 D	844137		
60426950008	R-MW-7(r)	SM 4500-S-2 D	844137		
60426950009	R-FB-1	SM 4500-S-2 D	844137		
60426950012	R-MW-B2	SM 4500-S-2 D	844925		
60426950013	R-MW-B1	SM 4500-S-2 D	844925		
60426950001	R-MW-4	EPA 300.0	845456		
60426950002	R-MW-5	EPA 300.0	845456		
60426950003	R-DUP-1	EPA 300.0	845456		
60426950004	R-MW-1	EPA 300.0	845828		
60426950005	R-MW-2	EPA 300.0	845828		
60426950006	R-MW-3	EPA 300.0	845828		
60426950007	R-MW-6	EPA 300.0	845828		
60426950008	R-MW-7(r)	EPA 300.0	845828		
60426950009	R-FB-1	EPA 300.0	845828		
60426950012	R-MW-B2	EPA 300.0	845829		
60426950013	R-MW-B1	EPA 300.0	845829		

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



DC#\_Title: ENV-FRM-LENE-0009\_S:

WO#: 60426950

Revision: 2

Effective Date: 01/1:



Client Name: Rocksmith

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-299 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 13.2/11 Corr. Factor +0.2 Corrected 13.4/13

Date and initials of person examining contents: BC 4/22

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>wt</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>67181</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Cyanide water sample checks: Lead acetate strip turns dark? (Record only) <input type="checkbox"/> Yes <input type="checkbox"/> No Potassium iodide test strip turns blue/purple? (Preserve) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company:	Rocksmith Geoenigneers, LLC.	Report To:	Mark Haddock	Attention:	
Address:	5233 Reanoke Drive St. Charles, MO 63304	Copy To:	Jeffrey Ingram	Company Name:	Rocksmith
Email To:	mark.haddock@rocksmithgeo.com	Purchase Order No.:		Address:	
Phone:	314-974-6578	Project Name:	Ameren RCPA	Pace Project Reference:	
Requested Due Date/TAT:	Standard	Project Number:	COC #5	Pace Project Manager:	Jamie Church
				Pace Profile #:	15854, line 1

<b>REGULATORY AGENCY</b>	
<input type="checkbox"/> NPDES	<input checked="" type="checkbox"/> GROUND WATER
<input type="checkbox"/> UST	<input type="checkbox"/> RCRA
<input type="checkbox"/> OTHER	
Site Location	MO
STATE:	

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WP AR OT TS	SAMPLE ID (A-Z, 0-9, /, -) * Sample IDs MUST BE UNIQUE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
			COMPOSITE START	COMPOSITE END/GRAB									
1		R-MW-1			G	WT							
2		R-MW-2			G	WT							
3		R-MW-3			G	WT							
4		R-MW-4		4-21-23 1330	G	WT	Grant	4-21-23	1545	Pace	4/22	0459	134
5		R-MW-5		4-21-23 1236	G	WT							13
6		R-MW-6			G	WT							
7		R-MW-7(r)			G	WT							
8		R-MW-B1			G	WT							
9		R-MW-B2			G	WT							
10		R-DUP-1		4-21-23 -	G	WT							
11		R-FB-1			G	WT							
12		R-MS-1			G	WT							

<b>Section D</b> Requested Client Information		<b>Requested Analysis Filtered (Y/N)</b>	
Analysis Test ↑	Y/N	Chloride/Fluoride/Sulfate	N
App III and Cat/An Metals	N	Alkalinity	N
TDS	N	Mercury	N
Appendix IV Metals *	N	Radium 226	N
		Radium 228	N
		Ferrous/Ferric Iron	N
		SM4500-S2D Sulfide	N
		Residual Chlorine (Y/N)	

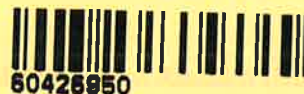
60426450

Sample dat: 4-21-23

<b>SAMPLER NAME AND SIGNATURE</b>	
PRINT Name of SAMPLER:	Grant Moray
SIGNATURE of SAMPLER:	<i>Grant Moray</i>
DATE Signed (MM/DD/YYYY):	04/21/23

Temp in °C		Received on		Cooler Sealed		Samples Intact	
		Ice (Y/N)					

WO#: 60426950



DC#\_Title: ENV-FRM-LENE-0009\_Sample Co

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmith Geoenrg

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  Nope  Other

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 2.0/2.1/6.9 Corr. Factor +0.2 Corrected 2.2/2.3/1.1

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 12.6/14.9

12.8/15.1

pv4/26/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

LOT#: 67181/62071

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_



**CHAIN-OF-CUSTODY / Analytical Request Document**

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.



**Section A**

Required Client Information:

Company: Rocksmith Geoenvironmental, LLC.  
 Address: 5233 Roanoke Drive  
St. Charles, MO 63304  
 Email To: mark.haddock@rocksmithgeo.com  
 Phone: 314-974-6578 Fax: \_\_\_\_\_  
 Requested Due Date/TAT: Standard

**Section B**

Required Project Information:

Report To: Mark Haddock  
 Copy To: Jeffrey Ingram  
 Purchase Order No.: \_\_\_\_\_  
 Project Name: Ameren RCPA  
 Project Number: COC #5

**Section C**

Invoice Information:

Attention: \_\_\_\_\_  
 Company Name: Rocksmith  
 Address: \_\_\_\_\_  
 Pace Quote Reference: \_\_\_\_\_  
 Pace Project Manager: Jamie Church  
 Pace Profile #: 15854, line 1

**REGULATORY AGENCY**

NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER  
 Site Location \_\_\_\_\_ STATE: MO

Page: 1 of 2

REGULATORY AGENCY

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES	Analysis Test	Requested Analysis Filtered (Y/N)													Temp In °F	Received on	Cooler (Y/N)	Samples Intact (Y/N)																	
					DATE	TIME					DATE	TIME	Y	N	Y	N	Y	N	Y	N	Y	N	Y					N	Y	N														
1	R-MW-1	DRINKING WATER	WT G	G	4-24-23	10:08		6	H2SO4 Unpreserved	Chloride/Fluoride/Sulfate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y												
2	R-MW-2	WATER	WT G	G	4-24-23	15:15		6	HCl NaOH	App III and Cat/An Metals	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y												
3	R-MW-3	WASTE WATER	WT G	G	4-25-23	10:46		6	HNO3	Alkalinity	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
4	R-MW-4	PRODUCT	WT G	G	4-25-23	10:43		6	H2SO4 Unpreserved	Chloride/Fluoride/Sulfate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y										
5	R-MW-5	SOLID	WT G	G						Mercury	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											
6	R-MW-6		WT G	G	4-25-23	10:46		6	H2SO4 Unpreserved	Chloride/Fluoride/Sulfate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y										
7	R-MW-7(r)		WT G	G	4-25-23	12:28		6	H2SO4 Unpreserved	Chloride/Fluoride/Sulfate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y									
8	R-MW-B1		WT G	G	4-25-23	10:46		6	H2SO4 Unpreserved	Chloride/Fluoride/Sulfate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y									
9	R-MW-B2		WT G	G						Mercury	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y									
10	R-DUP-1		WT G	G						Appendix IV Metals *	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y									
11	R-FB-1		WT G	G	4-25-23	10:46		6	H2SO4 Unpreserved	Chloride/Fluoride/Sulfate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y								
12	R-MS-1		WT G	G	4-25-23	10:46		6	H2SO4 Unpreserved	Chloride/Fluoride/Sulfate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y								
<b>ADDITIONAL COMMENTS</b>												ACCEPTED BY / AFFILIATION	DATE	TIME	DATE	TIME	<b>Requested Analysis Filtered (Y/N)</b>											Temp In °F	Received on	Cooler (Y/N)	Samples Intact (Y/N)													
Grant Mores/WSP												<i>Grant Mores</i>	4-25-23	1555	4-25-23	1555	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
<b>SAMPLER NAME AND SIGNATURE</b>												DATE SIGNED (MM/DD/YYYY)																																
Grant Mores												<i>Grant Mores</i>	04/25/23																															



**CHAIN-OF-CUSTODY / Analytical Request Document**  
 The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2

**Section A**  
**Required Client Information:**  
 Company: Rocksmith Geoenvironmental, LLC.  
 Address: 5233 Roanoke Drive  
 St. Charles, MO 63304  
 Email To: mark.haddock@rocksmithgeo.com  
 Phone: 314-974-6578 Fax:  
**Requested Due Date/TAT:** Standard  
 Project Name: Ameren RCRA  
 Project Number: COC #5

**Section B**  
**Required Project Information:**  
 Report To: Mark Haddock  
 Copy To: Jeffrey Ingram  
 Purchase Order No.:  
 Project Name: Ameren RCRA  
 Project Number: COC #5

**Section C**  
**Invoice Information:**  
 Attention:  
 Company Name: Rocksmith  
 Address:  
 Pace Quote Reference:  
 Pace Project Manager: Jamie Church  
 Pace Profile #: 15854, line 1

**Section D**  
**Required Client Information:**  
 Valid Matrix Codes  
 MATRIX CODE  
 DRINKING WATER DW  
 WASTE WATER WW  
 PRODUCT P  
 SOLID S  
 OIL OL  
 AIR AR  
 OTHER OT  
 TS  
**SAMPLE ID**  
 (A-Z, 0-9 / / -)  
 Sample IDs MUST BE UNIQUE

**REGULATORY AGENCY**  
 NPDES GROUND WATER  
 UST RCRA DRINKING WATER  
 OTHER

**Site Location**  
 STATE: MO

ITEM #	MATRIX	Valid Matrix Codes	MATRIX CODE	COLLECTED			SAMPLER TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals **	Mercury	Radium 226	Radium 228	Ferrous/Ferric Iron	SM4500-S2D Sulfide	Residual Chlorine (Y/N)	Pace Project No/ Lab I.D.	SAMPLE CONDITIONS																								
				COMPOSITE START	COMPOSITE END	COMPOSITE ENDING																																									
1	WT	WT	G	DATE	TIME	DATE	TIME			↑													2-2	Y									Temp In	15.1	Received on	Ice (Y/N)	Sealed Cooler	Custody (Y/N)	Samples In tact								
2	WT	WT	G	4-25-23	10:46			62	3													60426950	Y	4/16/2024	05:44									2-3	Y	1-1	12-8										
3	WT	WT	G																																												
4	WT	WT	G																																												
5	WT	WT	G																																												
6	WT	WT	G																																												
7	WT	WT	G																																												
8	WT	WT	G																																												
9	WT	WT	G																																												
10	WT	WT	G																																												
11	WT	WT	G																																												
12	WT	WT	G																																												

**RELEASING BY / AFFILIATION**  
 DATE: 4-25-23  
 TIME: 15:55  
 Signature: Grant Mary

**ACCEPTED BY / AFFILIATION**  
 DATE: 4/16/2024  
 TIME: 05:44  
 Signature: J. Murphy

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Grant Mary  
 SIGNATURE of SAMPLER: [Signature]

**DATE SIGNED** (MM/DD/YY): 04/25/23

**ADDITIONAL COMMENTS**  
 \*App III and Cat/An Metals\*\* - EPA 200.7. B, Ca, Fe, Mg, Mn, K, Na  
 \*\* - App IV Metals - EPA 200.7 - Ba, Be, Co, Pb, Li, Mo  
 200.8 Metals - Sb, As, Cd, Cr, Se, Tl  
 Radium 226/228 to Pace PA

1/2 RMS-1- only 109 Radium for these  
 R-MSD-1- two sample.  
 Follow container sheet.

Client: Rocksmitz Geoeng

Profile #

Site:

Notes: Append to 60426950

COC Line Item	Matrix	VG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT																	1		1	2	1				1			
2																		↓		1	2	↓				↓			
3																		↓		1	2	↓				↓			
4																													
5																													
6	WT																	3		3	2	3				3			
7																		1		1	2	1				1			
8																													
9																													
10																													
11	WT																	1		1	2	1				1			
12																					2	2							

Container Codes

		Glass										Plastic										Misc.								
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic	I	Wipe/Swab																							
DG9H	40mL HCl amber vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Coiform Na Thiosulfate																							
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag																							
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter																							
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes																							
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NaOH plastic	R	Terracore Kit																							
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can																							
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic																									
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic																									
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate																									
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic																									
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered																									
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic																									
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic																									
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic																									
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate																									
				BP4U	125mL unpreserved plastic																									
				BP4N	125mL HNO3 plastic																									
				BP4S	125mL H2SO4 plastic																									
				WPDU	16oz unpreserved plastic																									

Work Order Number: 60426950

Work Order Number:



2/2

Client: Rocksmith Geoeng

Profile #

Notes: Append to 60426950

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGPU	WGPU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT																													
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

Glass			Plastic			Misc.		
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic	I	Wipe/Swab	
DG9H	40mL HCl amber vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate	
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag	
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter	
DG9S	40mL H2SO4 amber vial	AG0U	100mL unpreserved amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes	
DG9T	40mL Na Thio amber vial	AG1H	100mL unores amber glass	BP2C	500mL NaOH plastic	R	Terracore Kit	
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can	
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic			
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic			
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate			
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic			
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water	
BG3H	250mL HCl Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid	
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid	
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	OL	OIL	
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe	
				BP4U	125mL unpreserved plastic	DW	Drinking Water	
				BP4N	125mL HNO3 plastic			
				BP4S	125mL H2SO4 plastic			
				WPDU	16oz unpreserved plastic			

Work Order Number:

60426950

WO#: 60426950



DC#\_Title: ENV-FRM-LENE-0009\_Sample

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmitz Geoeng

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T299 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 0.9/16.1 Corr. Factor +0.2 Corrected 1.1/16.3

Date and initials of person examining contents:

PV 4/20/23

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

LOT#: 67181/62071

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: **1** of **1**

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company:	Rocksmith Geoenigneers, LLC.	Report To:	Mark Haddock	Attention:	
Address:	5233 Roanoke Drive St. Charles, MO 63304	Copy To:	Jeffrey Ingram	Company Name:	Rocksmith
Email To:	mark.haddock@rocksmithgeo.com	Purchase Order No.:		Address:	
Phone:	314-974-6578	Project Name:	Ameren RCPA	Pace Quote Reference:	
Requested Due Date/TAT:	Standard	Project Number:	COC #5	Pace Project Manager:	Jamie Church
				Pace Profile #:	15854, line 1

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOILSOLID SL OIL OIL AIR AR OT OT TS TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	DATE	TIME	DATE	TIME	# OF CONTAINERS	Preservatives HCl HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	Analysis Test Chloride/Fluoride/Sulfate App III and Cat/An Metals Alkalinity TDS Appendix IV Metals * Mercury Radium 226 Radium 228 Ferrous/Ferric Iron SM4500-S2D Sulfide	Requested Analysis Filtered (Y/N)	Temp in °C	Received on	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
		COMPOSITE START	COMPOSITE END/GRAB															RELINQUISHED BY / AFFILIATION
1				G	WT													
2	R-MW-B2			G	WT	4-26-23	1007	4-27-23	1345	62	3							
3	R-MW-B1			G	WT	4-27-23	0933			62	3							
4				G	WT													
5				G	WT													
6				G	WT													
7				G	WT													
8				G	WT													
9				G	WT													
10				G	WT													
11				G	WT													
12				G	WT													
<b>ADDITIONAL COMMENTS</b> *App III and Cat/An Metals - EPA 200.7, B, Ca, Fe, Mg, Mn, K, Na ** App IV Metals - EPA 200.7 - Ba, Be, Cd, Cr, Pb, Li, Mo 200.8 Metals - Sb, As, Cd, Cr, Se, Tl Radium 226/228 to Pace PA Gant Money WSP 4-27-23 1345 Gant Money WSP 4-27-23 1345 ACCEPTED BY / AFFILIATION: Gant Money DATE: 4/28/23 TIME: 0500 SAMPLE CONDITIONS: N Y Y Y Received on: 4/28/23 Custody Sealed Cooler (Y/N): Y Samples Intact (Y/N): Y																		

<b>SAMPLER NAME AND SIGNATURE</b>	
PRINT Name of SAMPLER:	Gant Money
SIGNATURE of SAMPLER:	<i>Gant Money</i>
DATE Signed (MM/DD/YYYY):	04/27/23

Client: Rocksmith Geoen

Profile #: BP/W- Radium

Notes: Append to 60426950

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1																														
2	WT																													
3	WT																													
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

Glass		Plastic		Misc.	
DG9B	40mL bisulfate clear vial	BP1C	1L NaOH plastic	I	Wipe/Swab
DG9H	40mL HCl amber vial	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U	1L unpreserved plastic	AF	Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C	500mL NaOH plastic	R	Terracore Kit
DG9U	40mL amber unpreserved	BP2N	500mL HNO3 plastic	U	Summa Can
VG9H	40mL HCl clear vial	BP2S	500mL H2SO4 plastic		
VG9T	40mL Na Thio. clear vial	BP2U	500mL unpreserved plastic		
VG9U	40mL unpreserved clear vial	BP2Z	500mL NaOH, Zn Acetate		
BG1S	1liter H2SO4 clear glass	BP3C	250mL NaOH plastic		
BG1U	1liter unpres glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water
BG3H	250mL HCL Clear glass	BP3N	250mL HNO3 plastic	SL	Solid
BG3U	250mL Unpres Clear glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid
WGDU	16oz clear soil jar	BP3S	250mL H2SO4 plastic	OL	OIL
		BP3Z	250mL NaOH, Zn Acetate	WP	Wipe
		BP4U	125mL unpreserved plastic	DW	Drinking Water
		BP4N	125mL HNO3 plastic		
		BP4S	125mL H2SO4 plastic		
		WPDU	16oz unpreserved plastic		

Work Order Number:

60426950



# Memorandum

June 7, 2023

---

**To:** Project File  
Rocksmith Geoengineering, LLC

**Project Number:** 23008

**CC:** Mark Haddock, Jeffrey Ingram

**From:** Grant Morey

**Email:** Grant.Morey@Rocksmithgeo.com

**RE:** **Data Validation Summary, Rush Island Energy Center – RCPA – Data Package 60426950**

---

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was analyzed outside of hold time, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering  
 Project Name: Ameren RCPA  
 Reviewer: G. Morey

Project Manager: J. Ingram  
 Project Number: 23008  
 Validation Date: 6/7/2023

Laboratory: Pace Analytical SDG #: 60426950  
 Analytical Method (type and no.): EPA 200.7/200.8/7470 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);  
 Matrix:  Air  Soil/Sed.  Water  Waste  SM 3500-FE (Ferric Iron); SM 4500-S-2 (Sulfide); EPA 903.1/904.0 (Radium 226+228)  
 Sample Names R-MW-4, R-MW-5, R-DUP-1, R-MW-1, R-MW-2, R-MW-3, R-MW-6, R-MW-7(R), R-FB-1, R-MS-1, R-MSD-1, R-MW-B2, R-MW-B1

**NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).**

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>4/21/2023 - 4/27/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>JSI, GTM</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Spec Cond, Turb, Temp, DO, ORP</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>No lab narrative.</u>
Note Deficiencies: <u></u>				

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R-DUP-1 collected @ R-MW-4
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
d) Were lab dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes

<b>Blind Standards</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Comments/Notes:**

General:

Ferrous iron samples were all analyzed outside of hold time. Results qualified as estimates.

Chloride and Sulfate were diluted in several samples, Sulfide diluted in R-MW-2; no qualification necessary.

## QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

### Comments/Notes:

Method Blanks:

3351703: Chloride (0.56J). Associated with samples -004 through -009. Most sample results > RL and 10x blank: no qualification. Sample -007 > RL and < 10x blank: qualified as estimate. Sample -009 < RL: qualified as ND (U).

Field Blanks:

R-FB-1 @ R-MW-7(R): Calcium (28.2J), Iron (11.3J), Manganese (0.49J), Molybdenum (1.1J), Chromium (0.69J), Ferric Iron (0.011J), Chloride (0.71J). Calcium, Iron, Manganese, Molybdenum, Ferric Iron, Chloride results > RL and 10x blank; no qualification necessary. Chromium result < RL, qualified as non-detect.

Duplicates:

R-DUP-1 @ R-MW-4: DUP RPD exceeds limit (20%) for Chromium (38%); results below PQL, no further qualification necessary.

Lab duplicate max RPD: 10%: Alkalinity, TDS; 15%: Chloride, Fluoride, Sulfate; 20%: Ferrous Iron, Sulfide

MS/MSD:

3347276: MS recovery high for Sodium, MS performed on unrelated sample, no qualification necessary.

3348228/3348229: MS/MSD recovery high for Sulfide, MS/MSD performed on unrelated sample; no qualification necessary.

3350051/3350052: MS/MSD recovery high for Chloride, MSD recovery low for Sulfate, MS/MSD performed on unrelated sample; no qualification necessary.







June 08, 2023

Mark Haddock  
Rocksmith Geoengineering, LLC.  
5233 Roanoke Drive  
Saint Charles, MO 63304

RE: Project: AMEREN RCPA-CA  
Pace Project No.: 60426948

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between April 22, 2023 and April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church  
jamie.church@pacelabs.com  
314-838-7223  
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.  
Grant Morey, Rocksmith Geoengineering, LLC.



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## CERTIFICATIONS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

### **Pace Analytical Services Pennsylvania**

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Florida: Cert E871149 SEKS WET

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

---

### **Pace Analytical Services Kansas**

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 88-00679

Illinois Certification #: 2000302023-5

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-22-16

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

---

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## SAMPLE SUMMARY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60426948001	R-P-05S	Water	04/21/23 11:25	04/22/23 04:59
60426948002	R-P-31S	Water	04/21/23 13:50	04/22/23 04:59
60426948003	R-P-10S	Water	04/25/23 13:34	04/26/23 05:44
60426948004	R-P-16S	Water	04/24/23 09:54	04/26/23 05:44
60426948005	R-P-17S	Water	04/24/23 13:22	04/26/23 05:44
60426948006	R-P-17I	Water	04/24/23 11:00	04/26/23 05:44
60426948007	R-P-17D	Water	04/24/23 14:04	04/26/23 05:44
60426948008	R-P-19S	Water	04/24/23 16:42	04/26/23 05:44
60426948009	R-P-19I	Water	04/24/23 17:20	04/26/23 05:44
60426948010	R-P-19D	Water	04/24/23 18:00	04/26/23 05:44
60426948011	R-P-21S	Water	04/24/23 15:45	04/26/23 05:44
60426948012	R-P-21I	Water	04/24/23 12:25	04/26/23 05:44
60426948013	R-P-21D	Water	04/24/23 13:25	04/26/23 05:44
60426948014	R-P-22S	Water	04/24/23 10:13	04/26/23 05:44
60426948015	R-P-22D	Water	04/24/23 10:45	04/26/23 05:44
60426948016	R-CA-DUP-1	Water	04/24/23 00:00	04/26/23 05:44
60426948017	R-CA-DUP-2	Water	04/24/23 00:00	04/26/23 05:44
60426948018	R-CA-FB-1	Water	04/24/23 09:15	04/26/23 05:44
60426948019	R-CA-FB-2	Water	04/25/23 13:44	04/26/23 05:44
60426948020	R-CA-MS-1	Water	04/24/23 10:45	04/26/23 05:44
60426948021	R-CA-MSD-1	Water	04/24/23 10:45	04/26/23 05:44
60426948022	R-P-29S	Water	04/26/23 14:15	04/28/23 05:00
60426948023	R-P-29D	Water	04/26/23 10:54	04/28/23 05:00
60426948024	R-P-30S	Water	04/27/23 11:13	04/28/23 05:00

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60426948001	R-P-05S	EPA 200.7	JXD	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	MRV	1	PASI-K		
		EPA 903.1	CLM	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
		SM 2540C	CRN2	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	MLD	1	PASI-K		
		SM 4500-S-2 D	MLD	1	PASI-K		
		EPA 300.0	CRN2, RKA	3	PASI-K		
		60426948002	R-P-31S	EPA 200.7	JXD	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	MRV			1	PASI-K		
EPA 903.1	CLM			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	JS2			1	PASI-K		
SM 2540C	CRN2			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		
SM 3500-Fe B#4	MLD			1	PASI-K		
SM 4500-S-2 D	MLD			1	PASI-K		
EPA 300.0	CRN2, RKA			3	PASI-K		
60426948003	R-P-10S			EPA 200.7	JXD	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K		
		EPA 903.1	CLM	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
		SM 2540C	CRN2	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	MLD	1	PASI-K		
		SM 4500-S-2 D	MLD	1	PASI-K		
		EPA 300.0	CRN2	3	PASI-K		
		60426948004	R-P-16S	EPA 200.7	JXD	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	MRV			1	PASI-K		
EPA 903.1	CLM			1	PASI-PA		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60426948005	R-P-17S	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60426948006	R-P-17I	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60426948007	R-P-17D	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60426948008	R-P-19S	SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
60426948009	R-P-19I	SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
60426948010	R-P-19D	SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60426948011	R-P-21S	SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60426948012	R-P-21I	EPA 200.8	JGP	6	PASI-K		
		EPA 7470	MRV	1	PASI-K		
		EPA 903.1	CLM	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
		SM 2540C	CRN2	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	MLD	1	PASI-K		
		SM 4500-S-2 D	MLD	1	PASI-K		
		EPA 300.0	RKA	3	PASI-K		
		EPA 200.7	JXD	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	MRV	1	PASI-K		
		EPA 903.1	JLJ	1	PASI-PA		
		EPA 904.0	JJS1	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
		SM 2540C	CRN2	1	PASI-K		
		60426948013	R-P-21D	SM 3500-Fe B#4	BLA	1	PASI-K
SM 3500-Fe B#4	MLD			1	PASI-K		
SM 4500-S-2 D	MLD			1	PASI-K		
EPA 300.0	RKA			3	PASI-K		
EPA 200.7	JXD			13	PASI-K		
EPA 200.8	JGP			6	PASI-K		
EPA 7470	MRV			1	PASI-K		
EPA 903.1	JLJ			1	PASI-PA		
EPA 904.0	JJS1			1	PASI-PA		
SM 2320B	JS2			1	PASI-K		
SM 2540C	CRN2			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		
SM 3500-Fe B#4	MLD			1	PASI-K		
SM 4500-S-2 D	MLD			1	PASI-K		
EPA 300.0	RKA			3	PASI-K		
60426948014	R-P-22S			EPA 200.7	JXD	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
				EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA		
		EPA 904.0	JJS1	1	PASI-PA		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60426948015	R-P-22D	SM 2320B	JS2	1	PASI-K		
		SM 2540C	CRN2	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	MLD	1	PASI-K		
		SM 4500-S-2 D	MLD	1	PASI-K		
		EPA 300.0	RKA	3	PASI-K		
		EPA 200.7	JXD	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	MRV	1	PASI-K		
		EPA 903.1	JLJ	1	PASI-PA		
		EPA 904.0	JJS1	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
		SM 2540C	CRN2	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	MLD	1	PASI-K		
		60426948016	R-CA-DUP-1	SM 4500-S-2 D	MLD	1	PASI-K
EPA 300.0	RKA			3	PASI-K		
EPA 200.7	JXD			13	PASI-K		
EPA 200.8	JGP			6	PASI-K		
EPA 7470	MRV			1	PASI-K		
EPA 903.1	JLJ			1	PASI-PA		
EPA 904.0	JJS1			1	PASI-PA		
SM 2320B	JS2			1	PASI-K		
SM 2540C	CRN2			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		
SM 3500-Fe B#4	MLD			1	PASI-K		
SM 4500-S-2 D	MLD			1	PASI-K		
EPA 300.0	RKA			3	PASI-K		
60426948017	R-CA-DUP-2			EPA 200.7	JXD	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
				EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA		
		EPA 904.0	JJS1	1	PASI-PA		
		SM 2320B	JS2	1	PASI-K		
		SM 2540C	CRN2	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	MLD	1	PASI-K		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60426948018	R-CA-FB-1	SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
60426948019	R-CA-FB-2	SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
60426948020	R-CA-MS-1	SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
60426948021	R-CA-MSD-1	EPA 300.0	RKA	3	PASI-K
		EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
60426948022	R-P-29S	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BLA	1	PASI-K
SM 3500-Fe B#4	BLA	1	PASI-K		
SM 3500-Fe B#4	MLD	1	PASI-K		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60426948023	R-P-29D	SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
60426948024	R-P-30S	SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
60426948024	R-P-30S	SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	MLD	1	PASI-K
		SM 4500-S-2 D	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-05S**      **Lab ID: 60426948001**      Collected: 04/21/23 11:25      Received: 04/22/23 04:59      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	211	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 09:25	7440-39-3	
Beryllium	0.25J	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 09:25	7440-41-7	
Boron	4390	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 09:25	7440-42-8	
Calcium	64700	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 09:25	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 09:25	7440-48-4	
Iron	11900	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 09:25	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 09:25	7439-92-1	
Lithium	14.5	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 09:25	7439-93-2	
Magnesium	22600	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 09:25	7439-95-4	
Manganese	321	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 09:25	7439-96-5	
Molybdenum	6.5J	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 09:25	7439-98-7	
Potassium	5840	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 09:25	7440-09-7	
Sodium	25000	ug/L	500	115	1	05/02/23 07:10	05/11/23 09:25	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 17:01	7440-36-0	
Arsenic	210	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 17:01	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 17:01	7440-43-9	
Chromium	0.73J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 17:01	7440-47-3	
Selenium	0.21J	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 17:01	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 17:01	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 11:44	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	290	mg/L	20.0	10.5	1		04/27/23 10:11		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	355	mg/L	5.0	5.0	1		04/28/23 12:42		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	11.7	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	0.24	mg/L	0.20	0.041	1		04/26/23 14:29	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-05S**      **Lab ID: 60426948001**      Collected: 04/21/23 11:25      Received: 04/22/23 04:59      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		04/28/23 15:13	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>24.7</b>	mg/L	2.0	1.1	2		05/10/23 01:03	16887-00-6	
Fluoride	<b>0.35</b>	mg/L	0.20	0.12	1		05/08/23 12:53	16984-48-8	
Sulfate	<b>2.5</b>	mg/L	1.0	0.55	1		05/08/23 12:53	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-31S**      **Lab ID: 60426948002**      Collected: 04/21/23 13:50      Received: 04/22/23 04:59      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	145	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 09:27	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 09:27	7440-41-7	
Boron	318	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 09:27	7440-42-8	
Calcium	59900	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 09:27	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 09:27	7440-48-4	
Iron	3930	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 09:27	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 09:27	7439-92-1	
Lithium	8.3J	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 09:27	7439-93-2	
Magnesium	10600	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 09:27	7439-95-4	
Manganese	1320	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 09:27	7439-96-5	
Molybdenum	9.7J	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 09:27	7439-98-7	
Potassium	3910	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 09:27	7440-09-7	
Sodium	11100	ug/L	500	115	1	05/02/23 07:10	05/11/23 09:27	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 17:04	7440-36-0	
Arsenic	22.0	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 17:04	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 17:04	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 17:04	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 17:04	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 17:04	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 11:47	7439-97-6	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	199	mg/L	20.0	10.5	1		04/27/23 10:17		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	255	mg/L	5.0	5.0	1		04/28/23 12:42		
<b>Iron, Ferric (Calculation)</b>		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	3.9	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		04/26/23 14:30	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-31S**      **Lab ID: 60426948002**      Collected: 04/21/23 13:50      Received: 04/22/23 04:59      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>0.021J</b>	mg/L	0.050	0.016	1		04/28/23 15:14	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>3.3</b>	mg/L	1.0	0.53	1		05/08/23 13:47	16887-00-6	
Fluoride	<b>0.44</b>	mg/L	0.20	0.12	1		05/08/23 13:47	16984-48-8	
Sulfate	<b>21.8</b>	mg/L	2.0	1.1	2		05/10/23 01:16	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Sample: R-P-10S Lab ID: 60426948003 Collected: 04/25/23 13:34 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	211	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 16:20	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 16:20	7440-41-7	
Boron	1410	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 16:20	7440-42-8	
Calcium	138000	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 16:20	7440-70-2	
Cobalt	3.6J	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 16:20	7440-48-4	
Iron	447	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 16:20	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 16:20	7439-92-1	
Lithium	25.8	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 16:20	7439-93-2	
Magnesium	19200	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 16:20	7439-95-4	
Manganese	2390	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 16:20	7439-96-5	
Molybdenum	49.3	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 16:20	7439-98-7	
Potassium	5920	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 16:20	7440-09-7	
Sodium	58800	ug/L	500	115	1	05/02/23 07:10	05/10/23 16:20	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 19:27	7440-36-0	
Arsenic	2.3	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 19:27	7440-38-2	
Cadmium	0.15J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 19:27	7440-43-9	
Chromium	0.66J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 19:27	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 19:27	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 19:27	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:19	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	458	mg/L	20.0	10.5	1		04/27/23 12:17		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	599	mg/L	10.0	10.0	1		04/28/23 12:39		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.45	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 14:04	15438-31-0	1e,H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-10S**      **Lab ID: 60426948003**      Collected: 04/25/23 13:34      Received: 04/26/23 05:44      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		04/28/23 15:23	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>11.9</b>	mg/L	1.0	0.53	1		05/17/23 16:55	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/17/23 16:55	16984-48-8	
Sulfate	<b>77.6</b>	mg/L	20.0	11.0	20		05/17/23 17:08	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Sample: R-P-16S Lab ID: 60426948004 Collected: 04/24/23 09:54 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	64.3	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 09:58	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 09:58	7440-41-7	
Boron	75.9J	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 09:58	7440-42-8	
Calcium	90500	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 09:58	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 09:58	7440-48-4	
Iron	85.5	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 09:58	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 09:58	7439-92-1	
Lithium	17.6	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 09:58	7439-93-2	
Magnesium	23500	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 09:58	7439-95-4	
Manganese	2.9J	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 09:58	7439-96-5	
Molybdenum	10.1J	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 09:58	7439-98-7	
Potassium	1490	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 09:58	7440-09-7	
Sodium	4980	ug/L	500	115	1	05/02/23 07:10	05/11/23 09:58	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 17:59	7440-36-0	
Arsenic	1.1	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 17:59	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 17:59	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 17:59	7440-47-3	
Selenium	2.5	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 17:59	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 17:59	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:21	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	322	mg/L	20.0	10.5	1		04/27/23 12:36		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	329	mg/L	10.0	10.0	1		04/28/23 12:39		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.086	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 13:51	15438-31-0	1e,H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-16S**      **Lab ID: 60426948004**      Collected: 04/24/23 09:54      Received: 04/26/23 05:44      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		04/28/23 15:24	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>1.1</b>	mg/L	1.0	0.53	1		05/09/23 15:12	16887-00-6	B
Fluoride	<b>0.31</b>	mg/L	0.20	0.12	1		05/09/23 15:12	16984-48-8	
Sulfate	<b>13.4</b>	mg/L	1.0	0.55	1		05/09/23 15:12	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Sample: R-P-17S Lab ID: 60426948005 Collected: 04/24/23 13:22 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	118	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 10:00	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 10:00	7440-41-7	
Boron	2820	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 10:00	7440-42-8	
Calcium	107000	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 10:00	7440-70-2	
Cobalt	1.4J	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 10:00	7440-48-4	
Iron	5000	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 10:00	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 10:00	7439-92-1	
Lithium	29.8	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 10:00	7439-93-2	
Magnesium	24100	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 10:00	7439-95-4	
Manganese	2140	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 10:00	7439-96-5	
Molybdenum	97.6	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 10:00	7439-98-7	
Potassium	3910	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 10:00	7440-09-7	
Sodium	114000	ug/L	500	115	1	05/02/23 07:10	05/11/23 10:00	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.18J	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 18:06	7440-36-0	
Arsenic	29.8	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 18:06	7440-38-2	
Cadmium	0.23J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 18:06	7440-43-9	
Chromium	0.67J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 18:06	7440-47-3	
Selenium	0.81J	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 18:06	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 18:06	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:23	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	312	mg/L	20.0	10.5	1		04/27/23 12:43		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	748	mg/L	10.0	10.0	1		04/28/23 12:39		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	4.9	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.11J	mg/L	0.20	0.041	1		05/08/23 14:03	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-17S**      **Lab ID: 60426948005**      Collected: 04/24/23 13:22      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		04/28/23 15:26	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>55.9</b>	mg/L	50.0	26.4	50		05/09/23 16:15	16887-00-6	B
Fluoride	<b>0.51</b>	mg/L	0.20	0.12	1		05/09/23 16:02	16984-48-8	
Sulfate	<b>243</b>	mg/L	50.0	27.5	50		05/09/23 16:15	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-17I**      **Lab ID: 60426948006**      Collected: 04/24/23 11:00      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	15.5	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 10:02	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 10:02	7440-41-7	
Boron	2480	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 10:02	7440-42-8	
Calcium	9590	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 10:02	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 10:02	7440-48-4	
Iron	246	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 10:02	7439-89-6	
Lead	7.9J	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 10:02	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 10:02	7439-93-2	
Magnesium	208	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 10:02	7439-95-4	
Manganese	5.0	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 10:02	7439-96-5	
Molybdenum	162	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 10:02	7439-98-7	
Potassium	2050	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 10:02	7440-09-7	
Sodium	236000	ug/L	500	115	1	05/02/23 07:10	05/11/23 10:02	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.31J	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 18:09	7440-36-0	
Arsenic	49.5	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 18:09	7440-38-2	
Cadmium	0.33J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 18:09	7440-43-9	
Chromium	0.92J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 18:09	7440-47-3	
Selenium	1.5	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 18:09	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 18:09	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:25	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	187	mg/L	20.0	10.5	1		04/27/23 12:49		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	770	mg/L	10.0	10.0	1		04/28/23 12:39		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.15	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.098J	mg/L	0.20	0.041	1		05/08/23 14:02	15438-31-0	H6

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-171**      **Lab ID: 60426948006**      Collected: 04/24/23 11:00      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>3.3</b>	mg/L	0.50	0.16	10		04/28/23 15:28	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>50.2</b>	mg/L	50.0	26.4	50		05/09/23 17:05	16887-00-6	
Fluoride	<b>1.5</b>	mg/L	0.20	0.12	1		05/09/23 16:53	16984-48-8	
Sulfate	<b>310</b>	mg/L	50.0	27.5	50		05/09/23 17:05	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Sample: R-P-17D Lab ID: 60426948007 Collected: 04/24/23 14:04 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	100	ug/L	5.0	0.64	1	05/02/23 07:10	05/11/23 10:10	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/11/23 10:10	7440-41-7	
Boron	7770	ug/L	100	6.4	1	05/02/23 07:10	05/11/23 10:10	7440-42-8	
Calcium	44000	ug/L	200	26.9	1	05/02/23 07:10	05/11/23 10:10	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/11/23 10:10	7440-48-4	
Iron	2510	ug/L	50.0	9.1	1	05/02/23 07:10	05/11/23 10:10	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/11/23 10:10	7439-92-1	
Lithium	35.5	ug/L	10.0	3.7	1	05/02/23 07:10	05/11/23 10:10	7439-93-2	
Magnesium	9350	ug/L	50.0	20.1	1	05/02/23 07:10	05/11/23 10:10	7439-95-4	
Manganese	397	ug/L	5.0	0.39	1	05/02/23 07:10	05/11/23 10:10	7439-96-5	
Molybdenum	679	ug/L	20.0	1.0	1	05/02/23 07:10	05/11/23 10:10	7439-98-7	
Potassium	7190	ug/L	500	69.7	1	05/02/23 07:10	05/11/23 10:10	7440-09-7	
Sodium	135000	ug/L	500	115	1	05/02/23 07:10	05/11/23 10:10	7440-23-5	M1
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 18:13	7440-36-0	
Arsenic	1.2	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 18:13	7440-38-2	
Cadmium	0.25J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 18:13	7440-43-9	
Chromium	0.35J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 18:13	7440-47-3	
Selenium	0.21J	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 18:13	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 18:13	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:28	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	261	mg/L	20.0	10.5	1		04/27/23 12:55		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	605	mg/L	10.0	10.0	1		04/28/23 12:39		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	2.4	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.13J	mg/L	0.20	0.041	1		05/08/23 14:04	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-17D**      **Lab ID: 60426948007**      Collected: 04/24/23 14:04      Received: 04/26/23 05:44      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>0.040J</b>	mg/L	0.050	0.016	1		04/28/23 15:31	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>26.6</b>	mg/L	5.0	2.6	5		05/10/23 20:19	16887-00-6	
Fluoride	<b>0.33</b>	mg/L	0.20	0.12	1		05/09/23 17:18	16984-48-8	
Sulfate	<b>256</b>	mg/L	50.0	27.5	50		05/09/23 17:31	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-19S**      **Lab ID: 60426948008**      Collected: 04/24/23 16:42      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	<b>224</b>	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 15:46	7440-39-3	
Beryllium	<b>0.17J</b>	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 15:46	7440-41-7	
Boron	<b>238</b>	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 15:46	7440-42-8	
Calcium	<b>130000</b>	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 15:46	7440-70-2	
Cobalt	<b>4.1J</b>	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 15:46	7440-48-4	
Iron	<b>4540</b>	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 15:46	7439-89-6	
Lead	<b>&lt;3.8</b>	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 15:46	7439-92-1	
Lithium	<b>32.0</b>	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 15:46	7439-93-2	
Magnesium	<b>22100</b>	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 15:46	7439-95-4	
Manganese	<b>1050</b>	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 15:46	7439-96-5	
Molybdenum	<b>5.9J</b>	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 15:46	7439-98-7	
Potassium	<b>6530</b>	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 15:46	7440-09-7	
Sodium	<b>11300</b>	ug/L	500	115	1	05/02/23 07:10	05/10/23 15:46	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	<b>&lt;0.12</b>	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 18:26	7440-36-0	
Arsenic	<b>8.2</b>	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 18:26	7440-38-2	
Cadmium	<b>&lt;0.050</b>	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 18:26	7440-43-9	
Chromium	<b>0.32J</b>	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 18:26	7440-47-3	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 18:26	7782-49-2	
Thallium	<b>&lt;0.14</b>	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 18:26	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<b>&lt;0.096</b>	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:35	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>392</b>	mg/L	20.0	10.5	1		04/27/23 13:01		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>462</b>	mg/L	10.0	10.0	1		04/28/23 12:39		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	<b>4.5</b>	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	<b>&lt;0.041</b>	mg/L	0.20	0.041	1		05/08/23 14:59	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-19S**      **Lab ID: 60426948008**      Collected: 04/24/23 16:42      Received: 04/26/23 05:44      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		04/28/23 15:32	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>1.1</b>	mg/L	1.0	0.53	1		05/09/23 17:43	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/09/23 17:43	16984-48-8	
Sulfate	<b>63.2</b>	mg/L	50.0	27.5	50		05/09/23 17:55	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-191**      **Lab ID: 60426948009**      Collected: 04/24/23 17:20      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	50.4	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 15:48	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 15:48	7440-41-7	
Boron	3630	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 15:48	7440-42-8	
Calcium	13700	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 15:48	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 15:48	7440-48-4	
Iron	74.0	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 15:48	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 15:48	7439-92-1	
Lithium	118	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 15:48	7439-93-2	
Magnesium	316	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 15:48	7439-95-4	
Manganese	2.6J	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 15:48	7439-96-5	
Molybdenum	193	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 15:48	7439-98-7	
Potassium	35100	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 15:48	7440-09-7	
Sodium	200000	ug/L	500	115	1	05/02/23 07:10	05/10/23 15:48	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.44J	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 18:29	7440-36-0	
Arsenic	28.5	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 18:29	7440-38-2	
Cadmium	0.094J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 18:29	7440-43-9	
Chromium	0.46J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 18:29	7440-47-3	
Selenium	0.49J	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 18:29	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 18:29	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:37	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	325	mg/L	20.0	10.5	1		04/27/23 13:08		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	682	mg/L	10.0	10.0	1		04/28/23 12:39		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.034J	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 15:00	15438-31-0	H6

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-19I**      **Lab ID: 60426948009**      Collected: 04/24/23 17:20      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>0.50</b>	mg/L	0.050	0.016	1		04/28/23 15:32	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>50.4</b>	mg/L	50.0	26.4	50		05/09/23 18:46	16887-00-6	
Fluoride	<b>0.32</b>	mg/L	0.20	0.12	1		05/09/23 18:33	16984-48-8	
Sulfate	<b>169</b>	mg/L	50.0	27.5	50		05/09/23 18:46	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Sample: R-P-19D Lab ID: 60426948010 Collected: 04/24/23 18:00 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	109	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 15:50	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 15:50	7440-41-7	
Boron	9590	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 15:50	7440-42-8	
Calcium	34600	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 15:50	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 15:50	7440-48-4	
Iron	2140	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 15:50	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 15:50	7439-92-1	
Lithium	20.3	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 15:50	7439-93-2	
Magnesium	4950	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 15:50	7439-95-4	
Manganese	298	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 15:50	7439-96-5	
Molybdenum	793	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 15:50	7439-98-7	
Potassium	3740	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 15:50	7440-09-7	
Sodium	181000	ug/L	500	115	1	05/02/23 07:10	05/10/23 15:50	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 18:33	7440-36-0	
Arsenic	0.64J	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 18:33	7440-38-2	
Cadmium	0.29J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 18:33	7440-43-9	
Chromium	0.53J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 18:33	7440-47-3	
Selenium	0.29J	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 18:33	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 18:33	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:39	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	240	mg/L	20.0	10.5	1		04/27/23 13:14		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	651	mg/L	10.0	10.0	1		04/28/23 12:39		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	1.8	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.37	mg/L	0.20	0.041	1		05/08/23 15:02	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-19D**      **Lab ID: 60426948010**      Collected: 04/24/23 18:00      Received: 04/26/23 05:44      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>0.023J</b>	mg/L	0.050	0.016	1		05/02/23 10:56	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>57.2</b>	mg/L	50.0	26.4	50		05/09/23 19:11	16887-00-6	
Fluoride	<b>1.6</b>	mg/L	0.20	0.12	1		05/09/23 18:58	16984-48-8	
Sulfate	<b>191</b>	mg/L	50.0	27.5	50		05/09/23 19:11	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Sample: R-P-21S Lab ID: 60426948011 Collected: 04/24/23 15:45 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	228	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 15:52	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 15:52	7440-41-7	
Boron	145	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 15:52	7440-42-8	
Calcium	130000	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 15:52	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 15:52	7440-48-4	
Iron	12300	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 15:52	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 15:52	7439-92-1	
Lithium	14.4	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 15:52	7439-93-2	
Magnesium	27000	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 15:52	7439-95-4	
Manganese	2080	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 15:52	7439-96-5	
Molybdenum	3.0J	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 15:52	7439-98-7	
Potassium	3590	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 15:52	7440-09-7	
Sodium	16500	ug/L	500	115	1	05/02/23 07:10	05/10/23 15:52	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 18:40	7440-36-0	
Arsenic	23.3	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 18:40	7440-38-2	
Cadmium	0.065J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 18:40	7440-43-9	
Chromium	0.31J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 18:40	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 18:40	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 18:40	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:41	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	441	mg/L	20.0	10.5	1		04/27/23 13:20		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	484	mg/L	10.0	10.0	1		04/28/23 12:39		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	12.3	mg/L	0.050		1		05/18/23 13:40	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 14:05	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-21S**      **Lab ID: 60426948011**      Collected: 04/24/23 15:45      Received: 04/26/23 05:44      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		05/02/23 10:57	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>2.1</b>	mg/L	1.0	0.53	1		05/09/23 19:24	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/09/23 19:24	16984-48-8	
Sulfate	<b>25.2</b>	mg/L	5.0	2.8	5		05/10/23 20:33	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-211**      **Lab ID: 60426948012**      Collected: 04/24/23 12:25      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	59.4	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 15:54	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 15:54	7440-41-7	
Boron	3890	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 15:54	7440-42-8	
Calcium	30000	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 15:54	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 15:54	7440-48-4	
Iron	307	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 15:54	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 15:54	7439-92-1	
Lithium	27.4	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 15:54	7439-93-2	
Magnesium	3220	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 15:54	7439-95-4	
Manganese	66.0	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 15:54	7439-96-5	
Molybdenum	298	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 15:54	7439-98-7	
Potassium	6130	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 15:54	7440-09-7	
Sodium	116000	ug/L	500	115	1	05/02/23 07:10	05/10/23 15:54	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 18:44	7440-36-0	
Arsenic	5.2	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 18:44	7440-38-2	
Cadmium	0.11J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 18:44	7440-43-9	
Chromium	0.55J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 18:44	7440-47-3	
Selenium	0.37J	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 18:44	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 18:44	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:53	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	171	mg/L	20.0	10.5	1		04/27/23 13:28		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	431	mg/L	10.0	10.0	1		04/28/23 12:40		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.18	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.13J	mg/L	0.20	0.041	1		05/08/23 14:02	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-211**      **Lab ID: 60426948012**      Collected: 04/24/23 12:25      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>0.046J</b>	mg/L	0.050	0.016	1		05/02/23 10:57	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>99.5</b>	mg/L	50.0	26.4	50		05/09/23 20:01	16887-00-6	
Fluoride	<b>0.65</b>	mg/L	0.20	0.12	1		05/09/23 19:49	16984-48-8	
Sulfate	<b>96.6</b>	mg/L	50.0	27.5	50		05/09/23 20:01	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Sample: R-P-21D Lab ID: 60426948013 Collected: 04/24/23 13:25 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	161	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 15:56	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 15:56	7440-41-7	
Boron	4560	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 15:56	7440-42-8	
Calcium	131000	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 15:56	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 15:56	7440-48-4	
Iron	3100	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 15:56	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 15:56	7439-92-1	
Lithium	191	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 15:56	7439-93-2	
Magnesium	48100	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 15:56	7439-95-4	
Manganese	1000	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 15:56	7439-96-5	
Molybdenum	395	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 15:56	7439-98-7	
Potassium	11600	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 15:56	7440-09-7	
Sodium	462000	ug/L	500	115	1	05/02/23 07:10	05/10/23 15:56	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 18:48	7440-36-0	
Arsenic	0.57J	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 18:48	7440-38-2	
Cadmium	0.15J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 18:48	7440-43-9	
Chromium	0.48J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 18:48	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 18:48	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 18:48	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:55	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	249	mg/L	20.0	10.5	1		04/27/23 13:34		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1710	mg/L	66.7	66.7	1		04/28/23 12:40		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	3.0	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.11J	mg/L	0.20	0.041	1		05/08/23 14:03	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-21D**      **Lab ID: 60426948013**      Collected: 04/24/23 13:25      Received: 04/26/23 05:44      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		05/02/23 10:58	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>894</b>	mg/L	50.0	26.4	50		05/09/23 20:27	16887-00-6	
Fluoride	<b>0.67</b>	mg/L	0.20	0.12	1		05/09/23 20:14	16984-48-8	
Sulfate	<b>150</b>	mg/L	50.0	27.5	50		05/09/23 20:27	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-22S**      **Lab ID: 60426948014**      Collected: 04/24/23 10:13      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	156	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 15:58	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 15:58	7440-41-7	
Boron	516	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 15:58	7440-42-8	
Calcium	171000	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 15:58	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 15:58	7440-48-4	
Iron	6790	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 15:58	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 15:58	7439-92-1	
Lithium	54.6	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 15:58	7439-93-2	
Magnesium	38100	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 15:58	7439-95-4	
Manganese	779	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 15:58	7439-96-5	
Molybdenum	13.6J	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 15:58	7439-98-7	
Potassium	7260	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 15:58	7440-09-7	
Sodium	59700	ug/L	500	115	1	05/02/23 07:10	05/10/23 15:58	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 18:51	7440-36-0	
Arsenic	6.0	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 18:51	7440-38-2	
Cadmium	0.093J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 18:51	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 18:51	7440-47-3	
Selenium	0.23J	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 18:51	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 18:51	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 12:58	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	465	mg/L	20.0	10.5	1		04/27/23 13:51		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	776	mg/L	13.3	13.3	1		04/28/23 12:40		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	6.6	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.14J	mg/L	0.20	0.041	1		05/08/23 13:52	15438-31-0	H6

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-22S**      **Lab ID: 60426948014**      Collected: 04/24/23 10:13      Received: 04/26/23 05:44      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		05/02/23 10:58	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>60.3</b>	mg/L	50.0	26.4	50		05/09/23 21:17	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/09/23 21:04	16984-48-8	
Sulfate	<b>178</b>	mg/L	50.0	27.5	50		05/09/23 21:17	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Sample: R-P-22D Lab ID: 60426948015 Collected: 04/24/23 10:45 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	69.4	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 16:06	7440-39-3	
Beryllium	0.14J	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 16:06	7440-41-7	
Boron	9490	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 16:06	7440-42-8	M1
Calcium	22100	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 16:06	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 16:06	7440-48-4	
Iron	1450	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 16:06	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 16:06	7439-92-1	
Lithium	24.0	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 16:06	7439-93-2	
Magnesium	3100	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 16:06	7439-95-4	
Manganese	75.0	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 16:06	7439-96-5	
Molybdenum	363	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 16:06	7439-98-7	
Potassium	4470	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 16:06	7440-09-7	
Sodium	187000	ug/L	500	115	1	05/02/23 07:10	05/10/23 16:06	7440-23-5	M1
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.19J	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 18:55	7440-36-0	
Arsenic	10.3	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 18:55	7440-38-2	
Cadmium	0.17J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 18:55	7440-43-9	
Chromium	1.6	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 18:55	7440-47-3	
Selenium	0.97J	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 18:55	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 18:55	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 13:00	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	292	mg/L	20.0	10.5	1		04/27/23 13:58		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	583	mg/L	10.0	10.0	1		04/28/23 12:40		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	1.5	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 13:56	15438-31-0	1e,H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-22D**      **Lab ID: 60426948015**      Collected: 04/24/23 10:45      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		05/02/23 10:58	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>28.8</b>	mg/L	10.0	5.3	10		05/10/23 21:13	16887-00-6	
Fluoride	<b>2.0</b>	mg/L	0.20	0.12	1		05/09/23 21:30	16984-48-8	
Sulfate	<b>96.4</b>	mg/L	10.0	5.5	10		05/10/23 21:13	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Sample: R-CA-DUP-1 Lab ID: 60426948016 Collected: 04/24/23 00:00 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	60.4	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 16:12	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 16:12	7440-41-7	
Boron	4060	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 16:12	7440-42-8	
Calcium	31000	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 16:12	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 16:12	7440-48-4	
Iron	316	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 16:12	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 16:12	7439-92-1	
Lithium	27.3	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 16:12	7439-93-2	
Magnesium	3390	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 16:12	7439-95-4	
Manganese	69.6	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 16:12	7439-96-5	
Molybdenum	322	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 16:12	7439-98-7	
Potassium	6330	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 16:12	7440-09-7	
Sodium	121000	ug/L	500	115	1	05/02/23 07:10	05/10/23 16:12	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 19:09	7440-36-0	
Arsenic	5.3	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 19:09	7440-38-2	
Cadmium	0.12J	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 19:09	7440-43-9	
Chromium	0.70J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 19:09	7440-47-3	
Selenium	0.40J	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 19:09	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 19:09	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 13:07	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	171	mg/L	20.0	10.5	1		04/27/23 14:12		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	441	mg/L	10.0	10.0	1		04/28/23 12:40		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.19	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.12J	mg/L	0.20	0.041	1		05/08/23 13:50	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-CA-DUP-1**      **Lab ID: 60426948016**      Collected: 04/24/23 00:00      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>0.047J</b>	mg/L	0.050	0.016	1		05/02/23 11:00	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>52.0</b>	mg/L	10.0	5.3	10		05/10/23 22:06	16887-00-6	
Fluoride	<b>0.65</b>	mg/L	0.20	0.12	1		05/09/23 22:20	16984-48-8	
Sulfate	<b>88.5</b>	mg/L	10.0	5.5	10		05/10/23 22:06	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Sample: R-CA-DUP-2 Lab ID: 60426948017 Collected: 04/24/23 00:00 Received: 04/26/23 05:44 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	66.3	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 16:14	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 16:14	7440-41-7	
Boron	80.9J	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 16:14	7440-42-8	
Calcium	93400	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 16:14	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 16:14	7440-48-4	
Iron	66.6	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 16:14	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 16:14	7439-92-1	
Lithium	19.5	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 16:14	7439-93-2	
Magnesium	24100	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 16:14	7439-95-4	
Manganese	2.6J	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 16:14	7439-96-5	
Molybdenum	12.1J	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 16:14	7439-98-7	
Potassium	1510	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 16:14	7440-09-7	
Sodium	5250	ug/L	500	115	1	05/02/23 07:10	05/10/23 16:14	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 19:13	7440-36-0	
Arsenic	1.1	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 19:13	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 19:13	7440-43-9	
Chromium	0.49J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 19:13	7440-47-3	
Selenium	2.7	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 19:13	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 19:13	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 13:09	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	320	mg/L	20.0	10.5	1		04/27/23 14:18		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	325	mg/L	5.0	5.0	1		05/02/23 11:12		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.067	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 13:50	15438-31-0	1e,H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-CA-DUP-2**      **Lab ID: 60426948017**      Collected: 04/24/23 00:00      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		05/02/23 11:00	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>1.1</b>	mg/L	1.0	0.53	1		05/09/23 22:32	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/09/23 22:32	16984-48-8	
Sulfate	<b>13.4</b>	mg/L	1.0	0.55	1		05/09/23 22:32	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-CA-FB-1**      **Lab ID: 60426948018**      Collected: 04/24/23 09:15      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<0.64	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 16:16	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 16:16	7440-41-7	
Boron	<6.4	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 16:16	7440-42-8	
Calcium	28.9J	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 16:16	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 16:16	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 16:16	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 16:16	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 16:16	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 16:16	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 16:16	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 16:16	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 16:16	7440-09-7	
Sodium	<115	ug/L	500	115	1	05/02/23 07:10	05/10/23 16:16	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 19:17	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 19:17	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 19:17	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 19:17	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 19:17	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 19:17	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 13:16	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		04/27/23 14:24		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	23.5	mg/L	5.0	5.0	1		05/02/23 11:12		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.090J	mg/L	0.20	0.041	1		05/08/23 13:51	15438-31-0	H6

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-CA-FB-1**      **Lab ID: 60426948018**      Collected: 04/24/23 09:15      Received: 04/26/23 05:44      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		05/02/23 11:00	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>0.63J</b>	mg/L	1.0	0.53	1		05/09/23 22:45	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/09/23 22:45	16984-48-8	
Sulfate	<b>&lt;0.55</b>	mg/L	1.0	0.55	1		05/09/23 22:45	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-CA-FB-2**      **Lab ID: 60426948019**      Collected: 04/25/23 13:44      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	<0.64	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 16:18	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 16:18	7440-41-7	
Boron	<6.4	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 16:18	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 16:18	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 16:18	7440-48-4	
Iron	<9.1	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 16:18	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 16:18	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 16:18	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 16:18	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 16:18	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 16:18	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 16:18	7440-09-7	
Sodium	<115	ug/L	500	115	1	05/02/23 07:10	05/10/23 16:18	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 19:24	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 19:24	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 19:24	7440-43-9	
Chromium	<0.30	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 19:24	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 19:24	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 19:24	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 13:18	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		04/27/23 14:27		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	7.5	mg/L	5.0	5.0	1		05/02/23 11:12		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	0.0000000 0010J	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 14:04	15438-31-0	H6

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-CA-FB-2**      **Lab ID: 60426948019**      Collected: 04/25/23 13:44      Received: 04/26/23 05:44      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		05/02/23 11:01	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>0.62J</b>	mg/L	1.0	0.53	1		05/09/23 22:57	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/09/23 22:57	16984-48-8	
Sulfate	<b>&lt;0.55</b>	mg/L	1.0	0.55	1		05/09/23 22:57	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-29S**      **Lab ID: 60426948022**      Collected: 04/26/23 14:15      Received: 04/28/23 05:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	<b>487</b>	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 16:30	7440-39-3	
Beryllium	<b>&lt;0.12</b>	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 16:30	7440-41-7	
Boron	<b>99.5J</b>	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 16:30	7440-42-8	
Calcium	<b>182000</b>	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 16:30	7440-70-2	
Cobalt	<b>2.2J</b>	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 16:30	7440-48-4	
Iron	<b>18500</b>	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 16:30	7439-89-6	
Lead	<b>&lt;3.8</b>	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 16:30	7439-92-1	
Lithium	<b>28.3</b>	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 16:30	7439-93-2	
Magnesium	<b>40600</b>	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 16:30	7439-95-4	
Manganese	<b>863</b>	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 16:30	7439-96-5	
Molybdenum	<b>1.5J</b>	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 16:30	7439-98-7	
Potassium	<b>6390</b>	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 16:30	7440-09-7	
Sodium	<b>18600</b>	ug/L	500	115	1	05/02/23 07:10	05/10/23 16:30	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<b>&lt;0.12</b>	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 19:31	7440-36-0	
Arsenic	<b>46.2</b>	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 19:31	7440-38-2	
Cadmium	<b>&lt;0.050</b>	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 19:31	7440-43-9	
Chromium	<b>&lt;0.30</b>	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 19:31	7440-47-3	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 19:31	7782-49-2	
Thallium	<b>&lt;0.14</b>	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 19:31	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<b>&lt;0.096</b>	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 13:20	7439-97-6	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<b>587</b>	mg/L	20.0	10.5	1		05/01/23 15:22		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<b>705</b>	mg/L	13.3	13.3	1		05/03/23 13:41		
<b>Iron, Ferric (Calculation)</b>		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	<b>18.3</b>	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<b>0.14J</b>	mg/L	0.20	0.041	1		05/08/23 15:08	15438-31-0	H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-29S**      **Lab ID: 60426948022**    Collected: 04/26/23 14:15    Received: 04/28/23 05:00    Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		05/03/23 14:08	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>36.2</b>	mg/L	10.0	5.3	10		05/10/23 22:20	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/09/23 23:35	16984-48-8	
Sulfate	<b>28.5</b>	mg/L	10.0	5.5	10		05/10/23 22:20	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-29D**      **Lab ID: 60426948023**      Collected: 04/26/23 10:54      Received: 04/28/23 05:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	158	ug/L	5.0	0.64	1	05/02/23 07:10	05/10/23 16:32	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 16:32	7440-41-7	
Boron	83.0J	ug/L	100	6.4	1	05/02/23 07:10	05/10/23 16:32	7440-42-8	
Calcium	93300	ug/L	200	26.9	1	05/02/23 07:10	05/10/23 16:32	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:10	05/10/23 16:32	7440-48-4	
Iron	3960	ug/L	50.0	9.1	1	05/02/23 07:10	05/10/23 16:32	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:10	05/10/23 16:32	7439-92-1	
Lithium	46.5	ug/L	10.0	3.7	1	05/02/23 07:10	05/10/23 16:32	7439-93-2	
Magnesium	26800	ug/L	50.0	20.1	1	05/02/23 07:10	05/10/23 16:32	7439-95-4	
Manganese	151	ug/L	5.0	0.39	1	05/02/23 07:10	05/10/23 16:32	7439-96-5	
Molybdenum	1.0J	ug/L	20.0	1.0	1	05/02/23 07:10	05/10/23 16:32	7439-98-7	
Potassium	4670	ug/L	500	69.7	1	05/02/23 07:10	05/10/23 16:32	7440-09-7	
Sodium	67900	ug/L	500	115	1	05/02/23 07:10	05/10/23 16:32	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:10	05/10/23 19:35	7440-36-0	
Arsenic	1.1	ug/L	1.0	0.13	1	05/02/23 07:10	05/10/23 19:35	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:10	05/10/23 19:35	7440-43-9	
Chromium	0.76J	ug/L	1.0	0.30	1	05/02/23 07:10	05/10/23 19:35	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/02/23 07:10	05/10/23 19:35	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:10	05/10/23 19:35	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 13:23	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	322	mg/L	20.0	10.5	1		05/01/23 15:40		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	900	mg/L	10.0	10.0	1		05/03/23 13:41		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	3.9	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 15:07	15438-31-0	H6

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

**Sample: R-P-29D**      **Lab ID: 60426948023**      Collected: 04/26/23 10:54      Received: 04/28/23 05:00      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		05/03/23 14:08	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>112</b>	mg/L	10.0	5.3	10		05/10/23 22:33	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/09/23 23:48	16984-48-8	
Sulfate	<b>27.8</b>	mg/L	10.0	5.5	10		05/10/23 22:33	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Sample: R-P-30S Lab ID: 60426948024 Collected: 04/27/23 11:13 Received: 04/28/23 05:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	97.2	ug/L	5.0	0.64	1	05/02/23 07:00	05/10/23 16:44	7440-39-3	
Beryllium	<0.12	ug/L	1.0	0.12	1	05/02/23 07:00	05/10/23 16:44	7440-41-7	
Boron	830	ug/L	100	6.4	1	05/02/23 07:00	05/10/23 16:44	7440-42-8	
Calcium	136000	ug/L	200	26.9	1	05/02/23 07:00	05/10/23 16:44	7440-70-2	
Cobalt	<1.2	ug/L	5.0	1.2	1	05/02/23 07:00	05/10/23 16:44	7440-48-4	
Iron	817	ug/L	50.0	9.1	1	05/02/23 07:00	05/10/23 16:44	7439-89-6	1e
Lead	<3.8	ug/L	10.0	3.8	1	05/02/23 07:00	05/10/23 16:44	7439-92-1	
Lithium	34.1	ug/L	10.0	3.7	1	05/02/23 07:00	05/10/23 16:44	7439-93-2	
Magnesium	22200	ug/L	50.0	20.1	1	05/02/23 07:00	05/10/23 16:44	7439-95-4	
Manganese	330	ug/L	5.0	0.39	1	05/02/23 07:00	05/10/23 16:44	7439-96-5	
Molybdenum	5.6J	ug/L	20.0	1.0	1	05/02/23 07:00	05/10/23 16:44	7439-98-7	
Potassium	6410	ug/L	500	69.7	1	05/02/23 07:00	05/10/23 16:44	7440-09-7	
Sodium	56500	ug/L	500	115	1	05/02/23 07:00	05/10/23 16:44	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	05/02/23 07:00	05/10/23 19:53	7440-36-0	
Arsenic	1.2	ug/L	1.0	0.13	1	05/02/23 07:00	05/10/23 19:53	7440-38-2	
Cadmium	<0.050	ug/L	0.50	0.050	1	05/02/23 07:00	05/10/23 19:53	7440-43-9	
Chromium	0.31J	ug/L	1.0	0.30	1	05/02/23 07:00	05/10/23 19:53	7440-47-3	
Selenium	0.23J	ug/L	1.0	0.18	1	05/02/23 07:00	05/10/23 19:53	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/02/23 07:00	05/10/23 19:53	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	05/16/23 18:59	05/17/23 13:26	7439-97-6	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	374	mg/L	20.0	10.5	1		05/01/23 16:08		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	692	mg/L	10.0	10.0	1		05/04/23 14:18		
<b>Iron, Ferric (Calculation)</b>		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.82	mg/L	0.050		1		05/18/23 13:41	20074-52-6	
<b>Iron, Ferrous</b>		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	<0.041	mg/L	0.20	0.041	1		05/08/23 15:10	15438-31-0	1e,H6

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-30S**      **Lab ID: 60426948024**      Collected: 04/27/23 11:13      Received: 04/28/23 05:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.016</b>	mg/L	0.050	0.016	1		05/03/23 14:15	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>48.2</b>	mg/L	10.0	5.3	10		05/10/23 22:46	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		05/10/23 00:00	16984-48-8	
Sulfate	<b>128</b>	mg/L	10.0	5.5	10		05/10/23 22:46	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch:	847479	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948001, 60426948002, 60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011

METHOD BLANK: 3357955 Matrix: Water

Associated Lab Samples: 60426948001, 60426948002, 60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	05/17/23 11:40	

LABORATORY CONTROL SAMPLE: 3357956

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3357957 3357958

Parameter	Units	60426950007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	5.0	4.9	98	97	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch:	847480	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019, 60426948022, 60426948023, 60426948024		

METHOD BLANK:	3357959	Matrix:	Water
Associated Lab Samples:	60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019, 60426948022, 60426948023, 60426948024		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	05/17/23 12:48	

LABORATORY CONTROL SAMPLE: 3357960						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3357961											3357962		
Parameter	Units	60426948015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Mercury	ug/L	<0.096	5	5	4.3	4.3	86	86	75-125	0	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 844567 Analysis Method: EPA 200.7  
 QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total  
 Laboratory: Pace Analytical Services - Kansas City  
 Associated Lab Samples: 60426948001, 60426948002, 60426948004, 60426948005, 60426948006, 60426948007

METHOD BLANK: 3347271 Matrix: Water  
 Associated Lab Samples: 60426948001, 60426948002, 60426948004, 60426948005, 60426948006, 60426948007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	05/11/23 09:21	
Beryllium	ug/L	<0.12	1.0	0.12	05/11/23 09:21	
Boron	ug/L	<6.4	100	6.4	05/11/23 09:21	
Calcium	ug/L	<26.9	200	26.9	05/11/23 09:21	
Cobalt	ug/L	<1.2	5.0	1.2	05/11/23 09:21	
Iron	ug/L	<9.1	50.0	9.1	05/11/23 09:21	
Lead	ug/L	<3.8	10.0	3.8	05/11/23 09:21	
Lithium	ug/L	<3.7	10.0	3.7	05/11/23 09:21	
Magnesium	ug/L	<20.1	50.0	20.1	05/11/23 09:21	
Manganese	ug/L	<0.39	5.0	0.39	05/11/23 09:21	
Molybdenum	ug/L	<1.0	20.0	1.0	05/11/23 09:21	
Potassium	ug/L	<69.7	500	69.7	05/11/23 09:21	
Sodium	ug/L	<115	500	115	05/11/23 09:21	

LABORATORY CONTROL SAMPLE: 3347272

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1000	100	85-115	
Beryllium	ug/L	1000	1040	104	85-115	
Boron	ug/L	1000	963	96	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	10600	106	85-115	
Lead	ug/L	1000	998	100	85-115	
Lithium	ug/L	1000	1000	100	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1090	109	85-115	
Molybdenum	ug/L	1000	1030	103	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10100	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347273 3347274

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60426950007	Result	Spike Conc.	Spike Conc.						
Barium	ug/L	124	1000	1000	1130	1110	101	99	70-130	2	20
Beryllium	ug/L	<0.12	1000	1000	1040	1020	104	102	70-130	2	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
 without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347273 3347274												
Parameter	Units	60426950007		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Boron	ug/L	625	1000	1000	1590	1560	96	94	70-130	2	20	
Calcium	ug/L	86800	10000	10000	96000	95300	92	85	70-130	1	20	
Cobalt	ug/L	<1.2	1000	1000	1030	1040	103	104	70-130	1	20	
Iron	ug/L	131	10000	10000	10900	10700	108	106	70-130	2	20	
Lead	ug/L	<3.8	1000	1000	995	987	100	99	70-130	1	20	
Lithium	ug/L	<3.7	1000	1000	1030	1010	103	101	70-130	2	20	
Magnesium	ug/L	12200	10000	10000	22100	21900	99	97	70-130	1	20	
Manganese	ug/L	95.7	1000	1000	1130	1130	104	103	70-130	0	20	
Molybdenum	ug/L	2.3J	1000	1000	1050	1060	104	106	70-130	2	20	
Potassium	ug/L	1440	10000	10000	11600	11400	102	99	70-130	2	20	
Sodium	ug/L	14200	10000	10000	24300	23900	101	97	70-130	2	20	

MATRIX SPIKE SAMPLE: 3347276								
Parameter	Units	60426948007		Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
		Result	Spike Conc.					
Barium	ug/L	100	1000	1000	1100	100	70-130	
Beryllium	ug/L	<0.12	1000	1000	1020	102	70-130	
Boron	ug/L	7770	1000	1000	8990	123	70-130	
Calcium	ug/L	44000	10000	10000	55400	114	70-130	
Cobalt	ug/L	<1.2	1000	1000	1010	101	70-130	
Iron	ug/L	2510	10000	10000	13000	105	70-130	
Lead	ug/L	<3.8	1000	1000	973	97	70-130	
Lithium	ug/L	35.5	1000	1000	1050	101	70-130	
Magnesium	ug/L	9350	10000	10000	19600	102	70-130	
Manganese	ug/L	397	1000	1000	1410	101	70-130	
Molybdenum	ug/L	679	1000	1000	1720	104	70-130	
Potassium	ug/L	7190	10000	10000	17500	103	70-130	
Sodium	ug/L	135000	10000	10000	148000	138	70-130	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch:	844570	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948003, 60426948008, 60426948009, 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019, 60426948022, 60426948023

METHOD BLANK: 3347282 Matrix: Water

Associated Lab Samples: 60426948003, 60426948008, 60426948009, 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019, 60426948022, 60426948023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	05/10/23 15:42	
Beryllium	ug/L	<0.12	1.0	0.12	05/10/23 15:42	
Boron	ug/L	<6.4	100	6.4	05/10/23 15:42	
Calcium	ug/L	<26.9	200	26.9	05/10/23 15:42	
Cobalt	ug/L	<1.2	5.0	1.2	05/10/23 15:42	
Iron	ug/L	<9.1	50.0	9.1	05/10/23 15:42	
Lead	ug/L	<3.8	10.0	3.8	05/10/23 15:42	
Lithium	ug/L	<3.7	10.0	3.7	05/10/23 15:42	
Magnesium	ug/L	<20.1	50.0	20.1	05/10/23 15:42	
Manganese	ug/L	<0.39	5.0	0.39	05/10/23 15:42	
Molybdenum	ug/L	<1.0	20.0	1.0	05/10/23 15:42	
Potassium	ug/L	<69.7	500	69.7	05/10/23 15:42	
Sodium	ug/L	<115	500	115	05/10/23 15:42	

LABORATORY CONTROL SAMPLE: 3347283

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	987	99	85-115	
Beryllium	ug/L	1000	1050	105	85-115	
Boron	ug/L	1000	962	96	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Cobalt	ug/L	1000	1070	107	85-115	
Iron	ug/L	10000	10400	104	85-115	
Lead	ug/L	1000	1030	103	85-115	
Lithium	ug/L	1000	1010	101	85-115	
Magnesium	ug/L	10000	9930	99	85-115	
Manganese	ug/L	1000	1060	106	85-115	
Molybdenum	ug/L	1000	1080	108	85-115	
Potassium	ug/L	10000	9860	99	85-115	
Sodium	ug/L	10000	10200	102	85-115	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347284 3347285											
Parameter	Units	60426948015		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Barium	ug/L	69.4	1000	1000	1000	1040	1090	97	102	70-130	5 20
Beryllium	ug/L	0.14J	1000	1000	1000	1040	1050	104	105	70-130	1 20
Boron	ug/L	9490	1000	1000	1000	10000	10300	51	86	70-130	3 20 M1
Calcium	ug/L	22100	10000	10000	10000	30800	32200	87	101	70-130	4 20
Cobalt	ug/L	<1.2	1000	1000	1000	1070	1060	107	106	70-130	1 20
Iron	ug/L	1450	10000	10000	10000	11600	12600	102	112	70-130	8 20
Lead	ug/L	<3.8	1000	1000	1000	1000	1030	100	103	70-130	3 20
Lithium	ug/L	24.0	1000	1000	1000	1020	1070	99	104	70-130	5 20
Magnesium	ug/L	3100	10000	10000	10000	12500	13000	94	99	70-130	4 20
Manganese	ug/L	75.0	1000	1000	1000	1120	1120	105	104	70-130	1 20
Molybdenum	ug/L	363	1000	1000	1000	1450	1430	109	107	70-130	1 20
Potassium	ug/L	4470	10000	10000	10000	14100	14900	96	104	70-130	5 20
Sodium	ug/L	187000	10000	10000	10000	189000	195000	25	83	70-130	3 20 M1

MATRIX SPIKE SAMPLE: 3347286								
Parameter	Units	60426948003		Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.		Result	% Rec		
Barium	ug/L	211	1000	1000	1220	101	70-130	
Beryllium	ug/L	<0.12	1000	1000	1040	104	70-130	
Boron	ug/L	1410	1000	1000	2420	101	70-130	
Calcium	ug/L	138000	10000	10000	149000	108	70-130	
Cobalt	ug/L	3.6J	1000	1000	1050	105	70-130	
Iron	ug/L	447	10000	10000	11400	109	70-130	
Lead	ug/L	<3.8	1000	1000	1020	102	70-130	
Lithium	ug/L	25.8	1000	1000	1070	104	70-130	
Magnesium	ug/L	19200	10000	10000	29200	101	70-130	
Manganese	ug/L	2390	1000	1000	3390	100	70-130	
Molybdenum	ug/L	49.3	1000	1000	1130	108	70-130	
Potassium	ug/L	5920	10000	10000	16400	105	70-130	
Sodium	ug/L	58800	10000	10000	70000	112	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 844573

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948024

METHOD BLANK: 3347293

Matrix: Water

Associated Lab Samples: 60426948024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	05/10/23 16:40	
Beryllium	ug/L	<0.12	1.0	0.12	05/10/23 16:40	
Boron	ug/L	<6.4	100	6.4	05/10/23 16:40	
Calcium	ug/L	<26.9	200	26.9	05/10/23 16:40	
Cobalt	ug/L	<1.2	5.0	1.2	05/10/23 16:40	
Iron	ug/L	<9.1	50.0	9.1	05/10/23 16:40	
Lead	ug/L	<3.8	10.0	3.8	05/10/23 16:40	
Lithium	ug/L	<3.7	10.0	3.7	05/10/23 16:40	
Magnesium	ug/L	<20.1	50.0	20.1	05/10/23 16:40	
Manganese	ug/L	<0.39	5.0	0.39	05/10/23 16:40	
Molybdenum	ug/L	<1.0	20.0	1.0	05/10/23 16:40	
Potassium	ug/L	<69.7	500	69.7	05/10/23 16:40	
Sodium	ug/L	<115	500	115	05/10/23 16:40	

LABORATORY CONTROL SAMPLE: 3347294

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Beryllium	ug/L	1000	1030	103	85-115	
Boron	ug/L	1000	977	98	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Cobalt	ug/L	1000	1070	107	85-115	
Iron	ug/L	10000	10900	109	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1040	104	85-115	
Magnesium	ug/L	10000	9900	99	85-115	
Manganese	ug/L	1000	1060	106	85-115	
Molybdenum	ug/L	1000	1070	107	85-115	
Potassium	ug/L	10000	10200	102	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347295 3347296

Parameter	Units	60426948024		MSD		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Barium	ug/L	97.2	1000	1000	1100	1080	100	98	70-130	2	20		
Beryllium	ug/L	<0.12	1000	1000	1000	1010	100	101	70-130	1	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347295 3347296														
Parameter	Units	60426948024		MS	MSD	3347296		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	MS Result	MSD Result							
Boron	ug/L	830	1000	1000	1820	1770	99	94	70-130	2	20			
Calcium	ug/L	136000	10000	10000	148000	146000	117	95	70-130	1	20			
Cobalt	ug/L	<1.2	1000	1000	1040	1030	104	103	70-130	0	20			
Iron	ug/L	817	10000	10000	11600	11300	108	105	70-130	2	20			
Lead	ug/L	<3.8	1000	1000	1010	994	101	99	70-130	1	20			
Lithium	ug/L	34.1	1000	1000	1060	1030	103	100	70-130	3	20			
Magnesium	ug/L	22200	10000	10000	32200	31500	101	93	70-130	2	20			
Manganese	ug/L	330	1000	1000	1350	1360	102	103	70-130	0	20			
Molybdenum	ug/L	5.6J	1000	1000	1070	1080	106	108	70-130	1	20			
Potassium	ug/L	6410	10000	10000	16800	16300	104	99	70-130	3	20			
Sodium	ug/L	56500	10000	10000	67700	66500	112	100	70-130	2	20			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA  
Pace Project No.: 60426948

QC Batch: 844569 Analysis Method: EPA 200.8  
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET  
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948001, 60426948002, 60426948004, 60426948005, 60426948006, 60426948007

METHOD BLANK: 3347277 Matrix: Water  
Associated Lab Samples: 60426948001, 60426948002, 60426948004, 60426948005, 60426948006, 60426948007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	05/10/23 16:55	
Arsenic	ug/L	<0.13	1.0	0.13	05/10/23 16:55	
Cadmium	ug/L	<0.050	0.50	0.050	05/10/23 16:55	
Chromium	ug/L	<0.30	1.0	0.30	05/10/23 16:55	
Selenium	ug/L	<0.18	1.0	0.18	05/10/23 16:55	
Thallium	ug/L	<0.14	1.0	0.14	05/10/23 16:55	

LABORATORY CONTROL SAMPLE: 3347278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.7	102	85-115	
Arsenic	ug/L	40	41.1	103	85-115	
Cadmium	ug/L	40	40.8	102	85-115	
Chromium	ug/L	40	40.3	101	85-115	
Selenium	ug/L	40	42.1	105	85-115	
Thallium	ug/L	40	38.9	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347279 3347280

Parameter	Units	60426950007		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Antimony	ug/L	<0.12	40	40	40.1	40.4	100	101	70-130	1	20		
Arsenic	ug/L	0.59J	40	40	42.1	42.2	104	104	70-130	0	20		
Cadmium	ug/L	<0.050	40	40	39.5	39.8	99	100	70-130	1	20		
Chromium	ug/L	0.40J	40	40	41.3	41.2	102	102	70-130	0	20		
Selenium	ug/L	0.41J	40	40	41.0	41.5	101	103	70-130	1	20		
Thallium	ug/L	<0.14	40	40	40.3	40.3	101	101	70-130	0	20		

MATRIX SPIKE SAMPLE: 3347281

Parameter	Units	60426948004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	39.7	99	70-130	
Arsenic	ug/L	1.1	40	42.2	103	70-130	
Cadmium	ug/L	<0.050	40	39.4	98	70-130	
Chromium	ug/L	0.36J	40	40.7	101	70-130	
Selenium	ug/L	2.5	40	43.2	102	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

MATRIX SPIKE SAMPLE:		3347281					
Parameter	Units	60426948004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Thallium	ug/L	<0.14	40	40.1	100	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch:	844572	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60426948003, 60426948008, 60426948009, 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019, 60426948022, 60426948023		

METHOD BLANK:	3347287	Matrix:	Water
Associated Lab Samples:	60426948003, 60426948008, 60426948009, 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019, 60426948022, 60426948023		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	05/10/23 18:20	
Arsenic	ug/L	<0.13	1.0	0.13	05/10/23 18:20	
Cadmium	ug/L	<0.050	0.50	0.050	05/10/23 18:20	
Chromium	ug/L	<0.30	1.0	0.30	05/10/23 18:20	
Selenium	ug/L	<0.18	1.0	0.18	05/10/23 18:20	
Thallium	ug/L	<0.14	1.0	0.14	05/10/23 18:20	

LABORATORY CONTROL SAMPLE: 3347288						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.6	99	85-115	
Arsenic	ug/L	40	40.7	102	85-115	
Cadmium	ug/L	40	40.1	100	85-115	
Chromium	ug/L	40	40.2	101	85-115	
Selenium	ug/L	40	41.7	104	85-115	
Thallium	ug/L	40	38.6	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347289												3347290	
Parameter	Units	60426948015		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Antimony	ug/L	0.19J	40	40	40.5	39.5	101	98	70-130	2	20
Arsenic	ug/L	10.3	40	40	51.3	50.4	103	100	70-130	2	20		
Cadmium	ug/L	0.17J	40	40	39.0	37.9	97	94	70-130	3	20		
Chromium	ug/L	1.6	40	40	41.1	39.9	99	96	70-130	3	20		
Selenium	ug/L	0.97J	40	40	39.6	38.5	97	94	70-130	3	20		
Thallium	ug/L	<0.14	40	40	41.2	40.1	103	100	70-130	3	20		

MATRIX SPIKE SAMPLE: 3347291											
Parameter	Units	60426948023 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers				
Antimony	ug/L	<0.12	40	39.5	99	70-130					

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

MATRIX SPIKE SAMPLE:		3347291					
Parameter	Units	60426948023 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1.1	40	42.3	103	70-130	
Cadmium	ug/L	<0.050	40	38.5	96	70-130	
Chromium	ug/L	0.76J	40	40.5	99	70-130	
Selenium	ug/L	<0.18	40	39.4	98	70-130	
Thallium	ug/L	<0.14	40	40.7	102	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA  
Pace Project No.: 60426948

QC Batch: 844575	Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8	Analysis Description: 200.8 MET
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948024

METHOD BLANK: 3347297 Matrix: Water

Associated Lab Samples: 60426948024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	05/10/23 19:46	
Arsenic	ug/L	<0.13	1.0	0.13	05/10/23 19:46	
Cadmium	ug/L	<0.050	0.50	0.050	05/10/23 19:46	
Chromium	ug/L	<0.30	1.0	0.30	05/10/23 19:46	
Selenium	ug/L	<0.18	1.0	0.18	05/10/23 19:46	
Thallium	ug/L	<0.14	1.0	0.14	05/10/23 19:46	

LABORATORY CONTROL SAMPLE: 3347298

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.1	103	85-115	
Arsenic	ug/L	40	42.1	105	85-115	
Cadmium	ug/L	40	41.4	104	85-115	
Chromium	ug/L	40	41.7	104	85-115	
Selenium	ug/L	40	42.9	107	85-115	
Thallium	ug/L	40	40.2	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347299 3347300

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		60426950012	Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Antimony	ug/L	<0.12	40	40	40.6	39.7	101	99	70-130	2	20		
Arsenic	ug/L	2.8	40	40	45.3	44.4	106	104	70-130	2	20		
Cadmium	ug/L	<0.050	40	40	40.1	39.2	100	98	70-130	2	20		
Chromium	ug/L	0.68J	40	40	42.1	41.4	104	102	70-130	2	20		
Selenium	ug/L	<0.18	40	40	41.2	40.5	103	101	70-130	2	20		
Thallium	ug/L	<0.14	40	40	41.2	40.7	103	102	70-130	1	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 843896	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948001, 60426948002

METHOD BLANK: 3344449 Matrix: Water

Associated Lab Samples: 60426948001, 60426948002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	04/27/23 09:04	

LABORATORY CONTROL SAMPLE: 3344450

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	497	99	90-110	

SAMPLE DUPLICATE: 3344451

Parameter	Units	10650230001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	93.6	88.1	6	10	

SAMPLE DUPLICATE: 3344452

Parameter	Units	60426950007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	269	270	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 843897 Analysis Method: SM 2320B  
 QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity  
 Laboratory: Pace Analytical Services - Kansas City  
 Associated Lab Samples: 60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019

METHOD BLANK: 3344453 Matrix: Water  
 Associated Lab Samples: 60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	04/27/23 11:50	

LABORATORY CONTROL SAMPLE: 3344454

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	494	99	90-110	

SAMPLE DUPLICATE: 3344455

Parameter	Units	60426950008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	338	342	1	10	

SAMPLE DUPLICATE: 3344456

Parameter	Units	60426948015 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	292	290	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 844433

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948022, 60426948023, 60426948024

METHOD BLANK: 3346791

Matrix: Water

Associated Lab Samples: 60426948022, 60426948023, 60426948024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	<10.5	20.0	10.5	05/01/23 13:35	

LABORATORY CONTROL SAMPLE: 3346792

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	500	502	100	90-110	

SAMPLE DUPLICATE: 3346793

Parameter	Units	60427265002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	1370	1270	7	10	

SAMPLE DUPLICATE: 3346794

Parameter	Units	60427332001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	367	369	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 844134

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948001, 60426948002

METHOD BLANK: 3345517

Matrix: Water

Associated Lab Samples: 60426948001, 60426948002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/28/23 12:40	

LABORATORY CONTROL SAMPLE: 3345518

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	976	98	80-120	

SAMPLE DUPLICATE: 3345519

Parameter	Units	60426917001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	318	297	7	10	

SAMPLE DUPLICATE: 3345520

Parameter	Units	60426948001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	355	356	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch:	844136	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016		

METHOD BLANK:	3345524	Matrix:	Water
Associated Lab Samples:	60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/28/23 12:38	

LABORATORY CONTROL SAMPLE: 3345525						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1040	104	80-120	

SAMPLE DUPLICATE: 3345526						
Parameter	Units	60426950007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	308	308	0	10	

SAMPLE DUPLICATE: 3345527						
Parameter	Units	60426948015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	583	581	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 844776

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory:

Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948017, 60426948018, 60426948019

METHOD BLANK: 3347735

Matrix: Water

Associated Lab Samples: 60426948017, 60426948018, 60426948019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/02/23 11:12	

LABORATORY CONTROL SAMPLE: 3347736

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	970	97	80-120	

SAMPLE DUPLICATE: 3347738

Parameter	Units	60427306001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1320	1360	3	10	

SAMPLE DUPLICATE: 3347758

Parameter	Units	60426948017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	325	306	6	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 844945

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948022, 60426948023

METHOD BLANK: 3348282

Matrix: Water

Associated Lab Samples: 60426948022, 60426948023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/03/23 13:39	

LABORATORY CONTROL SAMPLE: 3348283

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 3348284

Parameter	Units	60427341008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1530	1570	3	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 845204

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948024

METHOD BLANK: 3349176

Matrix: Water

Associated Lab Samples: 60426948024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/04/23 14:16	

LABORATORY CONTROL SAMPLE: 3349177

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1050	105	80-120	

SAMPLE DUPLICATE: 3349178

Parameter	Units	60427363002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5200	5130	1	10	

SAMPLE DUPLICATE: 3349179

Parameter	Units	60427490002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	648	638	2	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA  
Pace Project No.: 60426948

QC Batch: 843506	Analysis Method: SM 3500-Fe B#4
QC Batch Method: SM 3500-Fe B#4	Analysis Description: Iron, Ferrous
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948001, 60426948002

METHOD BLANK: 3343187 Matrix: Water

Associated Lab Samples: 60426948001, 60426948002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	04/26/23 14:25	H6

LABORATORY CONTROL SAMPLE: 3343188

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	105	90-110	H6

SAMPLE DUPLICATE: 3343189

Parameter	Units	60427090003 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	ND	0.16J		20	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch:	845656	Analysis Method:	SM 3500-Fe B#4
QC Batch Method:	SM 3500-Fe B#4	Analysis Description:	Iron, Ferrous
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019		

METHOD BLANK:	3350976	Matrix:	Water
Associated Lab Samples:	60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	05/08/23 10:22	H6

LABORATORY CONTROL SAMPLE: 3350977

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.0	100	90-110	H6

SAMPLE DUPLICATE: 3350985

Parameter	Units	60426948015 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.041	<0.041		20	H6

SAMPLE DUPLICATE: 3350986

Parameter	Units	60426950007 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.041	<0.041		20	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

QC Batch:	845657	Analysis Method:	SM 3500-Fe B#4
QC Batch Method:	SM 3500-Fe B#4	Analysis Description:	Iron, Ferrous
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948008, 60426948009, 60426948010, 60426948022, 60426948023, 60426948024

---

METHOD BLANK: 3350979 Matrix: Water

Associated Lab Samples: 60426948008, 60426948009, 60426948010, 60426948022, 60426948023, 60426948024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	05/08/23 14:57	H6

---

LABORATORY CONTROL SAMPLE: 3350980

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	103	90-110	H6

---

SAMPLE DUPLICATE: 3350981

Parameter	Units	60426948008 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.041	<0.041		20	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch:	844137	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948001, 60426948002, 60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948008, 60426948009

METHOD BLANK: 3345528 Matrix: Water

Associated Lab Samples: 60426948001, 60426948002, 60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948008, 60426948009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	04/28/23 15:11	

LABORATORY CONTROL SAMPLE: 3345529

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.48	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3345530 3345531

Parameter	Units	60426950007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	<0.016	0.5	0.5	0.42	0.42	82	83	75-125	1	20	

SAMPLE DUPLICATE: 3345532

Parameter	Units	60426950007 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA  
Pace Project No.: 60426948

QC Batch: 844733 Analysis Method: SM 4500-S-2 D  
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total  
Laboratory: Pace Analytical Services - Kansas City  
Associated Lab Samples: 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019

METHOD BLANK: 3347597 Matrix: Water  
Associated Lab Samples: 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/02/23 10:49	

LABORATORY CONTROL SAMPLE: 3347598

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.50	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3347715 3347716

Parameter	Units	60426948015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	<0.016	0.5	0.5	0.25	0.25	48	48	75-125	0	20	

SAMPLE DUPLICATE: 3347717

Parameter	Units	60426948015 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch:	844925	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60426948022, 60426948023, 60426948024		

METHOD BLANK: 3348226 Matrix: Water

Associated Lab Samples: 60426948022, 60426948023, 60426948024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	05/03/23 13:54	

LABORATORY CONTROL SAMPLE: 3348227

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.46	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3348228 3348229

Parameter	Units	60427241002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	1.8	0.5	0.5	4.2	4.2	481	481	75-125	0	20	M1

SAMPLE DUPLICATE: 3348230

Parameter	Units	60426948022 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch:	845456	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948001, 60426948002

METHOD BLANK: 3350048 Matrix: Water

Associated Lab Samples: 60426948001, 60426948002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/08/23 08:23	
Fluoride	mg/L	<0.12	0.20	0.12	05/08/23 08:23	
Sulfate	mg/L	<0.55	1.0	0.55	05/08/23 08:23	

LABORATORY CONTROL SAMPLE: 3350049

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.2	105	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3350051 3350052

Parameter	Units	60427736003		3350051		3350052		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result					MS % Rec
Chloride	mg/L	184	184	50	50	222	204	78	40	80-120	9	15 E,M1
Fluoride	mg/L	ND	ND	25	25	28.7	26.6	115	106	80-120	8	15
Sulfate	mg/L	122	122	50	50	164	149	83	53	80-120	10	15 M1

SAMPLE DUPLICATE: 3350050

Parameter	Units	60427736003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	184	178	3	15	
Fluoride	mg/L	ND	<1.2		15	
Sulfate	mg/L	122	118	4	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 845828

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948004, 60426948005

METHOD BLANK: 3351703

Matrix: Water

Associated Lab Samples: 60426948004, 60426948005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.56J	1.0	0.53	05/09/23 08:21	
Fluoride	mg/L	<0.12	0.20	0.12	05/09/23 08:21	
Sulfate	mg/L	<0.55	1.0	0.55	05/09/23 08:21	

METHOD BLANK: 3354873

Matrix: Water

Associated Lab Samples: 60426948004, 60426948005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/10/23 16:19	
Fluoride	mg/L	<0.12	0.20	0.12	05/10/23 16:19	
Sulfate	mg/L	<0.55	1.0	0.55	05/10/23 16:19	

LABORATORY CONTROL SAMPLE: 3351704

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	93	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

LABORATORY CONTROL SAMPLE: 3354874

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3351706

3351705

Parameter	Units	60426950007		3351706		3351705		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	4.3	5	5	8.7	8.9	88	91	80-120	2	15		
Fluoride	mg/L	0.27	2.5	2.5	2.6	2.6	95	95	80-120	0	15		
Sulfate	mg/L	23.1	10	10	33.1	33.1	100	100	80-120	0	15		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

SAMPLE DUPLICATE: 3351707

Parameter	Units	60426950007 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	4.3	4.3	0	15	
Fluoride	mg/L	0.27	0.27	0	15	
Sulfate	mg/L	23.1	23.3	1	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 845829

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019, 60426948022, 60426948023, 60426948024

METHOD BLANK: 3351708

Matrix: Water

Associated Lab Samples: 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019, 60426948022, 60426948023, 60426948024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/09/23 16:28	
Fluoride	mg/L	<0.12	0.20	0.12	05/09/23 16:28	
Sulfate	mg/L	<0.55	1.0	0.55	05/09/23 16:28	

METHOD BLANK: 3354876

Matrix: Water

Associated Lab Samples: 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011, 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019, 60426948022, 60426948023, 60426948024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/10/23 19:53	
Fluoride	mg/L	<0.12	0.20	0.12	05/10/23 19:53	
Sulfate	mg/L	<0.55	1.0	0.55	05/10/23 19:53	

LABORATORY CONTROL SAMPLE: 3351709

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	91	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	5.4	109	90-110	

LABORATORY CONTROL SAMPLE: 3354877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3351710												3351711	
Parameter	Units	60426948015		MS	MSD	MS	MSD	MS	MSD	% Rec	Max		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Chloride	mg/L	28.8	50	50	74.1	74.8	90	92	80-120	1	15		
Fluoride	mg/L	2.0	2.5	2.5	4.8	4.8	109	111	80-120	1	15		
Sulfate	mg/L	96.4	50	50	145	146	98	99	80-120	0	15		

SAMPLE DUPLICATE: 3351712

Parameter	Units	60426948015		Dup Result	RPD	Max RPD	Qualifiers
		Result	Result				
Chloride	mg/L	28.8	28.7	0	15		
Fluoride	mg/L	2.0	2.1	1	15		
Sulfate	mg/L	96.4	96.9	1	15		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 847374

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60426948003

METHOD BLANK: 3357618

Matrix: Water

Associated Lab Samples: 60426948003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/17/23 14:12	
Fluoride	mg/L	<0.12	0.20	0.12	05/17/23 14:12	
Sulfate	mg/L	<0.55	1.0	0.55	05/17/23 14:12	

LABORATORY CONTROL SAMPLE: 3357619

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	5	5.4	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3357620 3357621

Parameter	Units	60428767001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	232	50	50	332	301	200	137	80-120	10	15	E,M1
Fluoride	mg/L	ND	25	25	26.2	28.0	105	112	80-120	7	15	
Sulfate	mg/L	38.1	50	50	98.1	96.4	120	117	80-120	2	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-05S**      **Lab ID: 60426948001**      Collected: 04/21/23 11:25      Received: 04/22/23 04:59      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.138 ± 0.542 (1.04)</b> <b>C:NA T:93%</b>	pCi/L	05/16/23 16:33	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.747 ± 0.428 (0.795)</b> <b>C:77% T:88%</b>	pCi/L	05/11/23 12:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-31S**      **Lab ID: 60426948002**      Collected: 04/21/23 13:50      Received: 04/22/23 04:59      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0655 ± 0.497 (0.983)</b> <b>C:NA T:97%</b>	pCi/L	05/16/23 16:33	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.222 ± 0.352 (0.764)</b> <b>C:78% T:86%</b>	pCi/L	05/11/23 12:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-10S**      **Lab ID: 60426948003**      Collected: 04/25/23 13:34      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.197 ± 0.499 (0.927)</b> <b>C:NA T:103%</b>	pCi/L	05/16/23 16:33	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.552 ± 0.440 (0.880)</b> <b>C:74% T:81%</b>	pCi/L	05/11/23 12:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-16S**      **Lab ID: 60426948004**      Collected: 04/24/23 09:54      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.331 ± 0.536 (0.933)</b> <b>C:NA T:101%</b>	pCi/L	05/16/23 16:33	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.495 ± 0.358 (0.691)</b> <b>C:83% T:86%</b>	pCi/L	05/11/23 15:53	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-17S**      **Lab ID: 60426948005**      Collected: 04/24/23 13:22      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.282 ± 0.518 (0.924)</b> <b>C:NA T:99%</b>	pCi/L	05/16/23 16:33	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.04 ± 0.470 (0.791)</b> <b>C:79% T:85%</b>	pCi/L	05/11/23 15:54	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-171**      **Lab ID: 60426948006**      Collected: 04/24/23 11:00      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>-0.158 ± 1.48 (2.50)</b> <b>C:NA T:22%</b>	pCi/L	05/16/23 16:33	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>-0.327 ± 0.384 (0.957)</b> <b>C:75% T:79%</b>	pCi/L	05/11/23 15:54	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-17D**      **Lab ID: 60426948007**      Collected: 04/24/23 14:04      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.325 ± 0.369 (0.582)</b> <b>C:NA T:101%</b>	pCi/L	05/16/23 16:53	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.392 ± 0.359 (0.731)</b> <b>C:86% T:86%</b>	pCi/L	05/11/23 15:55	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-19S**      **Lab ID: 60426948008**      Collected: 04/24/23 16:42      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>-0.0571 ± 0.581 (1.15)</b> <b>C:NA T:95%</b>	pCi/L	05/16/23 16:53	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.557 ± 0.409 (0.807)</b> <b>C:86% T:83%</b>	pCi/L	05/11/23 15:55	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: R-P-191</b> <b>Lab ID: 60426948009</b> Collected: 04/24/23 17:20      Received: 04/26/23 05:44      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.347 ± 0.410 (0.644)</b> <b>C:NA T:82%</b>	pCi/L	05/16/23 16:53	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.808 ± 0.462 (0.851)</b> <b>C:74% T:88%</b>	pCi/L	05/11/23 15:55	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-19D**      **Lab ID: 60426948010**      Collected: 04/24/23 18:00      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.000 ± 0.397 (0.890)</b> <b>C:NA T:74%</b>	pCi/L	05/16/23 16:53	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.584 ± 0.399 (0.773)</b> <b>C:83% T:88%</b>	pCi/L	05/11/23 15:55	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-21S**      **Lab ID: 60426948011**      Collected: 04/24/23 15:45      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.121 ± 0.557 (1.06)</b> <b>C:NA T:93%</b>	pCi/L	05/16/23 17:04	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.290 ± 0.370 (0.788)</b> <b>C:82% T:86%</b>	pCi/L	05/11/23 15:50	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-211**      **Lab ID: 60426948012**      Collected: 04/24/23 12:25      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.000 ± 0.396 (0.838)</b> <b>C:NA T:94%</b>	pCi/L	05/17/23 15:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.379 ± 0.352 (0.710)</b> <b>C:76% T:74%</b>	pCi/L	05/12/23 12:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-21D**      **Lab ID: 60426948013**      Collected: 04/24/23 13:25      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.317 ± 0.647 (1.15)</b> <b>C:NA T:88%</b>	pCi/L	05/17/23 15:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.29 ± 0.477 (0.694)</b> <b>C:78% T:79%</b>	pCi/L	05/12/23 12:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-22S**      **Lab ID: 60426948014**      Collected: 04/24/23 10:13      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.000 ± 0.365 (0.773)</b> <b>C:NA T:91%</b>	pCi/L	05/17/23 15:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.925 ± 0.452 (0.777)</b> <b>C:82% T:73%</b>	pCi/L	05/12/23 12:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-22D**      **Lab ID: 60426948015**      Collected: 04/24/23 10:45      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.140 ± 0.433 (0.839)</b> <b>C:NA T:71%</b>	pCi/L	05/17/23 16:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.481 ± 0.357 (0.686)</b> <b>C:81% T:70%</b>	pCi/L	05/12/23 12:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-CA-DUP-1**      **Lab ID: 60426948016**      Collected: 04/24/23 00:00      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.000 ± 0.448 (0.947)</b> <b>C:NA T:78%</b>	pCi/L	05/17/23 15:45	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.221 ± 0.330 (0.711)</b> <b>C:79% T:75%</b>	pCi/L	05/12/23 12:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-CA-DUP-2**      **Lab ID: 60426948017**      Collected: 04/24/23 00:00      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0636 ± 0.290 (0.172)</b> <b>C:NA T:93%</b>	pCi/L	05/17/23 15:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.189 ± 0.303 (0.657)</b> <b>C:77% T:86%</b>	pCi/L	05/12/23 12:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-CA-FB-1**      **Lab ID: 60426948018**      Collected: 04/24/23 09:15      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>-0.0616 ± 0.498 (1.03)</b> <b>C:NA T:97%</b>	pCi/L	05/17/23 15:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.415 ± 0.340 (0.676)</b> <b>C:81% T:79%</b>	pCi/L	05/12/23 12:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-CA-FB-2**      **Lab ID: 60426948019**      Collected: 04/25/23 13:44      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.118 ± 0.328 (0.636)</b> <b>C:NA T:97%</b>	pCi/L	05/17/23 15:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.578 ± 0.336 (0.607)</b> <b>C:80% T:84%</b>	pCi/L	05/12/23 12:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-CA-MS-1**      **Lab ID: 60426948020**      Collected: 04/24/23 10:45      Received: 04/26/23 05:44      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>102.19 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/17/23 16:52	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>93.81 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/12/23 12:26	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 903.1	<b>72.05 %REC</b>	<b>34.60RPD ±</b>	pCi/L	05/17/23 16:52	13982-63-3	
		<b>NA (NA)</b>					
		<b>C:NA T:NA</b>					
Pace Analytical Services - Greensburg							
Radium-228	EPA 904.0	<b>78.95 %REC</b>	<b>17.21RPD ±</b>	pCi/L	05/12/23 12:26	15262-20-1	
		<b>NA (NA)</b>					
		<b>C:NA T:NA</b>					

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-29S**      **Lab ID: 60426948022**      Collected: 04/26/23 14:15      Received: 04/28/23 05:00      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.529 ± 0.370 (0.447)</b> <b>C:NA T:89%</b>	pCi/L	05/22/23 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.25 ± 0.485 (0.767)</b> <b>C:80% T:89%</b>	pCi/L	05/15/23 12:10	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-29D**      **Lab ID: 60426948023**      Collected: 04/26/23 10:54      Received: 04/28/23 05:00      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.318 ± 0.390 (0.641)</b> <b>C:NA T:88%</b>	pCi/L	05/22/23 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.901 ± 0.631 (1.24)</b> <b>C:81% T:88%</b>	pCi/L	05/15/23 15:55	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

**Sample: R-P-30S**      **Lab ID: 60426948024**      Collected: 04/27/23 11:13      Received: 04/28/23 05:00      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.137 ± 0.348 (0.645)</b> <b>C:NA T:90%</b>	pCi/L	05/22/23 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.245 ± 0.501 (1.10)</b> <b>C:81% T:90%</b>	pCi/L	05/15/23 15:56	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 585485

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60426948001, 60426948002, 60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011

METHOD BLANK: 2843569

Matrix: Water

Associated Lab Samples: 60426948001, 60426948002, 60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.508 ± 0.332 (0.340) C:NA T:103%	pCi/L	05/16/23 16:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 585486

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60426948001, 60426948002, 60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011

METHOD BLANK: 2843574

Matrix: Water

Associated Lab Samples: 60426948001, 60426948002, 60426948003, 60426948004, 60426948005, 60426948006, 60426948007, 60426948008, 60426948009, 60426948010, 60426948011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.424 ± 0.314 (0.604) C:77% T:85%	pCi/L	05/11/23 12:26	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 585867

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60426948022, 60426948023, 60426948024

METHOD BLANK: 2845655

Matrix: Water

Associated Lab Samples: 60426948022, 60426948023, 60426948024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.409 ± 0.287 (0.536) C:74% T:87%	pCi/L	05/15/23 12:09	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 585864

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60426948022, 60426948023, 60426948024

METHOD BLANK: 2845648

Matrix: Water

Associated Lab Samples: 60426948022, 60426948023, 60426948024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.100 ± 0.241 (0.466) C:NA T:87%	pCi/L	05/22/23 12:58	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

QC Batch: 585490

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019, 60426948020, 60426948021

METHOD BLANK: 2843591

Matrix: Water

Associated Lab Samples: 60426948012, 60426948013, 60426948014, 60426948015, 60426948016, 60426948017, 60426948018, 60426948019, 60426948020, 60426948021

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0521 ± 0.238 (0.484) C:NA T:93%	pCi/L	05/17/23 15:39	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## QUALIFIERS

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

1e Ferrrous Iron result is greater than the total iron. Data is within laboratory control limits.

B Analyte was detected in the associated method blank.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

H6 Analysis initiated outside of the 15 minute EPA required holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60426948001	R-P-05S	EPA 200.7	844567	EPA 200.7	844802
60426948002	R-P-31S	EPA 200.7	844567	EPA 200.7	844802
60426948003	R-P-10S	EPA 200.7	844570	EPA 200.7	844804
60426948004	R-P-16S	EPA 200.7	844567	EPA 200.7	844802
60426948005	R-P-17S	EPA 200.7	844567	EPA 200.7	844802
60426948006	R-P-17I	EPA 200.7	844567	EPA 200.7	844802
60426948007	R-P-17D	EPA 200.7	844567	EPA 200.7	844802
60426948008	R-P-19S	EPA 200.7	844570	EPA 200.7	844804
60426948009	R-P-19I	EPA 200.7	844570	EPA 200.7	844804
60426948010	R-P-19D	EPA 200.7	844570	EPA 200.7	844804
60426948011	R-P-21S	EPA 200.7	844570	EPA 200.7	844804
60426948012	R-P-21I	EPA 200.7	844570	EPA 200.7	844804
60426948013	R-P-21D	EPA 200.7	844570	EPA 200.7	844804
60426948014	R-P-22S	EPA 200.7	844570	EPA 200.7	844804
60426948015	R-P-22D	EPA 200.7	844570	EPA 200.7	844804
60426948016	R-CA-DUP-1	EPA 200.7	844570	EPA 200.7	844804
60426948017	R-CA-DUP-2	EPA 200.7	844570	EPA 200.7	844804
60426948018	R-CA-FB-1	EPA 200.7	844570	EPA 200.7	844804
60426948019	R-CA-FB-2	EPA 200.7	844570	EPA 200.7	844804
60426948022	R-P-29S	EPA 200.7	844570	EPA 200.7	844804
60426948023	R-P-29D	EPA 200.7	844570	EPA 200.7	844804
60426948024	R-P-30S	EPA 200.7	844573	EPA 200.7	844795
60426948001	R-P-05S	EPA 200.8	844569	EPA 200.8	844803
60426948002	R-P-31S	EPA 200.8	844569	EPA 200.8	844803
60426948003	R-P-10S	EPA 200.8	844572	EPA 200.8	844805
60426948004	R-P-16S	EPA 200.8	844569	EPA 200.8	844803
60426948005	R-P-17S	EPA 200.8	844569	EPA 200.8	844803
60426948006	R-P-17I	EPA 200.8	844569	EPA 200.8	844803
60426948007	R-P-17D	EPA 200.8	844569	EPA 200.8	844803
60426948008	R-P-19S	EPA 200.8	844572	EPA 200.8	844805
60426948009	R-P-19I	EPA 200.8	844572	EPA 200.8	844805
60426948010	R-P-19D	EPA 200.8	844572	EPA 200.8	844805
60426948011	R-P-21S	EPA 200.8	844572	EPA 200.8	844805
60426948012	R-P-21I	EPA 200.8	844572	EPA 200.8	844805
60426948013	R-P-21D	EPA 200.8	844572	EPA 200.8	844805
60426948014	R-P-22S	EPA 200.8	844572	EPA 200.8	844805
60426948015	R-P-22D	EPA 200.8	844572	EPA 200.8	844805
60426948016	R-CA-DUP-1	EPA 200.8	844572	EPA 200.8	844805
60426948017	R-CA-DUP-2	EPA 200.8	844572	EPA 200.8	844805
60426948018	R-CA-FB-1	EPA 200.8	844572	EPA 200.8	844805
60426948019	R-CA-FB-2	EPA 200.8	844572	EPA 200.8	844805
60426948022	R-P-29S	EPA 200.8	844572	EPA 200.8	844805
60426948023	R-P-29D	EPA 200.8	844572	EPA 200.8	844805
60426948024	R-P-30S	EPA 200.8	844575	EPA 200.8	844796

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60426948001	R-P-05S	EPA 7470	847479	EPA 7470	847494
60426948002	R-P-31S	EPA 7470	847479	EPA 7470	847494
60426948003	R-P-10S	EPA 7470	847479	EPA 7470	847494
60426948004	R-P-16S	EPA 7470	847479	EPA 7470	847494
60426948005	R-P-17S	EPA 7470	847479	EPA 7470	847494
60426948006	R-P-17I	EPA 7470	847479	EPA 7470	847494
60426948007	R-P-17D	EPA 7470	847479	EPA 7470	847494
60426948008	R-P-19S	EPA 7470	847479	EPA 7470	847494
60426948009	R-P-19I	EPA 7470	847479	EPA 7470	847494
60426948010	R-P-19D	EPA 7470	847479	EPA 7470	847494
60426948011	R-P-21S	EPA 7470	847479	EPA 7470	847494
60426948012	R-P-21I	EPA 7470	847480	EPA 7470	847495
60426948013	R-P-21D	EPA 7470	847480	EPA 7470	847495
60426948014	R-P-22S	EPA 7470	847480	EPA 7470	847495
60426948015	R-P-22D	EPA 7470	847480	EPA 7470	847495
60426948016	R-CA-DUP-1	EPA 7470	847480	EPA 7470	847495
60426948017	R-CA-DUP-2	EPA 7470	847480	EPA 7470	847495
60426948018	R-CA-FB-1	EPA 7470	847480	EPA 7470	847495
60426948019	R-CA-FB-2	EPA 7470	847480	EPA 7470	847495
60426948022	R-P-29S	EPA 7470	847480	EPA 7470	847495
60426948023	R-P-29D	EPA 7470	847480	EPA 7470	847495
60426948024	R-P-30S	EPA 7470	847480	EPA 7470	847495
60426948001	R-P-05S	EPA 903.1	585485		
60426948002	R-P-31S	EPA 903.1	585485		
60426948003	R-P-10S	EPA 903.1	585485		
60426948004	R-P-16S	EPA 903.1	585485		
60426948005	R-P-17S	EPA 903.1	585485		
60426948006	R-P-17I	EPA 903.1	585485		
60426948007	R-P-17D	EPA 903.1	585485		
60426948008	R-P-19S	EPA 903.1	585485		
60426948009	R-P-19I	EPA 903.1	585485		
60426948010	R-P-19D	EPA 903.1	585485		
60426948011	R-P-21S	EPA 903.1	585485		
60426948012	R-P-21I	EPA 903.1	585490		
60426948013	R-P-21D	EPA 903.1	585490		
60426948014	R-P-22S	EPA 903.1	585490		
60426948015	R-P-22D	EPA 903.1	585490		
60426948016	R-CA-DUP-1	EPA 903.1	585490		
60426948017	R-CA-DUP-2	EPA 903.1	585490		
60426948018	R-CA-FB-1	EPA 903.1	585490		
60426948019	R-CA-FB-2	EPA 903.1	585490		
60426948020	R-CA-MS-1	EPA 903.1	585490		
60426948021	R-CA-MSD-1	EPA 903.1	585490		
60426948022	R-P-29S	EPA 903.1	585864		
60426948023	R-P-29D	EPA 903.1	585864		
60426948024	R-P-30S	EPA 903.1	585864		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60426948001	R-P-05S	EPA 904.0	585486		
60426948002	R-P-31S	EPA 904.0	585486		
60426948003	R-P-10S	EPA 904.0	585486		
60426948004	R-P-16S	EPA 904.0	585486		
60426948005	R-P-17S	EPA 904.0	585486		
60426948006	R-P-17I	EPA 904.0	585486		
60426948007	R-P-17D	EPA 904.0	585486		
60426948008	R-P-19S	EPA 904.0	585486		
60426948009	R-P-19I	EPA 904.0	585486		
60426948010	R-P-19D	EPA 904.0	585486		
60426948011	R-P-21S	EPA 904.0	585486		
60426948012	R-P-21I	EPA 904.0	585492		
60426948013	R-P-21D	EPA 904.0	585492		
60426948014	R-P-22S	EPA 904.0	585492		
60426948015	R-P-22D	EPA 904.0	585492		
60426948016	R-CA-DUP-1	EPA 904.0	585492		
60426948017	R-CA-DUP-2	EPA 904.0	585492		
60426948018	R-CA-FB-1	EPA 904.0	585492		
60426948019	R-CA-FB-2	EPA 904.0	585492		
60426948020	R-CA-MS-1	EPA 904.0	585492		
60426948021	R-CA-MSD-1	EPA 904.0	585492		
60426948022	R-P-29S	EPA 904.0	585867		
60426948023	R-P-29D	EPA 904.0	585867		
60426948024	R-P-30S	EPA 904.0	585867		
60426948001	R-P-05S	SM 2320B	843896		
60426948002	R-P-31S	SM 2320B	843896		
60426948003	R-P-10S	SM 2320B	843897		
60426948004	R-P-16S	SM 2320B	843897		
60426948005	R-P-17S	SM 2320B	843897		
60426948006	R-P-17I	SM 2320B	843897		
60426948007	R-P-17D	SM 2320B	843897		
60426948008	R-P-19S	SM 2320B	843897		
60426948009	R-P-19I	SM 2320B	843897		
60426948010	R-P-19D	SM 2320B	843897		
60426948011	R-P-21S	SM 2320B	843897		
60426948012	R-P-21I	SM 2320B	843897		
60426948013	R-P-21D	SM 2320B	843897		
60426948014	R-P-22S	SM 2320B	843897		
60426948015	R-P-22D	SM 2320B	843897		
60426948016	R-CA-DUP-1	SM 2320B	843897		
60426948017	R-CA-DUP-2	SM 2320B	843897		
60426948018	R-CA-FB-1	SM 2320B	843897		
60426948019	R-CA-FB-2	SM 2320B	843897		
60426948022	R-P-29S	SM 2320B	844433		
60426948023	R-P-29D	SM 2320B	844433		
60426948024	R-P-30S	SM 2320B	844433		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60426948001	R-P-05S	SM 2540C	844134		
60426948002	R-P-31S	SM 2540C	844134		
60426948003	R-P-10S	SM 2540C	844136		
60426948004	R-P-16S	SM 2540C	844136		
60426948005	R-P-17S	SM 2540C	844136		
60426948006	R-P-17I	SM 2540C	844136		
60426948007	R-P-17D	SM 2540C	844136		
60426948008	R-P-19S	SM 2540C	844136		
60426948009	R-P-19I	SM 2540C	844136		
60426948010	R-P-19D	SM 2540C	844136		
60426948011	R-P-21S	SM 2540C	844136		
60426948012	R-P-21I	SM 2540C	844136		
60426948013	R-P-21D	SM 2540C	844136		
60426948014	R-P-22S	SM 2540C	844136		
60426948015	R-P-22D	SM 2540C	844136		
60426948016	R-CA-DUP-1	SM 2540C	844136		
60426948017	R-CA-DUP-2	SM 2540C	844776		
60426948018	R-CA-FB-1	SM 2540C	844776		
60426948019	R-CA-FB-2	SM 2540C	844776		
60426948022	R-P-29S	SM 2540C	844945		
60426948023	R-P-29D	SM 2540C	844945		
60426948024	R-P-30S	SM 2540C	845204		
60426948001	R-P-05S	SM 3500-Fe B#4	847953		
60426948002	R-P-31S	SM 3500-Fe B#4	847953		
60426948003	R-P-10S	SM 3500-Fe B#4	847953		
60426948004	R-P-16S	SM 3500-Fe B#4	847953		
60426948005	R-P-17S	SM 3500-Fe B#4	847953		
60426948006	R-P-17I	SM 3500-Fe B#4	847953		
60426948007	R-P-17D	SM 3500-Fe B#4	847953		
60426948008	R-P-19S	SM 3500-Fe B#4	847953		
60426948009	R-P-19I	SM 3500-Fe B#4	847953		
60426948010	R-P-19D	SM 3500-Fe B#4	847953		
60426948011	R-P-21S	SM 3500-Fe B#4	847953		
60426948012	R-P-21I	SM 3500-Fe B#4	847954		
60426948013	R-P-21D	SM 3500-Fe B#4	847954		
60426948014	R-P-22S	SM 3500-Fe B#4	847954		
60426948015	R-P-22D	SM 3500-Fe B#4	847954		
60426948016	R-CA-DUP-1	SM 3500-Fe B#4	847954		
60426948017	R-CA-DUP-2	SM 3500-Fe B#4	847954		
60426948018	R-CA-FB-1	SM 3500-Fe B#4	847954		
60426948019	R-CA-FB-2	SM 3500-Fe B#4	847954		
60426948022	R-P-29S	SM 3500-Fe B#4	847954		
60426948023	R-P-29D	SM 3500-Fe B#4	847954		
60426948024	R-P-30S	SM 3500-Fe B#4	847954		
60426948001	R-P-05S	SM 3500-Fe B#4	843506		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA  
Pace Project No.: 60426948

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60426948002	R-P-31S	SM 3500-Fe B#4	843506		
60426948003	R-P-10S	SM 3500-Fe B#4	845656		
60426948004	R-P-16S	SM 3500-Fe B#4	845656		
60426948005	R-P-17S	SM 3500-Fe B#4	845656		
60426948006	R-P-17I	SM 3500-Fe B#4	845656		
60426948007	R-P-17D	SM 3500-Fe B#4	845656		
60426948008	R-P-19S	SM 3500-Fe B#4	845657		
60426948009	R-P-19I	SM 3500-Fe B#4	845657		
60426948010	R-P-19D	SM 3500-Fe B#4	845657		
60426948011	R-P-21S	SM 3500-Fe B#4	845656		
60426948012	R-P-21I	SM 3500-Fe B#4	845656		
60426948013	R-P-21D	SM 3500-Fe B#4	845656		
60426948014	R-P-22S	SM 3500-Fe B#4	845656		
60426948015	R-P-22D	SM 3500-Fe B#4	845656		
60426948016	R-CA-DUP-1	SM 3500-Fe B#4	845656		
60426948017	R-CA-DUP-2	SM 3500-Fe B#4	845656		
60426948018	R-CA-FB-1	SM 3500-Fe B#4	845656		
60426948019	R-CA-FB-2	SM 3500-Fe B#4	845656		
60426948022	R-P-29S	SM 3500-Fe B#4	845657		
60426948023	R-P-29D	SM 3500-Fe B#4	845657		
60426948024	R-P-30S	SM 3500-Fe B#4	845657		
60426948001	R-P-05S	SM 4500-S-2 D	844137		
60426948002	R-P-31S	SM 4500-S-2 D	844137		
60426948003	R-P-10S	SM 4500-S-2 D	844137		
60426948004	R-P-16S	SM 4500-S-2 D	844137		
60426948005	R-P-17S	SM 4500-S-2 D	844137		
60426948006	R-P-17I	SM 4500-S-2 D	844137		
60426948007	R-P-17D	SM 4500-S-2 D	844137		
60426948008	R-P-19S	SM 4500-S-2 D	844137		
60426948009	R-P-19I	SM 4500-S-2 D	844137		
60426948010	R-P-19D	SM 4500-S-2 D	844733		
60426948011	R-P-21S	SM 4500-S-2 D	844733		
60426948012	R-P-21I	SM 4500-S-2 D	844733		
60426948013	R-P-21D	SM 4500-S-2 D	844733		
60426948014	R-P-22S	SM 4500-S-2 D	844733		
60426948015	R-P-22D	SM 4500-S-2 D	844733		
60426948016	R-CA-DUP-1	SM 4500-S-2 D	844733		
60426948017	R-CA-DUP-2	SM 4500-S-2 D	844733		
60426948018	R-CA-FB-1	SM 4500-S-2 D	844733		
60426948019	R-CA-FB-2	SM 4500-S-2 D	844733		
60426948022	R-P-29S	SM 4500-S-2 D	844925		
60426948023	R-P-29D	SM 4500-S-2 D	844925		
60426948024	R-P-30S	SM 4500-S-2 D	844925		
60426948001	R-P-05S	EPA 300.0	845456		
60426948002	R-P-31S	EPA 300.0	845456		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA CROSS REFERENCE TABLE


Project: AMEREN RCPA-CA

Pace Project No.: 60426948

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60426948003	R-P-10S	EPA 300.0	847374		
60426948004	R-P-16S	EPA 300.0	845828		
60426948005	R-P-17S	EPA 300.0	845828		
60426948006	R-P-17I	EPA 300.0	845829		
60426948007	R-P-17D	EPA 300.0	845829		
60426948008	R-P-19S	EPA 300.0	845829		
60426948009	R-P-19I	EPA 300.0	845829		
60426948010	R-P-19D	EPA 300.0	845829		
60426948011	R-P-21S	EPA 300.0	845829		
60426948012	R-P-21I	EPA 300.0	845829		
60426948013	R-P-21D	EPA 300.0	845829		
60426948014	R-P-22S	EPA 300.0	845829		
60426948015	R-P-22D	EPA 300.0	845829		
60426948016	R-CA-DUP-1	EPA 300.0	845829		
60426948017	R-CA-DUP-2	EPA 300.0	845829		
60426948018	R-CA-FB-1	EPA 300.0	845829		
60426948019	R-CA-FB-2	EPA 300.0	845829		
60426948022	R-P-29S	EPA 300.0	845829		
60426948023	R-P-29D	EPA 300.0	845829		
60426948024	R-P-30S	EPA 300.0	845829		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

	DC#_ Title: ENV-FRM-LENE-0009_Samp	
	Revision: 2	Effective Date: 01/12/21

WO#: 60426948



Client Name: Rocksmith

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-299 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 13.2/11 Corr. Factor +0.2 Corrected 13.4/11.3

Date and initials of person examining contents: EC 4/22

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>wt</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>67181</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_





# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

**Section A**  
Required Client Information:

Company: Rocksmith Geoenigneers, LLC.  
Address: 5233 Roanoke Drive  
St. Charles, MO 63304  
Email To: [mark\\_haddock@rocksmithgeo.com](mailto:mark_haddock@rocksmithgeo.com)  
Phone: 314-974-6578 Fax:  
Requested Due Date/TAT: Standard

**Section B**  
Report To: Mark Haddock  
Copy To: Jeffrey Ingram  
Purchase Order No.:  
Project Name: Ameren RCPA-CA  
Project Number: COC #6

**Section C**  
Invoice Information:  
Attention:  
Company Name: Rocksmith  
Address:  
Pace Quote Reference:  
Pace Project Manager: Jamie Church  
Pace Profile #: 15854, line 1

**Section D**  
Required Client Information:

Report To: Mark Haddock  
Copy To: Jeffrey Ingram  
Purchase Order No.:  
Project Name: Ameren RCPA-CA  
Project Number: COC #6

**REGULATORY AGENCY**

NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER

**Site Location**: MO  
**STATE**: MO

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOILSOLID SL OIL OL WP AR OT TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP) (see valid codes to left)	MATRIX CODE	# OF CONTAINERS	Preservatives Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	Requested Analysis Filtered (Y/N)		Pace Project No./ Lab I.D.
		COMPOSITE START	COMPOSITE END/GRAB					DATE	TIME	
1	R-P-05S			G	WT	6	Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	✓	✓	60426448
2	R-P-10S			G	WT			✓	✓	
3	R-P-16S			G	WT			✓	✓	
4	R-P-17S			G	WT			✓	✓	
5	R-P-17I			G	WT			✓	✓	
6	R-P-17D			G	WT			✓	✓	
7	R-P-19S			G	WT			✓	✓	
8	R-P-19I			G	WT			✓	✓	
9	R-P-19D			G	WT			✓	✓	
10	R-P-21S			G	WT			✓	✓	
11	R-P-21I			G	WT			✓	✓	
12	R-P-21D			G	WT			✓	✓	
								✓	✓	
								✓	✓	
								✓	✓	
								✓	✓	
								✓	✓	
								✓	✓	
								✓	✓	
								✓	✓	
								✓	✓	
								✓	✓	
								✓	✓	
								✓	✓	
								✓	✓	

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS	
		Grant Marx / WSP		4-21-23	15:45	Rue		4/22	0459	134	✓
										13	

\*App III and Cat/An Metals - EPA 200.7: B, Ca, Fe, Mg, Mn, K, Na  
\*\* App IV Metals - EPA 200.7 - Ba, Be, Co, Pb, Li, Mo  
200 B Metals - Sb, As, Cd, Cr, Se, Ti

Radium 226/228 to Pace PA

**SAMPLER NAME AND SIGNATURE**

PRINT Name of SAMPLER: Grant Marx  
SIGNATURE of SAMPLER: *Grant Marx*  
DATE Signed (MM/DD/YY): 04/21/23

\*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

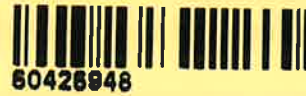




WO#: 60426948



DC#\_Title: ENV-FRM-LENE-0009\_Sample Co



Revision: 2

Effective Date: 01/12/2022

Client Name: Rocksmith Geoen

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read: 1.9/0.9/2.3/1.1 Corr. Factor -0.2 Corrected 1.9/0.9/2.3/1.1 Date and initials of person examining contents: \_\_\_\_\_

Temperature should be above freezing to 6°C 0.9/17.0/14.9/12.6 17.2/15.1/12.8 PVY/26/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		LOT#: <u>67181/62071</u>
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_





1/2

Client: Rocksmitth Geoeng

Profile # only print what you log today

Notes Append to 60426948

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1																			1											
2	WT																		1		1	2	1							
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

Glass		Plastic										Misc.	
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic	I	Wipe/Swab						
DG9H	40mL HCl amber vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Collform Na Thiosulfate						
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag						
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter						
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes						
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NaOH plastic	R	Terracore Kit						
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can						
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic								
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic								
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate								
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic								
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water						
BG3H	250mL HCl Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid						
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid						
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	OL	OIL						
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe						
				BP4U	125mL unpreserved plastic	DW	Drinking Water						
				BP4N	125mL HNO3 plastic								
				BP4S	125mL H2SO4 plastic								
				WPDU	16oz unpreserved plastic								

Work Order Number: 60426948



only 109 Radium for R-CAMS and R-CA MSD

DC# Title: ENV-FRM-LENE-0001 Sample Container Count  
 Revision: 3 | Effective Date: | Issued by: Lenexa

Client: RocksSmith Geoeng

2/2

Profile #

Notes: Append to 60426948

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT																		1		1	2	1				1			
2	WT																		3		3	2	3				3			
3																														
4																														
5																														
6																														
7	WT																		1		1	2	1				1			
8																			1		1									
9																			1		1									
10																			1		1									
11																			1		1									
12																			1		1									

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	BP1C	Wipe/Swab
DG9H	40mL HCl amber vial	BP1N	120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S	Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U	Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z	Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C	Terracore Kit
DG9U	40mL amber unpreserved	BP2N	Summa Can
VG9H	40mL HCl clear vial	BP2S	
VG9T	40mL Na Thio. clear vial	BP2U	
VG9U	40mL unpreserved clear vial	BP2Z	
BG1S	1liter H2SO4 clear glass	BP3C	
BG1U	1liter unpres glass	BP3F	
BG3H	250mL HCl Clear glass	BP3N	
BG3U	250mL Unpres Clear glass	BP3U	
WGDU	16oz clear soil jar	BP3S	
		BP3Z	
		BP4U	
		BP4N	
		BP4S	
		WPDU	
		WT	Water
		SL	Solid
		NAL	Non-aqueous Liquid
		OL	OIL
		WP	Wipe
		DW	Drinking Water

Work Order Number:

60426948

WO#: 60426948



DC#\_Title: ENV-FRM-LENE-0009\_Sample C

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmith Geoenr

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T299 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 0.9/16.1 Corr. Factor +0.2 Corrected 1.1/16.3

Date and initials of person examining contents:

PV 4/20/23

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

LOT#: 671821/62071

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section A</b> Required Client Information Company: <b>Rocksmith Geoenigneers, LLC.</b> Address: <b>5233 Roanoke Drive</b> <b>St. Charles, MO 63304</b> Email To: <b>mark.haddock@rocksmithgeo.com</b> Phone: <b>314-974-6578</b> Fax: _____ Requested Due Date/TAT: <b>Standard</b>		<b>Section B</b> Required Project Information: Report To: <b>Mark Haddock</b> Copy To: <b>Jeffrey Ingram</b> Purchase Order No.: _____ Project Name: <b>Ameren RCPA-CA</b> Project Number: <b>COC #6</b>		<b>Section C</b> Invoice Information: Attention: _____ Company Name: <b>Rocksmith</b> Address: _____ Place Quote Reference: _____ Pace Project Manager: <b>Jamie Church</b> Pace Profile #: <b>15854, line 1</b>	
REGULATORY AGENCY NPDES _____ GROUND WATER _____ DRINKING WATER _____ UST _____ RCRA _____ OTHER _____		Site Location STATE: <b>MO</b>			

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER WASTE WATER PRODUCT SOIL/SOLID OIL	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives NaOH HCl HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> Unpreserved	Analysis Test ↑	Requested Analysis Filtered (Y/N)
			COMPOSITE START	COMPOSITE END/GRAB							
1	R-P-22S	WT G									
2	R-P-22D	WT G									
3	R-P-29S	WT G	4-26-23	1415			6	3	1	✓	
4	R-P-29D	WT G	4-26-23	1054			6	3	1	✓	
5	R-P-30S	WT G	4-27-23	1113			6	2	3	✓	
6	R-P-31S	WT G									
7	R-CA-DUP-1	WT G									
8	R-CA-DUP-2	WT G									
9	R-CA-FB-1	WT G									
10	R-CA-FB-2	WT G									
11	R-CA-MS-1	WT G									
12	R-CA-MSD-1	WT G									

*Caroline*  
Pace Project No./ Lab I.D.

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		SAMPLE CONDITIONS	
*App III and Cat/An Metals - EPA 200.7-B, Ca, Fe, Mg, Mn, K, Na		Grant Morgan / WSP		Grant Morgan		Received on Ice (Y/N) _____	
*** App IV Metals - EPA 200.7 - Ba, Be, Co, Pb, Li, Mo		4-27-23 1345		4/28 0500 16:3		Sealed Cooler (Y/N) _____	
200 B Metals - Sb, As, Cd, Cr, Se, Tl						Custody (Y/N) _____	
Radium 226/228 to Pace PA						Samples Intact (Y/N) _____	

SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: <i>Grant Morgan</i> SIGNATURE of SAMPLER: <i>Grant Morgan</i> DATE SIGNED (MM/DD/YYYY): <i>04/27/23</i>		Temp in °C	Received on Ice (Y/N)	Sealed Cooler (Y/N)	Samples Intact (Y/N)
--	--	------------	-----------------------	---------------------	----------------------



Client: Racksmith Geoen9

Profile #: BP1N = Radium

Site: \_\_\_\_\_

Notes: Append to 604290-60426987  
pu128123 60426941

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1																																
2	WT																															
3	WT																															
4	WT																															
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass		Plastic		Misc.	
DG9B	40mL bisulfate clear vial	BP1C	1L NaOH plastic	I	Wipe/Swab
DG9H	40mL HCl amber vial	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U	1L unpreserved plastic	AF	Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C	500mL NaOH plastic	R	Terracore Kit
DG9U	40mL amber unpreserved	BP2N	500mL HNO3 plastic	U	Summa Can
VG9H	40mL HCl clear vial	BP2S	500mL H2SO4 plastic		
VG9T	40mL Na Thio. clear vial	BP2U	500mL unpreserved plastic		
VG9U	40mL unpreserved clear vial	BP2Z	500mL NaOH, Zn Acetate		
BG1S	1liter H2SO4 clear glass	BP3C	250mL NaOH plastic		
BG1U	1liter unpres glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water
BG3H	250mL HCL Clear glass	BP3N	250mL HNO3 plastic	SL	Solid
BG3U	250mL Unpres Clear glass	BP3S	250mL unpreserved plastic	NAL	Non-aqueous Liquid
WGDU	16oz clear soil jar	BP3U	250mL H2SO4 plastic	OL	Oil
		BP3Z	250mL NaOH, Zn Acetate	WP	Wipe
		BP4U	125mL unpreserved plastic	DW	Drinking Water
		BP4N	125mL HNO3 plastic		
		BP4S	125mL H2SO4 plastic		
		WPDU	16oz unpreserved plastic		

Work Order Number: 60426948

Qualtrax Document ID: 30422



# Memorandum

June 14, 2023

---

**To:** Project File  
Rocksmith Geoengineering, LLC

**Project Number:** 23008

**CC:** Mark Haddock, Jeffrey Ingram

**From:** Grant Morey

**Email:** Grant.Morey@Rocksmithgeo.com

**RE:** **Data Validation Summary, Meramec Energy Center – RCPA-CA – Data Package 60426948**

---

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was analyzed outside of hold time, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates based high, and J- for estimates based low).

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering  
 Project Name: Ameren RCPA-CA  
 Reviewer: G. Morey

Project Manager: J. Ingram  
 Project Number: 23008  
 Validation Date: 6/14/2023

Laboratory: Pace Analytical SDG #: 60426948

Analytical Method (type and no.): EPA 200.7/200.8/7470 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);

Matrix:  Air  Soil/Sed.  Water  Waste  SM 3500-FE (Ferric Iron); SM 4500-S-2 (Sulfide); EPA 903.1/904.0 (Radium 226+228)

Sample Names R-P-05S, R-P-31S, R-P-10S, R-P-16S, R-P-17S, R-P-17I, R-P-17D, R-P-19S, R-P-19I, R-P-19D, R-P-21S, R-P-21I, R-P-21D, R-P-22S, R-P-22D, R-CA-DUP-1, R-CA-DUP-2, R-CA-FB-1, R-CA-FB-2, R-CA-MS-1, R-CA-MSD-1, R-P-29S, R-P-29D, R-P30S

**NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).**

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>4/21/2023 - 4/27/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>JSI, GTM</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Spec Cond, Turb, Temp, DO, ORP</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>No lab narrative.</u>

Note Deficiencies: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R-CA-DUP-1 @ R-P-21I; R-CA-DUP-2 @ R-P-16S
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
d) Were lab dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes

<b>Blind Standards</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Comments/Notes:**

General:

Ferrous iron samples were all analyzed outside of hold time. Results qualified as estimates.

Chloride and Sulfate were diluted in several samples, Sulfide diluted in R-P-17I; no qualification necessary.

## QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

### Comments/Notes:

Method Blanks:

3351703: Chloride (0.56J). Associated with samples -004 and -005.

Sample -004 > RL and < 10x blank: qualified as estimate. Sample -005 > RL and 10x blank: no qualification necessary.

Field Blanks:

R-CA-FB-1 @ R-P-22S: Calcium (28.9J), TDS (23.5), Ferrous Iron (0.090J), Chloride (0.53J).

Calcium, TDS, Chloride results > RL and 10x blank; no qualification necessary. Ferrous Iron result < RL, qualified as non-detect.

R-CA-FB-2 @ R-P-10S: TDS (7.5), Chloride (0.62J); results > RL and 10x blank: no qualification necessary.

Duplicates:

R-CA-DUP-1 @ R-P-21: DUP RPD exceeds limit (20%) for Chloride (63%), Chromium (24%); results qualified as estimates.

R-CA-DUP-2 @ R-P-16S: DUP RPD exceeds limit for Chromium (31%), Ferric Iron (25%), Iron (25%); results qualified as estimates.

Fluoride detected in sample and ND in DUP, results qualified as estimates.

Lab duplicate max RPD: 10%: Alkalinity, TDS; 15%: Chloride, Fluoride, Sulfate; 20%: Ferrous Iron, Sulfide

MS/MSD:

3347276: MS recovery high for Sodium. Associated with sample -007. Qualified as estimate.

3347284/3347285: MS recovery low for Boron and Sodium. Associated with sample -015. No qualification necessary.

3348228/3348229: MS/MSD recovery high for Sulfide. MS./MSD performed on unrelated sample, no qualification necessary.

3350051/3350052: MS/MSD recovery low for Chloride, MSD recovery low for Sulfate. MS/MSD performed on unrelated sample, no qualification necessary.

3357620/3357621: MS/MSD recovery high for Chloride. MS/MSD performed on unrelated sample, no qualification necessary.

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

**Data Qualification:**

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-P05S	Ferrous Iron	0.24	J	Analyzed outside of hold time
R-P31S	"	0.041	UJ	"
P-P10S	"	0.041	UJ	"
R-P-16S	"	0.041	UJ	"
R-P-17S	"	0.11	J	"
R-P-17I	"	0.098	J	"
R-P-17D	"	0.13	J	"
R-P-19S	"	0.041	UJ	"
R-P-19I	"	0.041	UJ	"
R-P-19D	"	0.37	J	"
R-P-21S	"	0.041	UJ	"
R-P-21I	"	0.13	J	"
R-P-21D	"	0.11	J	"
R-P-22S	"	0.20	UJ	Analyzed outside of hold time; detected in field blank, result < RL
R-P-22D	"	0.041	UJ	Analyzed outside of hold time
R-CA-DUP-1	"	0.12	J	"
R-CA-DUP-2	"	0.041	UJ	"
R-CA-FB-1	"	0.090	J	"
R-CA-FB-2	"	0.041	UJ	"
P-P-29S	"	0.14	J	"
R-P-29D	"	0.041	UJ	"
R-P-30S	"	0.041	UJ	"
P-P-16S	Chloride	1.1	J	Detected in method blank, result > RL and < 10x blank
R-CA-DUP-1	"	52	J	DUP RPD exceeds limit
R-P-21I	"	99.5	J	"
R-CA-DUP-1	Chromium	0.7	J	"
R-P-21I	"	0.55	J	"
R-CA-DUP-2	"	0.49	J	"
R-P-16S	"	0.36	J	"
R-CA-DUP-2	Ferric Iron	0.067	J	"
R-P-16S	"	0.086	J	"
R-CA-DUP-2	Iron	66.6	J	"
R-P-16S	"	85.5	J	"
R-CA-DUP-2	Fluoride	0.20	UJ	ND in field DUP, detected in sample









July 27, 2023

Mark Haddock  
Rocksmith Geoengineering, LLC.  
5233 Roanoke Drive  
Saint Charles, MO 63304

RE: Project: AMEREN VERIFICATION, RCPA  
Pace Project No.: 60433028

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory on July 13, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church  
jamie.church@pacelabs.com  
314-838-7223  
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.  
Grant Morey, Rocksmith Geoengineering, LLC.



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## CERTIFICATIONS

Project: AMEREN VERIFICATION, RCPA

Pace Project No.: 60433028

---

### Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 88-00679

Illinois Certification #: 2000302023-5

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-22-16

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

---

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### SAMPLE SUMMARY

Project: AMEREN VERIFICATION, RCPA  
Pace Project No.: 60433028

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60433028001	R-MW-1	Water	07/11/23 17:25	07/13/23 05:10
60433028002	R-MW-3	Water	07/11/23 15:06	07/13/23 05:10
60433028003	R-DUP-1	Water	07/11/23 00:00	07/13/23 05:10
60433028004	R-FB-1	Water	07/11/23 17:30	07/13/23 05:10

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### SAMPLE ANALYTE COUNT

Project: AMEREN VERIFICATION, RCPA

Pace Project No.: 60433028

---

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60433028001	R-MW-1	EPA 300.0	CRN2	1	PASI-K
60433028002	R-MW-3	EPA 300.0	CRN2	1	PASI-K
60433028003	R-DUP-1	EPA 300.0	CRN2	1	PASI-K
60433028004	R-FB-1	EPA 300.0	CRN2	1	PASI-K

---

PASI-K = Pace Analytical Services - Kansas City

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN VERIFICATION, RCPA

Pace Project No.: 60433028

Sample: R-MW-1 Lab ID: 60433028001 Collected: 07/11/23 17:25 Received: 07/13/23 05:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	56.7	mg/L	50.0	26.4	50		07/20/23 14:41	16887-00-6	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN VERIFICATION, RCPA

Pace Project No.: 60433028

Sample: R-MW-3 Lab ID: 60433028002 Collected: 07/11/23 15:06 Received: 07/13/23 05:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	52.3	mg/L	50.0	26.4	50		07/20/23 14:53	16887-00-6	M1

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN VERIFICATION, RCPA

Pace Project No.: 60433028

Sample: R-DUP-1 Lab ID: 60433028003 Collected: 07/11/23 00:00 Received: 07/13/23 05:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City									
Chloride	32.6	mg/L	5.0	2.6	5		07/27/23 10:51	16887-00-6	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN VERIFICATION, RCPA

Pace Project No.: 60433028

Sample: R-FB-1 Lab ID: 60433028004 Collected: 07/11/23 17:30 Received: 07/13/23 05:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City									
Chloride	0.62J	mg/L	1.0	0.53	1		07/20/23 15:56	16887-00-6	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.





**QUALITY CONTROL DATA**

Project: AMEREN VERIFICATION, RCPA

Pace Project No.: 60433028

QC Batch: 856994

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60433028001, 60433028002, 60433028003, 60433028004

METHOD BLANK: 3393669

Matrix: Water

Associated Lab Samples: 60433028001, 60433028002, 60433028003, 60433028004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	07/20/23 10:08	

LABORATORY CONTROL SAMPLE: 3393670

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3393671 3393672

Parameter	Units	60433028002		3393671		3393672		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	52.3	250	250	472	436	168	153	80-120	8	15 M1

SAMPLE DUPLICATE: 3393673

Parameter	Units	60433028002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	52.3	52.8	1	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



## QUALIFIERS

Project: AMEREN VERIFICATION, RCPA

Pace Project No.: 60433028

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN VERIFICATION, RCPA

Pace Project No.: 60433028

---

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60433028001	R-MW-1	EPA 300.0	856994		
60433028002	R-MW-3	EPA 300.0	856994		
60433028003	R-DUP-1	EPA 300.0	856994		
60433028004	R-FB-1	EPA 300.0	856994		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

WO#: 60433028



DC#\_Title: ENV-FRM-LENE-0009\_Sam

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmith Geoen

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T299 Type of Ice: Water Blue  None

Cooler Temperature (°C): As-read 1-8 Corr. Factor 10.2 Corrected 2-0

Date and initials of person examining contents:

P 7/13/23

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at <https://info.pacelabs.com/hubs/pas-standard-terms.pdf>.

**Section A**

**Required Client Information:**  
 Company: RocksSmith Geoen지니어ing, LLC  
 Address: 5233 Roanoke Drive  
 Saint Charles, MO 63304  
 Email: mark.haddock@rocksmithgeo.com  
 Phone: 314-974-6578  
 Requested Due Date:

**Required Project Information:**  
 Report To: Mark Haddock  
 Copy To:  
 Purchase Order #:  
 Project Name: AMEREN VERIFICATION SAMPLING  
 Project #: **RCJA**

**Invoice Information:**  
 Attention:  
 Company Name:  
 Address:  
 Pace Quote:  
 Pace Project Manager: jamie.church@pacelabs.com,  
 Pace Profile #: 15854, Line 1

**Regulatory Agency:**  
**State / Location:** MO

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES	ANALYSES TEST	Y/N	RESIDUAL CHLORINE (Y/N)
			START DATE	END TIME							
1	R-MW-1	WT	7-11-23	1725	WT				X		
2	R-MW-3	WT	1	1506	WT				X		
3	R-DUP-1	WT			WT				X		
4	R-FB-1	WT		1730	WT				X		
5	R-MS-1	WT		1506	WT				X		
6	R-MSD-1	WT		1506	WT				X		
7											
8											
9											
10											
11											
12											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Grant Morey / RocksSmith	7-12-23	1528	<i>[Signature]</i>	7/13	0510	X Y X Y

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Grant Morey  
 SIGNATURE of SAMPLER: *[Signature]* DATE Signed: 07/12/23

Received on: \_\_\_\_\_  
 Ice (Y/N) \_\_\_\_\_  
 Custody Sealed (Y/N) \_\_\_\_\_  
 Cooler (Y/N) \_\_\_\_\_  
 Samples Intact (Y/N) \_\_\_\_\_

Client: Rocksmitz Geoeng

Profile #

15854-1

Site:

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT																				1									
2																					3									
3																					1									
4																					1									
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

		Glass					Plastic					Misc.				
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic	I	Wipe/Swab									
DG9H	40mL HCl amber vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate									
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag									
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter									
DG9S	40mL H2SO4 amber vial	AG0U	100mL unres amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes									
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NaOH plastic	R	Terracore Kit									
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can									
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic											
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic											
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate											
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic											
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water									
BG3H	250mL HCl Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid									
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid									
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	OL	OIL									
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe									
				BP4U	125mL unpreserved plastic	DW	Drinking Water									
				BP4N	125mL HNO3 plastic											
				BP4S	125mL H2SO4 plastic											
				WPDU	16oz unpreserved plastic											

Work Order Number:

60433028



# Memorandum

July 28, 2023

---

**To:** Project File  
Rocksmith Geoengineering, LLC

**Project Number:** 23008

**CC:** Mark Haddock, Jeffrey Ingram

**From:** Grant Morey

**Email:** Grant.Morey@Rocksmithgeo.com

**RE:** **Data Validation Summary, Rush Island Energy Center – RCPA Verification – Data Package 60433028**

---

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was analyzed outside of hold time, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering  
 Project Name: Ameren RCPA Verification  
 Reviewer: G. Morey

Project Manager: J. Ingram  
 Project Number: 23008  
 Validation Date: 7/28/2023

Laboratory: Pace Analytical

SDG #: 60433028

Analytical Method (type and no.): EPA 300.0 (Chloride)

Matrix:  Air  Soil/Sed.  Water  Waste

Sample Names R-MW-1, R-MW-3, R-DUP-1, R-FB-1

**NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).**

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7/13/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Spec Cond, Turb, Temp, DO, ORP</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>No lab narrative.</u>

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Several Chloride sample diluted</u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>



## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were analytes detected in the method blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
b) Were analytes detected in the field blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
				R-DUP-1 collected @ R-MW-1
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
				See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
				See Notes
d) Were lab dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
				See Notes

<b>Blind Standards</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

**Comments/Notes:**

General:

All analyses conducted within required hold times.

Several Chloride samples diluted, required reporting limits met.

## QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

### Comments/Notes:

Method Blank:

No Chloride detected in method blank.

Field Blanks:

R-FB-1 @ R-MW-1: Chloride (0.62J). Result > RL and 10x blank, no qualification necessary.

Duplicates:

R-DUB-1 @ R-MW-1: DUP RPD exceeds limit for Chloride (54%), results qualified as estimates.

Lab duplicate max RPD: 10%: Alkalinity, TDS; 15%: Chloride, Fluoride, Sulfate; 20%: Ferrous Iron, Sulfide

MS/MSD:

3393671/3393672: MS/MSD recoveries high for Chloride, associated with sample -002. Result qualified as estimate.



# QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

## Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: Grant Morey

Date: 7/28/2023



December 11, 2023

Mark Haddock  
Rocksmith Geoengineering, LLC.  
2320 Creve Coeur Mill Road  
Maryland Heights, MO 63043

RE: Project: AMEREN RCPA  
Pace Project No.: 60441586

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between November 08, 2023 and November 10, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church  
jamie.church@pacelabs.com  
314-838-7223  
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.  
Grant Morey, Rocksmith Geoengineering, LLC.



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### CERTIFICATIONS

Project: AMEREN RCPA

Pace Project No.: 60441586

#### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

ANABISO/IEC 17025:2017 Rad Cert#: L24170

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 2950

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA010

Louisiana DEQ/TNI Certification #: 04086

Maine Certification #: 2023021

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572023-03

New Hampshire/TNI Certification #: 297622

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-015

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN02867

Texas/TNI Certification #: T104704188-22-18

Utah/TNI Certification #: PA014572223-14

USDA Soil Permit #: 525-23-67-77263

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

#### Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 88-00679

Illinois Certification #: 2000302023-5

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-22-16

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### SAMPLE SUMMARY

Project: AMEREN RCPA

Pace Project No.: 60441586

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60441586001	R-MW-3	Water	11/07/23 11:53	11/08/23 05:19
60441586002	R-MW-4	Water	11/06/23 13:48	11/08/23 05:19
60441586003	R-MW-5	Water	11/06/23 12:33	11/08/23 05:19
60441586004	R-MS-1	Water	11/07/23 11:53	11/08/23 05:19
60441586005	R-MSD-1	Water	11/07/23 11:53	11/08/23 05:19
60441586006	R-MW-1	Water	11/08/23 12:27	11/10/23 05:36
60441586007	R-MW-2	Water	11/08/23 12:57	11/10/23 05:36
60441586008	R-MW-6	Water	11/08/23 11:40	11/10/23 05:36
60441586009	R-MW-7 (r)	Water	11/08/23 09:10	11/10/23 05:36
60441586010	R-MW-B1	Water	11/08/23 15:20	11/10/23 05:36
60441586011	R-MW-B2	Water	11/08/23 16:05	11/10/23 05:36
60441586012	R-DUP-1	Water	11/08/23 00:00	11/10/23 05:36
60441586013	R-FB-1	Water	11/08/23 11:55	11/10/23 05:36

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



**SAMPLE ANALYTE COUNT**

Project: AMEREN RCPA

Pace Project No.: 60441586

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441586001	R-MW-3	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441586002	R-MW-4	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441586003	R-MW-5	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441586004	R-MS-1	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
60441586005	R-MSD-1	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
60441586006	R-MW-1	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441586007	R-MW-2	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





**SAMPLE ANALYTE COUNT**

Project: AMEREN RCPA

Pace Project No.: 60441586

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441586008	R-MW-6	SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60441586009	R-MW-7 (r)	SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60441586010	R-MW-B1	SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60441586011	R-MW-B2	SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60441586012	R-DUP-1	SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA

Pace Project No.: 60441586

---

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441586013	R-FB-1	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K

---

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-MW-3**      **Lab ID: 60441586001**      Collected: 11/07/23 11:53      Received: 11/08/23 05:19      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	57.3	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 17:15	7440-39-3	
Boron	14200	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 17:15	7440-42-8	M1
Calcium	18600	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 17:15	7440-70-2	
Iron	114	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 17:15	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 17:15	7439-92-1	
Lithium	12.0	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 17:15	7439-93-2	
Magnesium	1490	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 17:15	7439-95-4	
Manganese	19.9	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 17:15	7439-96-5	
Molybdenum	722	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 17:15	7439-98-7	
Potassium	3380	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 17:15	7440-09-7	
Sodium	243000	ug/L	500	115	1	11/11/23 15:25	11/20/23 17:15	7440-23-5	M1
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	11/10/23 10:20	11/16/23 13:03	7440-36-0	
Arsenic	39.1	ug/L	1.0	0.13	1	11/10/23 10:20	11/16/23 13:03	7440-38-2	
Chromium	0.41J	ug/L	1.0	0.30	1	11/10/23 10:20	11/16/23 13:03	7440-47-3	
Selenium	0.61J	ug/L	1.0	0.18	1	11/10/23 10:20	11/16/23 13:03	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	248	mg/L	20.0	10.5	1		11/20/23 16:35		D6,L1
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	841	mg/L	13.3	13.3	1		11/14/23 10:48		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	37.9	mg/L	10.0	5.3	10		11/21/23 10:41	16887-00-6	D6,M1, R1
Fluoride	0.84	mg/L	0.20	0.12	1		11/18/23 12:47	16984-48-8	
Sulfate	318	mg/L	50.0	27.5	50		11/18/23 14:07	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60441586

Sample: R-MW-4 Lab ID: 60441586002 Collected: 11/06/23 13:48 Received: 11/08/23 05:19 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	385	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 17:21	7440-39-3	
Boron	1950	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 17:21	7440-42-8	
Calcium	112000	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 17:21	7440-70-2	
Iron	8060	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 17:21	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 17:21	7439-92-1	
Lithium	34.6	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 17:21	7439-93-2	
Magnesium	23200	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 17:21	7439-95-4	
Manganese	471	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 17:21	7439-96-5	
Molybdenum	37.7	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 17:21	7439-98-7	
Potassium	5860	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 17:21	7440-09-7	
Sodium	35800	ug/L	500	115	1	11/11/23 15:25	11/20/23 17:21	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	11/10/23 10:20	11/17/23 11:40	7440-36-0	
Arsenic	8.0	ug/L	1.0	0.13	1	11/10/23 10:20	11/17/23 11:40	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/10/23 10:20	11/17/23 11:40	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/10/23 10:20	11/17/23 11:40	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	308	mg/L	20.0	10.5	1		11/20/23 16:35		L1
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	435	mg/L	10.0	10.0	1		11/13/23 11:12		1e
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	11.7	mg/L	1.0	0.53	1		11/18/23 15:01	16887-00-6	
Fluoride	0.54	mg/L	0.20	0.12	1		11/18/23 15:01	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		11/18/23 15:01	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60441586

Sample: R-MW-5 Lab ID: 60441586003 Collected: 11/06/23 12:33 Received: 11/08/23 05:19 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	330	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 17:29	7440-39-3	
Boron	51.5J	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 17:29	7440-42-8	
Calcium	116000	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 17:29	7440-70-2	
Iron	7980	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 17:29	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 17:29	7439-92-1	
Lithium	6.0J	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 17:29	7439-93-2	
Magnesium	15900	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 17:29	7439-95-4	
Manganese	309	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 17:29	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 17:29	7439-98-7	
Potassium	1960	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 17:29	7440-09-7	
Sodium	4390	ug/L	500	115	1	11/11/23 15:25	11/20/23 17:29	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	11/10/23 10:20	11/17/23 11:43	7440-36-0	
Arsenic	1.5	ug/L	1.0	0.13	1	11/10/23 10:20	11/17/23 11:43	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/10/23 10:20	11/17/23 11:43	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/10/23 10:20	11/17/23 11:43	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	400	mg/L	20.0	10.5	1		11/20/23 16:35		L1
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	381	mg/L	10.0	10.0	1		11/13/23 11:19		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	2.5	mg/L	1.0	0.53	1		11/18/23 15:14	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		11/18/23 15:14	16984-48-8	
Sulfate	21.3	mg/L	2.0	1.1	2		11/18/23 15:27	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60441586

Sample: R-MW-1 Lab ID: 60441586006 Collected: 11/08/23 12:27 Received: 11/10/23 05:36 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	34.3	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:09	7440-39-3	
Boron	3320	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:09	7440-42-8	
Calcium	40600	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:09	7440-70-2	
Iron	24.5J	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:09	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:09	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:09	7439-93-2	
Magnesium	6060	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:09	7439-95-4	
Manganese	40.2	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:09	7439-96-5	
Molybdenum	145	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:09	7439-98-7	
Potassium	6510	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:09	7440-09-7	
Sodium	149000	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:09	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.14J	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:19	7440-36-0	
Arsenic	3.9	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:19	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:19	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:19	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	185	mg/L	20.0	10.5	1		11/21/23 15:06		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	593	mg/L	10.0	10.0	1		11/15/23 14:22		1e,AB
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	28.6	mg/L	10.0	5.3	10		12/08/23 18:49	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/08/23 18:37	16984-48-8	H1,L1
Sulfate	202	mg/L	50.0	27.5	50		12/06/23 15:34	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60441586

Sample: R-MW-2 Lab ID: 60441586007 Collected: 11/08/23 12:57 Received: 11/10/23 05:36 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	10.3	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:17	7440-39-3	
Boron	4540	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:17	7440-42-8	
Calcium	10700	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:17	7440-70-2	
Iron	81.1	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:17	7439-89-6	
Lead	4.6J	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:17	7439-92-1	
Lithium	4.4J	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:17	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:17	7439-95-4	
Manganese	3.9J	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:17	7439-96-5	
Molybdenum	256	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:17	7439-98-7	
Potassium	3390	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:17	7440-09-7	
Sodium	247000	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:17	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	3.3	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:21	7440-36-0	
Arsenic	277	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:21	7440-38-2	
Chromium	0.43J	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:21	7440-47-3	
Selenium	1.4	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:21	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	245	mg/L	20.0	10.5	1		11/21/23 15:12		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	668	mg/L	13.3	13.3	1		11/15/23 14:22		1e,AB
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	34.1	mg/L	2.0	1.1	2		12/06/23 16:45	16887-00-6	
Fluoride	0.54	mg/L	0.20	0.12	1		12/08/23 19:01	16984-48-8	H1,L1
Sulfate	264	mg/L	50.0	27.5	50		12/06/23 16:56	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-MW-6**      **Lab ID: 60441586008**      Collected: 11/08/23 11:40      Received: 11/10/23 05:36      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>112</b>	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:19	7440-39-3	
Boron	<b>452</b>	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:19	7440-42-8	
Calcium	<b>97800</b>	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:19	7440-70-2	
Iron	<b>753</b>	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:19	7439-89-6	
Lead	<b>&lt;3.8</b>	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:19	7439-92-1	
Lithium	<b>3.9J</b>	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:19	7439-93-2	
Magnesium	<b>13500</b>	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:19	7439-95-4	
Manganese	<b>74.9</b>	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:19	7439-96-5	
Molybdenum	<b>1.2J</b>	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:19	7439-98-7	
Potassium	<b>1020</b>	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:19	7440-09-7	
Sodium	<b>10800</b>	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:19	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<b>&lt;0.12</b>	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:26	7440-36-0	
Arsenic	<b>0.90J</b>	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:26	7440-38-2	
Chromium	<b>0.32J</b>	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:26	7440-47-3	
Selenium	<b>0.29J</b>	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:26	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>280</b>	mg/L	20.0	10.5	1		11/21/23 16:28		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>501</b>	mg/L	10.0	10.0	1		11/15/23 14:23		1e,AB
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>3.5</b>	mg/L	1.0	0.53	1		12/08/23 19:12	16887-00-6	H1
Fluoride	<b>0.39</b>	mg/L	0.20	0.12	1		12/08/23 19:12	16984-48-8	H1,L1
Sulfate	<b>25.9</b>	mg/L	2.0	1.1	2		12/06/23 17:19	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.





### ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60441586

Sample: R-MW-7 (r) Lab ID: 60441586009 Collected: 11/08/23 09:10 Received: 11/10/23 05:36 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	295	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:22	7440-39-3	
Boron	1180	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:22	7440-42-8	
Calcium	83200	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:22	7440-70-2	
Iron	17000	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:22	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:22	7439-92-1	
Lithium	33.9	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:22	7439-93-2	
Magnesium	24100	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:22	7439-95-4	
Manganese	357	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:22	7439-96-5	
Molybdenum	41.3	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:22	7439-98-7	
Potassium	5690	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:22	7440-09-7	
Sodium	27200	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:22	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:28	7440-36-0	
Arsenic	123	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:28	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:28	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:28	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	337	mg/L	20.0	10.5	1		11/21/23 16:40		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	392	mg/L	10.0	10.0	1		11/15/23 14:23		AB
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	11.8	mg/L	1.0	0.53	1		12/08/23 19:24	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/08/23 19:24	16984-48-8	H1,L1
Sulfate	16.9	mg/L	1.0	0.55	1		12/08/23 19:24	14808-79-8	H1

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



**ANALYTICAL RESULTS**

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-MW-B1**      **Lab ID: 60441586010**      Collected: 11/08/23 15:20      Received: 11/10/23 05:36      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>550</b>	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:26	7440-39-3	
Boron	<b>95.4J</b>	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:26	7440-42-8	
Calcium	<b>171000</b>	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:26	7440-70-2	
Iron	<b>26600</b>	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:26	7439-89-6	
Lead	<b>&lt;3.8</b>	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:26	7439-92-1	
Lithium	<b>64.3</b>	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:26	7439-93-2	
Magnesium	<b>54700</b>	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:26	7439-95-4	
Manganese	<b>1270</b>	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:26	7439-96-5	
Molybdenum	<b>&lt;1.0</b>	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:26	7439-98-7	
Potassium	<b>9430</b>	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:26	7440-09-7	
Sodium	<b>29100</b>	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:26	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<b>&lt;0.12</b>	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:33	7440-36-0	
Arsenic	<b>22.6</b>	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:33	7440-38-2	
Chromium	<b>&lt;0.30</b>	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:33	7440-47-3	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:33	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>566</b>	mg/L	20.0	10.5	1		11/21/23 16:46		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>743</b>	mg/L	13.3	13.3	1		11/15/23 14:23		1e,AB
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>67.8</b>	mg/L	10.0	5.3	10		12/06/23 19:01	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		12/06/23 18:38	16984-48-8	L1,M0
Sulfate	<b>14.1</b>	mg/L	1.0	0.55	1		12/06/23 18:38	14808-79-8	

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-MW-B2**      **Lab ID: 60441586011**      Collected: 11/08/23 16:05      Received: 11/10/23 05:36      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>400</b>	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:30	7440-39-3	
Boron	<b>32.2J</b>	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:30	7440-42-8	
Calcium	<b>111000</b>	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:30	7440-70-2	
Iron	<b>9160</b>	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:30	7439-89-6	
Lead	<b>&lt;3.8</b>	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:30	7439-92-1	
Lithium	<b>11.8</b>	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:30	7439-93-2	
Magnesium	<b>20100</b>	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:30	7439-95-4	
Manganese	<b>252</b>	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:30	7439-96-5	
Molybdenum	<b>&lt;1.0</b>	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:30	7439-98-7	
Potassium	<b>1820</b>	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:30	7440-09-7	
Sodium	<b>19200</b>	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:30	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<b>&lt;0.12</b>	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:40	7440-36-0	
Arsenic	<b>3.4</b>	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:40	7440-38-2	
Chromium	<b>&lt;0.30</b>	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:40	7440-47-3	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:40	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>339</b>	mg/L	20.0	10.5	1		11/21/23 16:54		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>437</b>	mg/L	10.0	10.0	1		11/15/23 14:23		AB
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>31.5</b>	mg/L	10.0	5.3	10		12/06/23 20:21	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		12/06/23 19:46	16984-48-8	L1
Sulfate	<b>8.6</b>	mg/L	1.0	0.55	1		12/06/23 19:46	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



**ANALYTICAL RESULTS**

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-DUP-1**      **Lab ID: 60441586012**      Collected: 11/08/23 00:00      Received: 11/10/23 05:36      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>34.4</b>	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:34	7440-39-3	
Boron	<b>3320</b>	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:34	7440-42-8	
Calcium	<b>41100</b>	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:34	7440-70-2	
Iron	<b>24.6J</b>	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:34	7439-89-6	
Lead	<b>&lt;3.8</b>	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:34	7439-92-1	
Lithium	<b>&lt;3.7</b>	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:34	7439-93-2	
Magnesium	<b>6120</b>	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:34	7439-95-4	
Manganese	<b>42.0</b>	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:34	7439-96-5	
Molybdenum	<b>145</b>	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:34	7439-98-7	
Potassium	<b>6530</b>	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:34	7440-09-7	
Sodium	<b>150000</b>	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:34	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<b>0.13J</b>	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:42	7440-36-0	
Arsenic	<b>4.0</b>	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:42	7440-38-2	
Chromium	<b>&lt;0.30</b>	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:42	7440-47-3	
Selenium	<b>0.21J</b>	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:42	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>190</b>	mg/L	20.0	10.5	1		11/21/23 17:00		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>596</b>	mg/L	10.0	10.0	1		11/15/23 14:24		AB
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>27.8</b>	mg/L	5.0	2.6	5		12/06/23 20:43	16887-00-6	
Fluoride	<b>&lt;0.12</b>	mg/L	0.20	0.12	1		12/06/23 20:32	16984-48-8	L1
Sulfate	<b>221</b>	mg/L	20.0	11.0	20		12/08/23 19:35	14808-79-8	H1

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60441586

Sample: R-FB-1 Lab ID: 60441586013 Collected: 11/08/23 11:55 Received: 11/10/23 05:36 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	<0.64	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:45	7440-39-3	
Boron	<6.4	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:45	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:45	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:45	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:45	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:45	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:45	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:45	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:45	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:45	7440-09-7	
Sodium	<115	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:45	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:51	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:51	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:51	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:51	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/21/23 17:12		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	7.0	mg/L	5.0	5.0	1		11/15/23 14:33		B
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	<0.53	mg/L	1.0	0.53	1		12/06/23 21:17	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/06/23 21:17	16984-48-8	L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/06/23 21:17	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch:	873120	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441586001, 60441586002, 60441586003

METHOD BLANK: 3458300 Matrix: Water

Associated Lab Samples: 60441586001, 60441586002, 60441586003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	11/20/23 17:04	
Boron	ug/L	<6.4	100	6.4	11/20/23 17:04	
Calcium	ug/L	<26.9	200	26.9	11/20/23 17:04	
Iron	ug/L	<9.1	50.0	9.1	11/20/23 17:04	
Lead	ug/L	<3.8	10.0	3.8	11/20/23 17:04	
Lithium	ug/L	<3.7	10.0	3.7	11/20/23 17:04	
Magnesium	ug/L	<20.1	50.0	20.1	11/20/23 17:04	
Manganese	ug/L	<0.39	5.0	0.39	11/20/23 17:04	
Molybdenum	ug/L	<1.0	20.0	1.0	11/20/23 17:04	
Potassium	ug/L	<69.7	500	69.7	11/20/23 17:04	
Sodium	ug/L	<115	500	115	11/20/23 17:04	

LABORATORY CONTROL SAMPLE: 3458301

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Boron	ug/L	1000	970	97	85-115	
Calcium	ug/L	10000	10500	105	85-115	
Iron	ug/L	10000	10000	100	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1010	101	85-115	
Magnesium	ug/L	10000	10500	105	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Molybdenum	ug/L	1000	994	99	85-115	
Potassium	ug/L	10000	10100	101	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3458302 3458303

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Barium	ug/L	57.3	1000	1000	1050	99	101	70-130	2	20	
Boron	ug/L	14200	1000	1000	15500	127	159	70-130	2	20 M1	
Calcium	ug/L	18600	10000	10000	29000	104	112	70-130	3	20	
Iron	ug/L	114	10000	10000	9960	98	102	70-130	3	20	
Lead	ug/L	<3.8	1000	1000	1010	101	105	70-130	3	20	
Lithium	ug/L	12.0	1000	1000	1030	102	104	70-130	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60441586

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3458302 3458303												
Parameter	Units	60441586001		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Magnesium	ug/L	1490	10000	10000	11600	12000	101	105	70-130	4	20	
Manganese	ug/L	19.9	1000	1000	1000	1050	98	103	70-130	5	20	
Molybdenum	ug/L	722	1000	1000	1700	1780	97	106	70-130	5	20	
Potassium	ug/L	3380	10000	10000	13900	14100	106	107	70-130	1	20	
Sodium	ug/L	243000	10000	10000	256000	262000	132	194	70-130	2	20	M1

MATRIX SPIKE SAMPLE: 3458304								
Parameter	Units	60441589004		Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.	Conc.	Result	% Rec	Limits	
Barium	ug/L			128	1000	1150	102	70-130
Boron	ug/L			9710	1000	10800	113	70-130
Calcium	ug/L			42400	10000	53700	113	70-130
Iron	ug/L			2310	10000	12700	104	70-130
Lead	ug/L			<3.8	1000	1050	105	70-130
Lithium	ug/L			20.9	1000	1060	104	70-130
Magnesium	ug/L			6310	10000	16900	106	70-130
Manganese	ug/L			310	1000	1340	103	70-130
Molybdenum	ug/L			690	1000	1740	105	70-130
Potassium	ug/L			4190	10000	14700	105	70-130
Sodium	ug/L			202000	10000	215000	134	70-130 M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3458305 3458306												
Parameter	Units	60441589007		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Barium	ug/L	126	1000	1000	1130	1120	100	99	70-130	1	20	
Boron	ug/L	4270	1000	1000	5280	5310	101	104	70-130	1	20	
Calcium	ug/L	111000	10000	10000	122000	123000	109	117	70-130	1	20	
Iron	ug/L	2420	10000	10000	12600	12500	102	101	70-130	1	20	
Lead	ug/L	<3.8	1000	1000	1040	1040	104	104	70-130	0	20	
Lithium	ug/L	164	1000	1000	1220	1220	106	105	70-130	0	20	
Magnesium	ug/L	39000	10000	10000	50300	50600	112	116	70-130	1	20	
Manganese	ug/L	787	1000	1000	1780	1790	100	100	70-130	0	20	
Molybdenum	ug/L	245	1000	1000	1260	1260	101	102	70-130	0	20	
Potassium	ug/L	10300	10000	10000	21000	20900	107	107	70-130	0	20	
Sodium	ug/L	400000	10000	10000	408000	414000	84	142	70-130	1	20	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch:	873339	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013

METHOD BLANK: 3459050 Matrix: Water

Associated Lab Samples: 60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	11/27/23 11:52	
Boron	ug/L	<6.4	100	6.4	11/27/23 11:52	
Calcium	ug/L	<26.9	200	26.9	11/27/23 11:52	
Iron	ug/L	<9.1	50.0	9.1	11/27/23 11:52	
Lead	ug/L	<3.8	10.0	3.8	11/27/23 11:52	
Lithium	ug/L	<3.7	10.0	3.7	11/27/23 11:52	
Magnesium	ug/L	<20.1	50.0	20.1	11/27/23 11:52	
Manganese	ug/L	<0.39	5.0	0.39	11/27/23 11:52	
Molybdenum	ug/L	<1.0	20.0	1.0	11/27/23 11:52	
Potassium	ug/L	<69.7	500	69.7	11/27/23 11:52	
Sodium	ug/L	<115	500	115	11/27/23 11:52	

LABORATORY CONTROL SAMPLE: 3459051

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	976	98	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1070	107	85-115	
Lithium	ug/L	1000	1000	100	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1040	104	85-115	
Molybdenum	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	9680	97	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3459052 3459053

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60441589015 Result	Spike Conc.	Spike Conc.	MS Result						
Barium	ug/L	128	1000	1000	1150	1160	102	103	70-130	1	20
Boron	ug/L	615	1000	1000	1620	1610	100	100	70-130	0	20
Calcium	ug/L	116000	10000	10000	126000	125000	97	94	70-130	0	20
Iron	ug/L	301	10000	10000	10400	10400	101	101	70-130	0	20
Lead	ug/L	<3.8	1000	1000	1060	1060	106	106	70-130	0	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60441586

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3459052 3459053												
Parameter	Units	60441589015		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Lithium	ug/L	26.7	1000	1000	1070	1080	105	106	70-130	1	20	
Magnesium	ug/L	29900	10000	10000	40300	40300	104	103	70-130	0	20	
Manganese	ug/L	65.5	1000	1000	1090	1100	102	103	70-130	1	20	
Molybdenum	ug/L	16.3J	1000	1000	1040	1040	103	103	70-130	0	20	
Potassium	ug/L	3180	10000	10000	13300	13500	101	103	70-130	1	20	
Sodium	ug/L	31200	10000	10000	42100	42100	109	109	70-130	0	20	

MATRIX SPIKE SAMPLE: 3459054								
Parameter	Units	60441586011		Spike Conc.	MS	MS	% Rec Limits	Qualifiers
		Result	Spike Conc.		Result	% Rec		
Barium	ug/L		400	1000	1390	100	70-130	
Boron	ug/L		32.2J	1000	1020	99	70-130	
Calcium	ug/L		111000	10000	118000	75	70-130	
Iron	ug/L		9160	10000	19000	99	70-130	
Lead	ug/L		<3.8	1000	1050	105	70-130	
Lithium	ug/L		11.8	1000	1040	103	70-130	
Magnesium	ug/L		20100	10000	29700	96	70-130	
Manganese	ug/L		252	1000	1280	102	70-130	
Molybdenum	ug/L		<1.0	1000	1020	102	70-130	
Potassium	ug/L		1820	10000	11700	99	70-130	
Sodium	ug/L		19200	10000	29500	103	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch:	872972	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441586001, 60441586002, 60441586003

METHOD BLANK: 3457521 Matrix: Water

Associated Lab Samples: 60441586001, 60441586002, 60441586003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	11/16/23 12:46	
Arsenic	ug/L	<0.13	1.0	0.13	11/16/23 12:46	
Chromium	ug/L	<0.30	1.0	0.30	11/16/23 12:46	
Selenium	ug/L	<0.18	1.0	0.18	11/16/23 12:46	

LABORATORY CONTROL SAMPLE: 3457522

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	35.2	88	85-115	
Arsenic	ug/L	40	42.3	106	85-115	
Chromium	ug/L	40	42.5	106	85-115	
Selenium	ug/L	40	41.8	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3457523 3457524

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60441586001 Result	Spike Conc.	Spike Conc.	Result						
Antimony	ug/L	<0.12	40	40	34.7	34.9	87	87	70-130	1	20
Arsenic	ug/L	39.1	40	40	78.9	78.9	100	100	70-130	0	20
Chromium	ug/L	0.41J	40	40	39.4	39.6	97	98	70-130	1	20
Selenium	ug/L	0.61J	40	40	38.4	38.2	95	94	70-130	1	20

MATRIX SPIKE SAMPLE: 3457525

Parameter	Units	60441589004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	33.4	83	70-130	
Arsenic	ug/L	0.54J	40	40.6	100	70-130	
Chromium	ug/L	<0.30	40	38.4	95	70-130	
Selenium	ug/L	0.20J	40	37.9	94	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch:	873340	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013		

METHOD BLANK:	3459056	Matrix:	Water
Associated Lab Samples:	60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	12/05/23 19:01	
Arsenic	ug/L	<0.13	1.0	0.13	12/05/23 19:01	
Chromium	ug/L	<0.30	1.0	0.30	12/05/23 19:01	
Selenium	ug/L	<0.18	1.0	0.18	12/05/23 19:01	

LABORATORY CONTROL SAMPLE: 3459057						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	34.9	87	85-115	
Arsenic	ug/L	40	42.2	106	85-115	
Chromium	ug/L	40	42.2	106	85-115	
Selenium	ug/L	40	42.1	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3459058												3459059	
Parameter	Units	60441589016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Antimony	ug/L	0.36J	40	40	34.6	34.3	86	85	70-130	1	20		
Arsenic	ug/L	24.5	40	40	65.4	65.5	102	103	70-130	0	20		
Chromium	ug/L	0.37J	40	40	38.5	38.6	95	96	70-130	0	20		
Selenium	ug/L	5.9	40	40	43.6	43.1	94	93	70-130	1	20		

MATRIX SPIKE SAMPLE: 3459060											
Parameter	Units	60441589021 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers				
Antimony	ug/L	<0.12	40	34.9	87	70-130					
Arsenic	ug/L	1.3	40	43.1	105	70-130					
Chromium	ug/L	0.32J	40	41.3	102	70-130					
Selenium	ug/L	10.2	40	50.1	100	70-130					

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch: 873976

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441586001, 60441586002, 60441586003

METHOD BLANK: 3461569

Matrix: Water

Associated Lab Samples: 60441586001, 60441586002, 60441586003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/20/23 16:35	

LABORATORY CONTROL SAMPLE: 3461570

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	598	120	90-110	L1

SAMPLE DUPLICATE: 3461571

Parameter	Units	60441586001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	248	282	13	10	D6

SAMPLE DUPLICATE: 3461572

Parameter	Units	60441589007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	228	232	2	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch:	874276	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441586006, 60441586007

METHOD BLANK: 3462777 Matrix: Water

Associated Lab Samples: 60441586006, 60441586007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/21/23 12:32	

LABORATORY CONTROL SAMPLE: 3462778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	487	97	90-110	

SAMPLE DUPLICATE: 3462779

Parameter	Units	60441832011 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	55.9	52.8	6	10	

SAMPLE DUPLICATE: 3462780

Parameter	Units	60441687004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	470	474	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch: 874277

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013

METHOD BLANK: 3462782

Matrix: Water

Associated Lab Samples: 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/21/23 16:18	

LABORATORY CONTROL SAMPLE: 3462783

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	478	96	90-110	

SAMPLE DUPLICATE: 3462784

Parameter	Units	60441586008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	280	281	0	10	

SAMPLE DUPLICATE: 3462785

Parameter	Units	60442032003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	267	268	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch:	873157	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441586002, 60441586003

METHOD BLANK: 3458393 Matrix: Water

Associated Lab Samples: 60441586002, 60441586003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/13/23 11:10	

LABORATORY CONTROL SAMPLE: 3458394

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	811	81	80-120	

SAMPLE DUPLICATE: 3458395

Parameter	Units	60441748001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3090	3030	2	10	H1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch: 873316	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441586001

METHOD BLANK: 3458977 Matrix: Water

Associated Lab Samples: 60441586001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/14/23 10:46	

LABORATORY CONTROL SAMPLE: 3458978

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	1e

SAMPLE DUPLICATE: 3458979

Parameter	Units	60441586001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	841	840	0	10	

SAMPLE DUPLICATE: 3458980

Parameter	Units	60441589007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1720	1600	7	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch:	873505	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013

METHOD BLANK: 3459648 Matrix: Water

Associated Lab Samples: 60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	9.5	5.0	5.0	11/15/23 14:18	AB

LABORATORY CONTROL SAMPLE: 3459649

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3459650

Parameter	Units	60441589015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	486	570	16	10	D6

SAMPLE DUPLICATE: 3459651

Parameter	Units	60441586012 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	596	553	7	10	1e

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch:	873887	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441586001, 60441586002, 60441586003

METHOD BLANK: 3461086 Matrix: Water

Associated Lab Samples: 60441586001, 60441586002, 60441586003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/18/23 09:29	
Fluoride	mg/L	<0.12	0.20	0.12	11/18/23 09:29	
Sulfate	mg/L	<0.55	1.0	0.55	11/18/23 09:29	

METHOD BLANK: 3464208 Matrix: Water

Associated Lab Samples: 60441586001, 60441586002, 60441586003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/21/23 09:05	
Fluoride	mg/L	<0.12	0.20	0.12	11/21/23 09:05	
Sulfate	mg/L	<0.55	1.0	0.55	11/21/23 09:05	

METHOD BLANK: 3465486 Matrix: Water

Associated Lab Samples: 60441586001, 60441586002, 60441586003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/23/23 14:27	
Fluoride	mg/L	<0.12	0.20	0.12	11/23/23 14:27	
Sulfate	mg/L	<0.55	1.0	0.55	11/23/23 14:27	

LABORATORY CONTROL SAMPLE: 3461087

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	91	90-110	
Fluoride	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

LABORATORY CONTROL SAMPLE: 3464209

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60441586

LABORATORY CONTROL SAMPLE: 3465487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	5	4.8	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3461088 3461089

Parameter	Units	60441586001		MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	MS Conc.								
Chloride	mg/L	37.9	50	50	76.5	116	77	156	80-120	41	15	M1,R1	
Fluoride	mg/L	0.84	2.5	2.5	3.2	3.2	93	95	80-120	2	15		
Sulfate	mg/L	318	250	250	531	564	85	98	80-120	6	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3461091 3461092

Parameter	Units	60441589007		MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	MS Conc.								
Chloride	mg/L	711	250	250	957	958	99	99	80-120	0	15		
Fluoride	mg/L	0.90	2.5	2.5	3.2	3.2	94	93	80-120	1	15		
Sulfate	mg/L	123	50	50	171	229	95	211	80-120	29	15	M1,R1	

SAMPLE DUPLICATE: 3461090

Parameter	Units	60441586001		Dup Result	RPD	Max RPD	Qualifiers
		Result	Spike Conc.				
Chloride	mg/L	37.9	32.1	16	15	D6	
Fluoride	mg/L	0.84	0.83	1	15		
Sulfate	mg/L	318	292	8	15		

SAMPLE DUPLICATE: 3461093

Parameter	Units	60441589007		Dup Result	RPD	Max RPD	Qualifiers
		Result	Spike Conc.				
Chloride	mg/L	711	720	1	15		
Fluoride	mg/L	0.90	0.91	1	15		
Sulfate	mg/L	123	119	4	15		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch:	875881	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013		

METHOD BLANK:	3469000	Matrix:	Water
Associated Lab Samples:	60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/06/23 10:03	
Fluoride	mg/L	<0.12	0.20	0.12	12/06/23 10:03	
Sulfate	mg/L	<0.55	1.0	0.55	12/06/23 10:03	

METHOD BLANK:	3471850	Matrix:	Water
Associated Lab Samples:	60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/08/23 15:55	
Fluoride	mg/L	<0.12	0.20	0.12	12/08/23 15:55	
Sulfate	mg/L	<0.55	1.0	0.55	12/08/23 15:55	

LABORATORY CONTROL SAMPLE:	3469001					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

LABORATORY CONTROL SAMPLE:	3471851					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	90-110	
Fluoride	mg/L	2.5	2.8	113	90-110 L1	
Sulfate	mg/L	5	4.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	3469002	3469003											
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result								
Chloride	mg/L	5.0	5	5	9.9	10.1	98	102	80-120	2	15	H1	
Fluoride	mg/L	<0.12	2.5	2.5	2.7	2.8	106	112	80-120	6	15	H1	
Sulfate	mg/L	64.3	50	50	114	115	99	102	80-120	1	15	H1	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60441586

MATRIX SPIKE SAMPLE:		3469004					
Parameter	Units	60441586010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	67.8	50	109	83	80-120	
Fluoride	mg/L	<0.12	2.5	1.9	76	80-120	M0
Sulfate	mg/L	14.1	5	20.0	118	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

---

**Sample: R-MW-3**      **Lab ID: 60441586001**      Collected: 11/07/23 11:53      Received: 11/08/23 05:19      Matrix: Water  
PWS:      Site ID:      Sample Type:

---

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>-0.168 ± 0.292 (0.736)</b> <b>C:NA T:78%</b>	pCi/L	12/05/23 12:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.498 ± 0.350 (0.662)</b> <b>C:72% T:82%</b>	pCi/L	12/01/23 12:21	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-MW-4**      **Lab ID: 60441586002**      Collected: 11/06/23 13:48      Received: 11/08/23 05:19      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.534 ± 0.743 (1.26)</b> <b>C:NA T:91%</b>	pCi/L	12/05/23 12:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.56 ± 0.498 (0.616)</b> <b>C:77% T:86%</b>	pCi/L	12/01/23 12:21	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-MW-5**      **Lab ID: 60441586003**      Collected: 11/06/23 12:33      Received: 11/08/23 05:19      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.557 ± 0.583 (0.913)</b> <b>C:NA T:88%</b>	pCi/L	12/05/23 12:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.325 ± 0.339 (0.703)</b> <b>C:86% T:83%</b>	pCi/L	12/01/23 12:21	15262-20-1	

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
 without the written consent of Pace Analytical Services, LLC.





### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-MS-1**                      **Lab ID: 60441586004**    Collected: 11/07/23 11:53    Received: 11/08/23 05:19    Matrix: Water  
 PWS:                                      Site ID:                                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>112.30 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	12/05/23 12:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>77.95 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	12/01/23 12:21	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>100.71 %REC 10.88RPD ±</b> NA (NA) C:NA T:NA	pCi/L	12/05/23 12:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>89.57 %REC 13.87RPD ±</b> NA (NA) C:NA T:NA	pCi/L	12/01/23 12:22	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-MW-1**      **Lab ID: 60441586006**      Collected: 11/08/23 12:27      Received: 11/10/23 05:36      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0695 ± 0.491 (0.979)</b> <b>C:NA T:85%</b>	pCi/L	12/05/23 12:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.291 ± 0.406 (0.869)</b> <b>C:70% T:77%</b>	pCi/L	12/01/23 12:22	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-MW-2**      **Lab ID: 60441586007**      Collected: 11/08/23 12:57      Received: 11/10/23 05:36      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0700 ± 0.363 (0.753)</b> <b>C:NA T:81%</b>	pCi/L	12/05/23 12:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.742 ± 0.630 (1.28)</b> <b>C:63% T:74%</b>	pCi/L	12/01/23 12:22	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-MW-6**      **Lab ID: 60441586008**      Collected: 11/08/23 11:40      Received: 11/10/23 05:36      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>-0.563 ± 0.620 (1.42)</b> <b>C:NA T:89%</b>	pCi/L	12/05/23 12:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.0651 ± 0.342 (0.778)</b> <b>C:89% T:84%</b>	pCi/L	12/01/23 12:22	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.362 ± 0.504 (0.851)</b> <b>C:NA T:93%</b>	pCi/L	12/05/23 12:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.741 ± 0.407 (0.749)</b> <b>C:86% T:88%</b>	pCi/L	12/01/23 12:22	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-MW-B1**      **Lab ID: 60441586010**      Collected: 11/08/23 15:20      Received: 11/10/23 05:36      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.464 ± 0.569 (0.935)</b> <b>C:NA T:93%</b>	pCi/L	12/05/23 12:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.862 ± 0.451 (0.825)</b> <b>C:87% T:85%</b>	pCi/L	12/01/23 12:22	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>-0.0691 ± 0.590 (1.20)</b> <b>C:NA T:93%</b>	pCi/L	12/05/23 12:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.368 ± 0.290 (0.573)</b> <b>C:86% T:93%</b>	pCi/L	12/01/23 12:22	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.





### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-DUP-1**      **Lab ID: 60441586012**      Collected: 11/08/23 00:00      Received: 11/10/23 05:36      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>-0.270 ± 0.674 (1.40)</b> <b>C:NA T:85%</b>	pCi/L	12/05/23 12:36	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.383 ± 0.308 (0.606)</b> <b>C:89% T:78%</b>	pCi/L	12/01/23 12:22	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

**Sample: R-FB-1**      **Lab ID: 60441586013**      Collected: 11/08/23 11:55      Received: 11/10/23 05:36      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0670 ± 0.630 (1.22)</b> <b>C:NA T:90%</b>	pCi/L	12/05/23 12:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.190 ± 0.287 (0.619)</b> <b>C:87% T:82%</b>	pCi/L	12/01/23 12:22	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

---

QC Batch:	630806	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60441586001, 60441586002, 60441586003, 60441586004, 60441586005, 60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013

---

METHOD BLANK:	3075660	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60441586001, 60441586002, 60441586003, 60441586004, 60441586005, 60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013

---

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.114 ± 0.354 (0.685) C:NA T:86%	pCi/L	12/05/23 12:24	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60441586

QC Batch:	630807	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg
Associated Lab Samples:	60441586001, 60441586002, 60441586003, 60441586004, 60441586005, 60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013		

METHOD BLANK:	3075662	Matrix:	Water
Associated Lab Samples:	60441586001, 60441586002, 60441586003, 60441586004, 60441586005, 60441586006, 60441586007, 60441586008, 60441586009, 60441586010, 60441586011, 60441586012, 60441586013		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.421 ± 0.380 (0.772) C:76% T:84%	pCi/L	12/01/23 12:20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



## QUALIFIERS

Project: AMEREN RCPA

Pace Project No.: 60441586

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

1e Achieving a constant weight was not met for this sample.

AB Analyte was detected in an associated instrument blank.

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

H1 Analysis conducted outside the EPA method holding time.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA

Pace Project No.: 60441586

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441586001	R-MW-3	EPA 200.7	873120	EPA 200.7	873129
60441586002	R-MW-4	EPA 200.7	873120	EPA 200.7	873129
60441586003	R-MW-5	EPA 200.7	873120	EPA 200.7	873129
60441586006	R-MW-1	EPA 200.7	873339	EPA 200.7	873352
60441586007	R-MW-2	EPA 200.7	873339	EPA 200.7	873352
60441586008	R-MW-6	EPA 200.7	873339	EPA 200.7	873352
60441586009	R-MW-7 (r)	EPA 200.7	873339	EPA 200.7	873352
60441586010	R-MW-B1	EPA 200.7	873339	EPA 200.7	873352
60441586011	R-MW-B2	EPA 200.7	873339	EPA 200.7	873352
60441586012	R-DUP-1	EPA 200.7	873339	EPA 200.7	873352
60441586013	R-FB-1	EPA 200.7	873339	EPA 200.7	873352
60441586001	R-MW-3	EPA 200.8	872972	EPA 200.8	872997
60441586002	R-MW-4	EPA 200.8	872972	EPA 200.8	872997
60441586003	R-MW-5	EPA 200.8	872972	EPA 200.8	872997
60441586006	R-MW-1	EPA 200.8	873340	EPA 200.8	873353
60441586007	R-MW-2	EPA 200.8	873340	EPA 200.8	873353
60441586008	R-MW-6	EPA 200.8	873340	EPA 200.8	873353
60441586009	R-MW-7 (r)	EPA 200.8	873340	EPA 200.8	873353
60441586010	R-MW-B1	EPA 200.8	873340	EPA 200.8	873353
60441586011	R-MW-B2	EPA 200.8	873340	EPA 200.8	873353
60441586012	R-DUP-1	EPA 200.8	873340	EPA 200.8	873353
60441586013	R-FB-1	EPA 200.8	873340	EPA 200.8	873353
60441586001	R-MW-3	EPA 903.1	630806		
60441586002	R-MW-4	EPA 903.1	630806		
60441586003	R-MW-5	EPA 903.1	630806		
60441586004	R-MS-1	EPA 903.1	630806		
60441586005	R-MSD-1	EPA 903.1	630806		
60441586006	R-MW-1	EPA 903.1	630806		
60441586007	R-MW-2	EPA 903.1	630806		
60441586008	R-MW-6	EPA 903.1	630806		
60441586009	R-MW-7 (r)	EPA 903.1	630806		
60441586010	R-MW-B1	EPA 903.1	630806		
60441586011	R-MW-B2	EPA 903.1	630806		
60441586012	R-DUP-1	EPA 903.1	630806		
60441586013	R-FB-1	EPA 903.1	630806		
60441586001	R-MW-3	EPA 904.0	630807		
60441586002	R-MW-4	EPA 904.0	630807		
60441586003	R-MW-5	EPA 904.0	630807		
60441586004	R-MS-1	EPA 904.0	630807		
60441586005	R-MSD-1	EPA 904.0	630807		
60441586006	R-MW-1	EPA 904.0	630807		
60441586007	R-MW-2	EPA 904.0	630807		
60441586008	R-MW-6	EPA 904.0	630807		
60441586009	R-MW-7 (r)	EPA 904.0	630807		
60441586010	R-MW-B1	EPA 904.0	630807		
60441586011	R-MW-B2	EPA 904.0	630807		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA

Pace Project No.: 60441586

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441586012	R-DUP-1	EPA 904.0	630807		
60441586013	R-FB-1	EPA 904.0	630807		
60441586001	R-MW-3	SM 2320B	873976		
60441586002	R-MW-4	SM 2320B	873976		
60441586003	R-MW-5	SM 2320B	873976		
60441586006	R-MW-1	SM 2320B	874276		
60441586007	R-MW-2	SM 2320B	874276		
60441586008	R-MW-6	SM 2320B	874277		
60441586009	R-MW-7 (r)	SM 2320B	874277		
60441586010	R-MW-B1	SM 2320B	874277		
60441586011	R-MW-B2	SM 2320B	874277		
60441586012	R-DUP-1	SM 2320B	874277		
60441586013	R-FB-1	SM 2320B	874277		
60441586001	R-MW-3	SM 2540C	873316		
60441586002	R-MW-4	SM 2540C	873157		
60441586003	R-MW-5	SM 2540C	873157		
60441586006	R-MW-1	SM 2540C	873505		
60441586007	R-MW-2	SM 2540C	873505		
60441586008	R-MW-6	SM 2540C	873505		
60441586009	R-MW-7 (r)	SM 2540C	873505		
60441586010	R-MW-B1	SM 2540C	873505		
60441586011	R-MW-B2	SM 2540C	873505		
60441586012	R-DUP-1	SM 2540C	873505		
60441586013	R-FB-1	SM 2540C	873505		
60441586001	R-MW-3	EPA 300.0	873887		
60441586002	R-MW-4	EPA 300.0	873887		
60441586003	R-MW-5	EPA 300.0	873887		
60441586006	R-MW-1	EPA 300.0	875881		
60441586007	R-MW-2	EPA 300.0	875881		
60441586008	R-MW-6	EPA 300.0	875881		
60441586009	R-MW-7 (r)	EPA 300.0	875881		
60441586010	R-MW-B1	EPA 300.0	875881		
60441586011	R-MW-B2	EPA 300.0	875881		
60441586012	R-DUP-1	EPA 300.0	875881		
60441586013	R-FB-1	EPA 300.0	875881		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.

WO# : 60441586



DC#\_Title: ENV-FRM-LENE-0009\_Sample Co

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmitz Geoeng

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T298 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 1.4/2.0 Corr. Factor -0.3 Corrected 1.1/1.7/14.5

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 14.8

11/13/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>67187</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_





Scan QR Code for instructions

60441586

**CHAIN-OF-CUSTODY Analytical Request Document**

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Pace\* Location Requested (City/State):

Pace Analytical Kansas  
9608 Loiret Blvd., Lenexa, KS 66219

Company Name: RocksSmith Geoeengineering, LLC.  
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043

Contact/Report To: Mark Haddock  
Phone #: 314-974-6578

E-Mail: mark.haddock@rocksmithgeo.com

Cc E-Mail: Jeff Ingram, jeff.ingram@rocksmithgeo.com

Invoice To: Mark Haddock

Invoice E-Mail: mark.haddock@rocksmithgeo.com

Customer Project #: AMEREN RCRA

Purchase Order # (if applicable):

Quote #:

County / State origin of sample(s): Missouri

Regulatory Program (DW, RCRA, etc.) as applicable:

Rush (Pre-approval required):

[ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other

Field Filtered (if applicable): [ ] Yes [ ] No

Date Results Requested:

Analysis:

Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), 2'soils

Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

Matrix \* Comp / Grab

Customer Sample ID

Collected (or Composite Start) Date

Time

Composite End Date

Time

Rec CL7

Type of Iners Glass

Matrix \* Comp / Grab

Customer Sample ID

Collected (or Composite Start) Date

Time

Composite End Date

Time

Rec CL7

Type of Iners Glass

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

WT

Additional Instructions from Pace\*:

Collected By: *Duff Inger*

Printed Name: *Duff Inger*

Signature: *Duff Inger*

Received by/Company (Signature): *[Signature]*

Date/Time: 11/7/23 11:03 AM

Received by/Company (Signature): *[Signature]*

Date/Time: 11/7/23 05:19

Received by/Company (Signature): *[Signature]*

Date/Time: 11/7/23 05:19

Received by/Company (Signature): *[Signature]*

Date/Time: 11/7/23 05:19

Received by/Company (Signature): *[Signature]*

Date/Time: 11/7/23 05:19

# Goals: 3

Thermometer ID: T-198

Correction Factor (°C): -0.3

Obs. Temp (°C): 14.8

Corrected Temp (°C): 14.5

Date/Time: 11/7/23 05:19

Tracking Number:

Delivered by: [ ] In-Person [ ] Courier

[ ] FedEx [ ] UPS [ ] Other

Page: of

### CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Pace\* Location Requested (City/State):  
Pace Analytical Kansas  
9608 Loiret Blvd., Lenexa, KS 66219

Company Name: Rocksmith Geoeengineering, LLC.  
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043

Contact/Report To: Mark Haddock  
Phone #: 314-974-6578

E-Mail: mark.haddock@rocksmithgeo.com  
Cc E-Mail: Jeff Ingram, jeff.ingram@rocksmithgeo.com

Invoice To: Mark Haddock  
Invoice E-Mail: mark.haddock@rocksmithgeo.com

Scan QR Code for instructions

6041588

Customer Project #: AMEREN RCFA

Site Collection Info/Facility ID (as applicable):

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET  
Data Deliverables:  
[ ] Level II [ ] Level III [ ] Level IV  
[ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Missouri

Rush (Pre-approval required):  
[ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other  
Field Filtered (if applicable): [ ] Yes [ ] No  
Date Results Requested:

\* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

Specify Container Size \*\*  
\*\*\* Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) Encore, (8) TerraCore, (9) Other  
Identify Container Preservative Type \*\*\*  
\*\*\* Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Analysis Requested  
Lab Use Only  
Proj. Mgr: Jamie Church  
AcctNum / Client ID:  
Table #:  
Profile / Template: 15854, Line 1  
Preleg / Bottle Ord. ID: EZ 3011898  
Sample Comment

Customer Sample ID	Matrix *	Comp / Grab	Collected		Res. CLZ	Composite End		Number & Type of Containers	Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cal/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Preservation non-conformance identified for sample.
			Date	Time		Date	Time								
R-FB-1	WT														
R-MS-1	WT	G	11/7/23	1153				44	X						Parcel = MW-3
R-MSD-1	WT	G	11/7/23	1153				46	X						MW-3 parcel

Additional Instructions from Pace\*:

Collected By: *Jeff Ingram*  
Printed Name: Jeff Ingram  
Signature: *[Signature]*

Thermometer ID: T-298  
Correction Factor (°C): -0.3  
Obs. Temp. (°C): 1.4  
Corrected Temp. (°C): 1.1  
Date/Time: 11/8/23 05:19

Tracking Number: 1-929-148-1-1-17-1145

Received by/Company: *[Signature]*  
Date/Time: 11/7/23

Received by/Company: *[Signature]*  
Date/Time:

Received by/Company: *[Signature]*  
Date/Time:

Received by/Company: *[Signature]*  
Date/Time:

Delivered by: [ ] In-Person [ ] Courier  
[ ] FedEx [ ] UPS [ ] Other

Page: 54 of 66

1/2

Client: Rocksmitz

Profile #

Site:

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1																																
2																																
3	WT																		3			2	3									
4																			1			1	1									
5																			1			1	1									
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass		Plastic		Misc.	
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic
DG9H	40mL HCl amber vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NaOH plastic
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate
				BP4U	125mL unpreserved plastic
				BP4N	125mL HNO3 plastic
				BP4S	125mL H2SO4 plastic
				WPDU	16oz unpreserved plastic

Work Order Number:

60441586

2/2

Client: RocksSmith

Profile #

Notes

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1																														
2	WT																					2								
3	↓																					2								
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	BP1C 1L NaOH plastic	I Wipe/Swab
DG9H	40mL HCl amber vial	BP1N 1L HNO3 plastic	SP5T 120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U 1L unreserved plastic	AF Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U	40mL amber unreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H	40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	BP2U 500mL unreserved plastic	
VG9U	40mL unreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	<b>Matrix</b>
BG1U	1liter unres. glass	BP3F 250mL HNO3 plastic - field filtered	WT Water
BG3H	250mL HCl. Clear glass	BP3N 250mL HNO3 plastic	SL Solid
BG3U	250mL Unpres Clear glass	BP3U 250mL unreserved plastic	NAL Non-aqueous Liquid
WGDU	16oz clear soil jar	BP3S 250mL H2SO4 plastic	OL OIL
		BP3Z 250mL NaOH, Zn Acetate	WP Wipe
		BP4U 125mL unreserved plastic	DW Drinking Water
		BP4N 125mL HNO3 plastic	
		BP4S 125mL H2SO4 plastic	
		WPDU 16oz unreserved plastic	

Work Order Number: 60411586

WO#: 60441586



DC#\_Title: ENV-FRM-LENE-0009\_Sample

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: ROCKSMITH Geoveng

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T298 Type of Ice: WV Blue  None

Cooler Temperature (°C): As-read 1.4/1.0 Corr. Factor -0.3 Corrected 11.0.7/16.1

Date and initials of person examining contents:

13.8  
pu 11/10/27

Temperature should be above freezing to 6°C 16.4/14.1

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y  N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_





Company Name: Rocksmith Geoen지니어링, LLC  
 Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043

Contact/Report To: Mark Haddock  
 Phone #: 314-974-6578  
 E-Mail: mark.haddock@rocksmithgeo.com  
 Cc E-Mail: Jeff Ingram, jeff.ingram@rocksmithgeo.com  
 Invoice To: Mark Haddock  
 Invoice E-Mail: mark.haddock@rocksmithgeo.com

Scan QR Code for instructions

602141586

Customer Project #: AMEREN RCPA

Site Collection Info/Facility ID (as applicable):

Time Zone Collected: [ ] JAK [ ] JPT [ ] JMT [ ] JCT [ ] JET

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Missouri  
 Rush (Pre-approval required): DW PWSID # or WW Permit # as applicable:  
 [ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other  
 Date Results Requested:  
 Field Filtered (if applicable): [ ] Yes [ ] No  
 Analysis:

\* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

Customer Sample ID	Matrix *	Comp / Grab	Collected		Composite End	Date	Time	Res. CLZ	Number & Type of Containers	
			Date	Time					Plastic	Glass
R-FB-1	WT	6	11-8-23	1155					4	
R-MS-1	WT									
R-MSD-1	WT									

Additional Instructions from Pace:

Collected By: *JTH Ingram*  
 Printed Name:  
 Signature:  
 Received by/Company: *JTH Ingram*  
 Signature:  
 Date/Time: *11/7/23 1230*

Correction Factor (CF):  
 Thermometer ID: *T298*  
 Correction Factor (CF): *0.03*  
 Obs. Temp. (°C):  
 Corrected Temp. (°C): *13.8*

Trading Number:  
 Date/Time: *11/10/23 0536*  
 Date/Time:

Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other  
 Page: 9 of 4

1/2

Client: Rocksmitz Geoenig

Profile # BLIN = PAD

Notes Append to 60441586

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT																		1			2								
2																			1			2								
3																														
4																														
5																														
6	WT																													
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

Glass		Plastic		Misc.	
DG9B	40mL bisulfate clear vial	BP1C	1L NaOH plastic	I	Wipe/Swab
DG9H	40mL HCl amber vial	BP1N	1L HNO3 plastic	SP5T	120mL Coiform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U	1L unpreserved plastic	AF	Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C	500mL NaOH plastic	R	Terracore Kit
DG9U	40mL amber unpreserved	BP2N	500mL HNO3 plastic	U	Summa Can
VG9H	40mL HCl clear vial	BP2S	500mL H2SO4 plastic		
VG9T	40mL Na Thio. clear vial	BP2U	500mL unpreserved plastic		
VG9U	40mL unpreserved clear vial	BP2Z	500mL NaOH, Zn Acetate		
BG1S	1liter H2SO4 clear glass	BP3C	250mL NaOH plastic		
BG1U	1liter unpres glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water
BG3H	250mL HCL Clear glass	BP3N	250mL HNO3 plastic	SL	Solid
BG3U	250mL Unpres Clear glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid
WGDU	16oz clear soil jar	BP3S	250mL H2SO4 plastic	OL	OIL
		BP3Z	250mL NaOH, Zn Acetate	WP	Wipe
		BP4U	125mL unpreserved plastic	DW	Drinking Water
		BP4N	125mL HNO3 plastic		
		BP4S	125mL H2SO4 plastic		
		WPDU	16oz unpreserved plastic		

Work Order Number: 60441586



2/2

Client: Locksmiths Geoen9

Profile #

Notes: Append to 60441586

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT																		1			2	1							
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

Glass	Plastic	Misc.
DG9B 40mL bisulfate clear vial	BP1C 1L NaOH plastic	I Wipe/Swab
DG9H 40mL HCl amber vial	BP1N 1L HNO3 plastic	SP5T 120mL Coliform Na Thiosulfate
DG9M 40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q 40mL TSP amber vial	BP1U 1L unpreserved plastic	AF Air Filter
DG9S 40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T 40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U 40mL amber unpreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H 40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T 40mL Na Thio. clear vial	BP2U 500mL unpreserved plastic	
VG9U 40mL unpreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S 1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	
BG1U 1liter unpres glass	BP3F 250mL HNO3 plastic - field filtered	WT Water
BG3H 250mL HCL Clear glass	BP3N 250mL HNO3 plastic	SL Solid
BG3U 250mL Unpres Clear glass	BP3U 250mL unpreserved plastic	NAL Non-aqueous Liquid
WGDU 16oz clear soil jar	BP3S 250mL H2SO4 plastic	OL OIL
	BP3Z 250mL NaOH, Zn Acetate	WP Wipe
	BP4U 125mL unpreserved plastic	DW Drinking Water
	BP4N 125mL HNO3 plastic	
	BP4S 125mL H2SO4 plastic	
	WPDU 16oz unpreserved plastic	
		<b>Matrix</b>

Work Order Number:

60441586

# Internal Transfer Chain of Custody



Rush Multiplier  X  
 Samples Pre-Logged into eCOC

State Of Origin: MO  
 Cert. Needed:  Yes  No

Workorder: 60441586    Workorder Name: AMEREN RCPA    Owner Received Date: 11/8/2023    Results Requested By: 11/22/2023

Report To: Subcontract To

Jamie Church  
 Pace Analytical Kansas  
 9608 Loiret Blvd.  
 Lenexa, KS 66219  
 Phone 314-838-7223

Pace Analytical Pittsburgh  
 1638 Roseytown Road  
 Suites 2,3, & 4  
 Greensburg, PA 15601  
 Phone (724)850-5600

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HNO3	Preserved Containers	Radium 226	Radium 228	LAB USE ONLY
1	R-MW-3	RQS	11/7/2023 11:53	60441586001	Water	2		X		001
2	R-MW-4	PS	11/6/2023 13:48	60441586002	Water	2		X		002
3	R-MW-5	PS	11/6/2023 12:33	60441586003	Water	2		X		003
4	R-MS-1	PS	11/7/2023 11:53	60441586004	Water	2		X		004
5	R-MSD-1	PS	11/7/2023 11:53	60441586005	Water	2		X		005
6	R-MW-1	PS	11/8/2023 12:27	60441586006	Water	2		X		006
7	R-MW-2	PS	11/8/2023 12:57	60441586007	Water	2		X		007
8	R-MW-6	PS	11/8/2023 11:40	60441586008	Water	2		X		008
9	R-MW-7	PS	11/8/2023 09:10	60441586009	Water	2		X		009
10	R-MW-B1	PS	11/8/2023 15:20	60441586010	Water	2		X		010
11	R-MW-B2	PS	11/8/2023 16:05	60441586011	Water	2		X		011
12	R-DUP-1	PS	11/8/2023 00:00	60441586012	Water	2		X		012
13	R-FB-1	PS	11/8/2023 11:55	60441586013	Water	2		X		013

WO#: 30638930




30638930

Transfers		Released By	Date/Time	Received By	Date/Time	Comments	
1		<i>[Signature]</i>	11-13-23	<i>[Signature]</i>	11-13-23 4:10	Note: Sample 001 is parent sample for MS/MSD samples 004/005. KS sample location: Receiving	
2							
3							
Cooler Temperature on Receipt		°C		Custody Seal	Y or <input checked="" type="radio"/> N	Received on Ice	Y or <input checked="" type="radio"/> N
						Samples Intact	<input checked="" type="radio"/> or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.  
This chain of custody is considered complete as is since this information is available in the owner laboratory.

**WO# : 30638930**  
 PM: MAR Due Date: 12/07/23  
 CLIENT: PACE\_60\_LEKS


**DC#\_Title: ENV-FRM-GBUR-0088 v06\_Sample Condition Upon Receipt-  
Pittsburgh**  
**WO# : 30638930**  
 Effective Date: 09/20/2023  
 PM: MAR Due Date: 12/07/23  
 CLIENT: PACE\_60\_LEKS

Client Name: Pace Kansas

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other Initial / Date  
 Tracking Number: 6432 15948357  
 Custody Seal on Cooler/Box Present:  Yes  No Seals Intact:  Yes  No  
 Thermometer Used:          Type of Ice: Wet Blue None  
 Cooler Temperature: Observed Temp          °C Correction Factor:          °C Final Temp:          °C  
 Temp should be above freezing to 6°C

Examined By: TJ 11/14/23  
 Labeled By: TJ 11/14/23  
 Temped By:         

Comments:	Yes	No	NA	pH paper Lot#	D.P.D. Residual Chlorine Lot #
				<u>1000134</u>	<u>        </u>
Chain of Custody Present	<u>J</u>				
Chain of Custody Filled Out: -Were client corrections present on COC	<u>J</u>	<u>J</u>			
Chain of Custody Relinquished	<u>J</u>				
Sampler Name & Signature on COC:	<u>J</u>	<u>J</u>			
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	<u>J</u>				
Samples Arrived within Hold Time:	<u>J</u>				
Short Hold Time Analysis (<72hr remaining):		<u>J</u>			
Rush Turn Around Time Requested:		<u>J</u>			
Sufficient Volume:	<u>J</u>				
Correct Containers Used: -Pace Containers Used	<u>J</u>				
Containers Intact:	<u>J</u>				
Orthophosphate field filtered:			<u>J</u>		
Hex Cr Aqueous samples field filtered:			<u>J</u>		
Organic Samples checked for dechlorination			<u>J</u>		
Filtered volume received for dissolved tests:			<u>J</u>		
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<u>J</u>				
All containers meet method preservation requirements:	<u>J</u>			Initial when completed <u>TJ</u>	Date/Time of Preservation
8260C/D: Headspace in VOA Vials (> 6mm)			<u>J</u>	Lot# of added Preservative	
624.1: Headspace in VOA Vials (0mm)			<u>J</u>		
Trip Blank Present:			<u>J</u>		Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	<u>X</u>			Initial when completed <u>LB</u>	Date: <u>11-14-23</u> Survey Meter SN: <u>28014980</u>
Comments:					

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office. PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.



# Memorandum

January 16, 2024

---

**To:** Project File  
Rocksmith Geoengineering, LLC

**Project Number:** 23008

**CC:** Mark Haddock, Jeffrey Ingram

**From:** Grant Morey

**Email:** Grant.Morey@Rocksmithgeo.com

**RE:** **Data Validation Summary, Rush Island Energy Center – RCPA – Data Package 60441586**

---

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was analyzed outside of hold time, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates based high, and J- for estimates based low).
- When a laboratory control sample (LCS) accuracy criterion was not met, the associated sample result was qualified as an estimate (J+ for estimates biased high, J- for estimates biased low, and UJ for non-detects).

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering  
 Project Name: Ameren RCPA  
 Reviewer: G. Morey

Project Manager: J. Ingram  
 Project Number: 23008  
 Validation Date: 1/16/2024

Laboratory: Pace Analytical SDG #: 60441586  
 Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);  
 Matrix:  Air  Soil/Sed.  Water  Waste  EPA 903.1/904.0 (Radium 226+228)  
 Sample Names R-MW-3, R-MW-4, R-MW-5, R-MS-1, R-MSD-1, R-MW-1, R-MW-2, R-MW-6, R-MW-7(r), R-MW-B1, R-MW-B2, R-DUP-1, R-FB-1

**NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).**

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>11/6/2023 - 11/8/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>JSI, GTM</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Spec Cond, Turb, Temp, DO, ORP</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>No lab narrative.</u>
Note Deficiencies: <u></u>				

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R-DUP-1 collected @ R-MW-1
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Comments/Notes:**

General:

Chloride, fluoride, and sulfate were all analyzed outside of hold time for some samples. Results qualified as estimates.

Chloride and sulfate were diluted in several samples, Sulfide diluted in R-MW-2; no qualification necessary.

## QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

### Comments/Notes:

Method Blanks:

3459648: TDS (9.5). Associated with samples -006 through -013. Most sample results > RL and 10x blank: no qualification.  
Sample -013 > RL and < 10x blank: qualified as estimate.

Field Blanks:

R-FB-1 @ R-MW-6: TDS (7.0). Result > RL and 10x blank, no qualification necessary.

Laboratory control samples:

3471851: LCS recovery high for fluoride. Associated with samples -006 through -013. Detected results qualified with J+.

3461570: LCS recovery high for alkalinity. Associated with samples -001 through -003. Results qualified with J+

Duplicates:

R-DUP-1 @ R-MW-1: selenium detected in duplicate and not in parent sample, results qualified as estimates.

3461571: Lab duplicate exceeds max RPD for alkalinity (13%), associated with sample -001. Result qualified as estimate.

3461090: Lab duplicate exceeds max RPD for chloride (16%), associated with sample -001. Result qualified as estimate.

Lab duplicate max RPD: 10%: Alkalinity, TDS; 15%: Chloride, Fluoride, Sulfate.

Matrix Spike and Matrix Spike Duplicates:

3458302/3458303: MSD recovery high for boron, MS recovery and RPD within control limits, no qualification necessary. MS and MSD recoveries high for sodium, associated with sample -001. Result qualified as estimate.

3458304: MS recovery high for sodium, associated with unrelated sample, no qualification necessary.

3458305/3458306: MSD recovery high for sodium, MS recovery and RPD within control limits, no qualification necessary.

3461088/3461089: MS recovery low and RPD outside of control limits for chloride, associated with sample -001. Result qualified as estimate.

3469004: MS recovery low for fluoride, associated with sample -10. Result qualified as estimate.









December 19, 2023

Mark Haddock  
Rocksmith Geoengineering, LLC.  
2320 Creve Coeur Mill Road  
Maryland Heights, MO 63043

RE: Project: AMEREN RCPA-CA  
Pace Project No.: 60441589

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between November 08, 2023 and November 10, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church  
jamie.church@pacelabs.com  
314-838-7223  
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.  
Grant Morey, Rocksmith Geoengineering, LLC.



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### CERTIFICATIONS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

#### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

ANABISO/IEC 17025:2017 Rad Cert#: L24170

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 2950

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA010

Louisiana DEQ/TNI Certification #: 04086

Maine Certification #: 2023021

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572023-03

New Hampshire/TNI Certification #: 297622

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-015

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN02867

Texas/TNI Certification #: T104704188-22-18

Utah/TNI Certification #: PA014572223-14

USDA Soil Permit #: 525-23-67-77263

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

#### Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 88-00679

Illinois Certification #: 2000302023-5

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-23-17

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### SAMPLE SUMMARY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60441589001	R-P-05S	Water	11/06/23 11:25	11/08/23 05:19
60441589002	R-P-19S	Water	11/07/23 12:53	11/08/23 05:19
60441589003	R-P-19I	Water	11/07/23 13:25	11/08/23 05:19
60441589004	R-P-19D	Water	11/07/23 13:10	11/08/23 05:19
60441589005	R-P-21S	Water	11/07/23 11:10	11/08/23 05:19
60441589006	R-P-21I	Water	11/07/23 10:48	11/08/23 05:19
60441589007	R-P-21D	Water	11/07/23 09:20	11/08/23 05:19
60441589008	R-P-22S	Water	11/06/23 14:55	11/08/23 05:19
60441589009	R-P-22D	Water	11/06/23 16:02	11/08/23 05:19
60441589010	R-CA-DUP-1	Water	11/07/23 08:00	11/08/23 05:19
60441589011	R-CA-DUP-2	Water	11/07/23 11:00	11/08/23 05:19
60441589012	R-CA-FB-1	Water	11/07/23 10:05	11/08/23 05:19
60441589013	R-CA-MS-1	Water	11/07/23 09:20	11/08/23 05:19
60441589014	R-CA-MSD-1	Water	11/07/23 09:20	11/08/23 05:19
60441589015	R-P-16S	Water	11/08/23 13:20	11/10/23 05:36
60441589016	R-P-17S	Water	11/08/23 14:20	11/10/23 05:36
60441589017	R-P-17I	Water	11/08/23 14:40	11/10/23 05:36
60441589018	R-P-17D	Water	11/08/23 13:58	11/10/23 05:36
60441589019	R-P-29S	Water	11/09/23 10:35	11/10/23 05:36
60441589020	R-P-29D	Water	11/09/23 09:25	11/10/23 05:36
60441589021	R-P-30S	Water	11/08/23 11:34	11/10/23 05:36
60441589022	R-CA-FB-2	Water	11/08/23 14:10	11/10/23 05:36

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441589001	R-P-05S	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441589002	R-P-19S	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441589003	R-P-19I	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441589004	R-P-19D	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441589005	R-P-21S	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441589006	R-P-21I	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441589007	R-P-21D	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60441589008	R-P-22S	SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
60441589009	R-P-22D	EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
60441589010	R-CA-DUP-1	SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441589011	R-CA-DUP-2	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**SAMPLE ANALYTE COUNT**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441589012	R-CA-FB-1	SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60441589013	R-CA-MS-1	SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
60441589014	R-CA-MSD-1	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
60441589015	R-P-16S	EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
60441589016	R-P-17S	EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
60441589017	R-P-17I	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 200.7	JXD	11	PASI-K
60441589018	R-P-17D	EPA 200.8	JGP	4	PASI-K

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





**SAMPLE ANALYTE COUNT**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441589019	R-P-29S	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
60441589020	R-P-29D	SM 2540C	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
60441589021	R-P-30S	EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
60441589022	R-CA-FB-2	SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	11	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City  
 PASI-PA = Pace Analytical Services - Greensburg

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
 without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-P-05S Lab ID: 60441589001 Collected: 11/06/23 11:25 Received: 11/08/23 05:19 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	210	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 17:31	7440-39-3	
Boron	4410	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 17:31	7440-42-8	
Calcium	67100	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 17:31	7440-70-2	
Iron	11000	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 17:31	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 17:31	7439-92-1	
Lithium	15.2	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 17:31	7439-93-2	
Magnesium	23300	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 17:31	7439-95-4	
Manganese	263	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 17:31	7439-96-5	
Molybdenum	6.0J	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 17:31	7439-98-7	
Potassium	5930	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 17:31	7440-09-7	
Sodium	34200	ug/L	500	115	1	11/11/23 15:25	11/20/23 17:31	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	11/10/23 10:20	11/17/23 11:49	7440-36-0	
Arsenic	195	ug/L	1.0	0.13	1	11/10/23 10:20	11/17/23 11:49	7440-38-2	
Chromium	0.34J	ug/L	1.0	0.30	1	11/10/23 10:20	11/17/23 11:49	7440-47-3	
Selenium	0.23J	ug/L	1.0	0.18	1	11/10/23 10:20	11/17/23 11:49	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	308	mg/L	20.0	10.5	1		11/20/23 16:35		L1
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	360	mg/L	10.0	10.0	1		11/13/23 11:19		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	25.2	mg/L	2.0	1.1	2		11/18/23 15:54	16887-00-6	
Fluoride	0.34	mg/L	0.20	0.12	1		11/18/23 15:41	16984-48-8	
Sulfate	19.7	mg/L	1.0	0.55	1		11/18/23 15:41	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-19S**      **Lab ID: 60441589002**      Collected: 11/07/23 12:53      Received: 11/08/23 05:19      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	<b>177</b>	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 17:33	7440-39-3	
Boron	<b>195</b>	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 17:33	7440-42-8	
Calcium	<b>96300</b>	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 17:33	7440-70-2	
Iron	<b>4780</b>	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 17:33	7439-89-6	
Lead	<b>&lt;3.8</b>	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 17:33	7439-92-1	
Lithium	<b>19.6</b>	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 17:33	7439-93-2	
Magnesium	<b>17600</b>	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 17:33	7439-95-4	
Manganese	<b>777</b>	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 17:33	7439-96-5	
Molybdenum	<b>5.5J</b>	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 17:33	7439-98-7	
Potassium	<b>4920</b>	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 17:33	7440-09-7	
Sodium	<b>8930</b>	ug/L	500	115	1	11/11/23 15:25	11/20/23 17:33	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<b>&lt;0.12</b>	ug/L	1.0	0.12	1	11/10/23 10:20	11/17/23 11:52	7440-36-0	
Arsenic	<b>8.1</b>	ug/L	1.0	0.13	1	11/10/23 10:20	11/17/23 11:52	7440-38-2	
Chromium	<b>0.41J</b>	ug/L	1.0	0.30	1	11/10/23 10:20	11/17/23 11:52	7440-47-3	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	11/10/23 10:20	11/17/23 11:52	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<b>308</b>	mg/L	20.0	10.5	1		11/20/23 16:35		L1
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<b>127</b>	mg/L	10.0	10.0	1		11/14/23 10:48		1e
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	<b>1.2</b>	mg/L	1.0	0.53	1		11/18/23 16:34	16887-00-6	
Fluoride	<b>0.33</b>	mg/L	0.20	0.12	1		11/18/23 16:34	16984-48-8	
Sulfate	<b>31.9</b>	mg/L	5.0	2.8	5		11/21/23 12:01	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-P-19I Lab ID: 60441589003 Collected: 11/07/23 13:25 Received: 11/08/23 05:19 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	69.4	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 17:35	7440-39-3	
Boron	3790	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 17:35	7440-42-8	
Calcium	19300	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 17:35	7440-70-2	
Iron	31.9J	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 17:35	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 17:35	7439-92-1	
Lithium	134	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 17:35	7439-93-2	
Magnesium	420	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 17:35	7439-95-4	
Manganese	2.7J	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 17:35	7439-96-5	
Molybdenum	68.5	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 17:35	7439-98-7	
Potassium	43200	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 17:35	7440-09-7	
Sodium	180000	ug/L	500	115	1	11/11/23 15:25	11/20/23 17:35	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	0.16J	ug/L	1.0	0.12	1	11/10/23 10:20	11/17/23 11:55	7440-36-0	
Arsenic	29.2	ug/L	1.0	0.13	1	11/10/23 10:20	11/17/23 11:55	7440-38-2	
Chromium	0.38J	ug/L	1.0	0.30	1	11/10/23 10:20	11/17/23 11:55	7440-47-3	
Selenium	0.20J	ug/L	1.0	0.18	1	11/10/23 10:20	11/17/23 11:55	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	354	mg/L	20.0	10.5	1		11/20/23 16:35		L1
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	685	mg/L	10.0	10.0	1		11/14/23 10:49		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	16.3	mg/L	1.0	0.53	1		11/18/23 17:01	16887-00-6	
Fluoride	0.47	mg/L	0.20	0.12	1		11/18/23 17:01	16984-48-8	
Sulfate	104	mg/L	10.0	5.5	10		11/21/23 12:14	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-P-19D Lab ID: 60441589004 Collected: 11/07/23 13:10 Received: 11/08/23 05:19 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	128	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 17:38	7440-39-3	
Boron	9710	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 17:38	7440-42-8	
Calcium	42400	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 17:38	7440-70-2	
Iron	2310	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 17:38	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 17:38	7439-92-1	
Lithium	20.9	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 17:38	7439-93-2	
Magnesium	6310	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 17:38	7439-95-4	
Manganese	310	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 17:38	7439-96-5	
Molybdenum	690	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 17:38	7439-98-7	
Potassium	4190	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 17:38	7440-09-7	
Sodium	202000	ug/L	500	115	1	11/11/23 15:25	11/20/23 17:38	7440-23-5	M1
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	11/10/23 10:20	11/16/23 13:12	7440-36-0	
Arsenic	0.54J	ug/L	1.0	0.13	1	11/10/23 10:20	11/16/23 13:12	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/10/23 10:20	11/16/23 13:12	7440-47-3	
Selenium	0.20J	ug/L	1.0	0.18	1	11/10/23 10:20	11/16/23 13:12	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	224	mg/L	20.0	10.5	1		11/20/23 16:35		L1
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	753	mg/L	13.3	13.3	1		11/14/23 10:49		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	75.2	mg/L	10.0	5.3	10		11/21/23 12:28	16887-00-6	
Fluoride	1.6	mg/L	0.20	0.12	1		11/18/23 17:28	16984-48-8	
Sulfate	190	mg/L	50.0	27.5	50		11/18/23 17:41	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-21S**      **Lab ID: 60441589005**      Collected: 11/07/23 11:10      Received: 11/08/23 05:19      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	279	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 17:42	7440-39-3	
Boron	614	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 17:42	7440-42-8	
Calcium	141000	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 17:42	7440-70-2	
Iron	28700	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 17:42	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 17:42	7439-92-1	
Lithium	19.6	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 17:42	7439-93-2	
Magnesium	39700	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 17:42	7439-95-4	
Manganese	1310	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 17:42	7439-96-5	
Molybdenum	2.5J	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 17:42	7439-98-7	
Potassium	4360	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 17:42	7440-09-7	
Sodium	32500	ug/L	500	115	1	11/11/23 15:25	11/20/23 17:42	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	11/10/23 10:20	11/17/23 11:58	7440-36-0	
Arsenic	97.9	ug/L	1.0	0.13	1	11/10/23 10:20	11/17/23 11:58	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/10/23 10:20	11/17/23 11:58	7440-47-3	
Selenium	0.22J	ug/L	1.0	0.18	1	11/10/23 10:20	11/17/23 11:58	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	512	mg/L	20.0	10.5	1		11/20/23 16:35		L1
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	588	mg/L	10.0	10.0	1		11/14/23 10:49		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	14.5	mg/L	1.0	0.53	1		11/18/23 17:54	16887-00-6	
Fluoride	0.32	mg/L	0.20	0.12	1		11/18/23 17:54	16984-48-8	
Sulfate	7.1	mg/L	1.0	0.55	1		11/18/23 17:54	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

**ANALYTICAL RESULTS**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-211**      **Lab ID: 60441589006**      Collected: 11/07/23 10:48      Received: 11/08/23 05:19      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	75.4	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 17:44	7440-39-3	
Boron	4500	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 17:44	7440-42-8	
Calcium	36900	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 17:44	7440-70-2	
Iron	402	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 17:44	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 17:44	7439-92-1	
Lithium	24.0	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 17:44	7439-93-2	
Magnesium	4620	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 17:44	7439-95-4	
Manganese	82.9	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 17:44	7439-96-5	
Molybdenum	319	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 17:44	7439-98-7	
Potassium	6760	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 17:44	7440-09-7	
Sodium	142000	ug/L	500	115	1	11/11/23 15:25	11/20/23 17:44	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	11/10/23 10:20	11/20/23 15:56	7440-36-0	
Arsenic	6.0	ug/L	1.0	0.13	1	11/10/23 10:20	11/20/23 15:56	7440-38-2	
Chromium	0.40J	ug/L	1.0	0.30	1	11/10/23 10:20	11/20/23 15:56	7440-47-3	
Selenium	0.44J	ug/L	1.0	0.18	1	11/10/23 10:20	11/20/23 15:56	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	200	mg/L	20.0	10.5	1		11/20/23 16:35		L1
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	511	mg/L	10.0	10.0	1		11/14/23 10:50		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	75.0	mg/L	10.0	5.3	10		11/23/23 14:53	16887-00-6	
Fluoride	0.86	mg/L	0.20	0.12	1		11/21/23 12:41	16984-48-8	
Sulfate	84.8	mg/L	10.0	5.5	10		11/23/23 14:53	14808-79-8	

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-P-21D Lab ID: 60441589007 Collected: 11/07/23 09:20 Received: 11/08/23 05:19 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	126	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 17:46	7440-39-3	
Boron	4270	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 17:46	7440-42-8	
Calcium	111000	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 17:46	7440-70-2	
Iron	2420	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 17:46	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 17:46	7439-92-1	
Lithium	164	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 17:46	7439-93-2	
Magnesium	39000	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 17:46	7439-95-4	
Manganese	787	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 17:46	7439-96-5	
Molybdenum	245	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 17:46	7439-98-7	
Potassium	10300	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 17:46	7440-09-7	
Sodium	400000	ug/L	500	115	1	11/11/23 15:25	11/20/23 17:46	7440-23-5	M1
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	11/10/23 10:20	11/20/23 15:59	7440-36-0	
Arsenic	0.56J	ug/L	1.0	0.13	1	11/10/23 10:20	11/20/23 15:59	7440-38-2	
Chromium	0.33J	ug/L	1.0	0.30	1	11/10/23 10:20	11/20/23 15:59	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/10/23 10:20	11/20/23 15:59	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	228	mg/L	20.0	10.5	1		11/20/23 16:35		L1
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	1720	mg/L	66.7	66.7	1		11/14/23 10:50		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	711	mg/L	50.0	26.4	50		11/21/23 14:27	16887-00-6	
Fluoride	0.90	mg/L	0.20	0.12	1		11/21/23 13:08	16984-48-8	
Sulfate	123	mg/L	10.0	5.5	10		11/23/23 15:07	14808-79-8	M1,R1

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



**ANALYTICAL RESULTS**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-22S**      **Lab ID: 60441589008**      Collected: 11/06/23 14:55      Received: 11/08/23 05:19      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	<b>68.4</b>	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 17:58	7440-39-3	
Boron	<b>9310</b>	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 17:58	7440-42-8	
Calcium	<b>21700</b>	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 17:58	7440-70-2	
Iron	<b>1480</b>	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 17:58	7439-89-6	
Lead	<b>6.4J</b>	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 17:58	7439-92-1	
Lithium	<b>24.0</b>	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 17:58	7439-93-2	
Magnesium	<b>3170</b>	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 17:58	7439-95-4	
Manganese	<b>67.5</b>	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 17:58	7439-96-5	
Molybdenum	<b>335</b>	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 17:58	7439-98-7	
Potassium	<b>4330</b>	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 17:58	7440-09-7	
Sodium	<b>183000</b>	ug/L	500	115	1	11/11/23 15:25	11/20/23 17:58	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8    Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<b>&lt;0.61</b>	ug/L	5.0	0.61	5	11/10/23 10:20	11/20/23 16:11	7440-36-0	D3
Arsenic	<b>11.2</b>	ug/L	5.0	0.64	5	11/10/23 10:20	11/20/23 16:11	7440-38-2	
Chromium	<b>2.0J</b>	ug/L	5.0	1.5	5	11/10/23 10:20	11/20/23 16:11	7440-47-3	
Selenium	<b>1.2J</b>	ug/L	5.0	0.91	5	11/10/23 10:20	11/20/23 16:11	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<b>306</b>	mg/L	20.0	10.5	1		11/20/23 16:35		L1
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<b>595</b>	mg/L	10.0	10.0	1		11/13/23 11:20		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	<b>28.9</b>	mg/L	10.0	5.3	10		11/23/23 16:04	16887-00-6	
Fluoride	<b>2.1</b>	mg/L	0.20	0.12	1		11/21/23 15:21	16984-48-8	
Sulfate	<b>112</b>	mg/L	10.0	5.5	10		11/23/23 16:04	14808-79-8	

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-P-22D Lab ID: 60441589009 Collected: 11/06/23 16:02 Received: 11/08/23 05:19 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	160	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 18:01	7440-39-3	
Boron	601	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 18:01	7440-42-8	
Calcium	184000	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 18:01	7440-70-2	
Iron	3520	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 18:01	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 18:01	7439-92-1	
Lithium	54.6	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 18:01	7439-93-2	
Magnesium	45200	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 18:01	7439-95-4	
Manganese	532	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 18:01	7439-96-5	
Molybdenum	8.9J	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 18:01	7439-98-7	
Potassium	7600	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 18:01	7440-09-7	
Sodium	64100	ug/L	500	115	1	11/11/23 15:25	11/20/23 18:01	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	11/10/23 10:20	11/20/23 16:14	7440-36-0	
Arsenic	2.9	ug/L	1.0	0.13	1	11/10/23 10:20	11/20/23 16:14	7440-38-2	
Chromium	0.41J	ug/L	1.0	0.30	1	11/10/23 10:20	11/20/23 16:14	7440-47-3	
Selenium	0.27J	ug/L	1.0	0.18	1	11/10/23 10:20	11/20/23 16:14	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	526	mg/L	20.0	10.5	1		11/20/23 16:35		L1
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	816	mg/L	13.3	13.3	1		11/13/23 11:20		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	33.8	mg/L	10.0	5.3	10		11/21/23 16:01	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		11/21/23 15:48	16984-48-8	
Sulfate	150	mg/L	10.0	5.5	10		11/21/23 16:01	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-CA-DUP-1 Lab ID: 60441589010 Collected: 11/07/23 08:00 Received: 11/08/23 05:19 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	74.8	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 18:03	7440-39-3	
Boron	4550	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 18:03	7440-42-8	
Calcium	36500	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 18:03	7440-70-2	
Iron	398	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 18:03	7439-89-6	
Lead	4.4J	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 18:03	7439-92-1	
Lithium	26.2	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 18:03	7439-93-2	
Magnesium	4690	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 18:03	7439-95-4	
Manganese	82.7	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 18:03	7439-96-5	
Molybdenum	320	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 18:03	7439-98-7	
Potassium	6830	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 18:03	7440-09-7	
Sodium	142000	ug/L	500	115	1	11/11/23 15:25	11/20/23 18:03	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	11/10/23 10:20	11/20/23 16:17	7440-36-0	
Arsenic	6.0	ug/L	1.0	0.13	1	11/10/23 10:20	11/20/23 16:17	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/10/23 10:20	11/20/23 16:17	7440-47-3	
Selenium	0.34J	ug/L	1.0	0.18	1	11/10/23 10:20	11/20/23 16:17	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	200	mg/L	20.0	10.5	1		11/20/23 16:36		L1
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	514	mg/L	10.0	10.0	1		11/14/23 10:50		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	75.3	mg/L	10.0	5.3	10		11/21/23 16:28	16887-00-6	
Fluoride	0.81	mg/L	0.20	0.12	1		11/21/23 16:14	16984-48-8	
Sulfate	73.9	mg/L	10.0	5.5	10		11/21/23 16:28	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-CA-DUP-2 Lab ID: 60441589011 Collected: 11/07/23 11:00 Received: 11/08/23 05:19 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	125	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 18:05	7440-39-3	
Boron	9560	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 18:05	7440-42-8	
Calcium	41400	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 18:05	7440-70-2	
Iron	2260	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 18:05	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 18:05	7439-92-1	
Lithium	19.9	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 18:05	7439-93-2	
Magnesium	6230	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 18:05	7439-95-4	
Manganese	308	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 18:05	7439-96-5	
Molybdenum	687	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 18:05	7439-98-7	
Potassium	4020	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 18:05	7440-09-7	
Sodium	199000	ug/L	500	115	1	11/11/23 15:25	11/20/23 18:05	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	11/10/23 10:20	11/20/23 16:20	7440-36-0	
Arsenic	0.57J	ug/L	1.0	0.13	1	11/10/23 10:20	11/20/23 16:20	7440-38-2	
Chromium	0.31J	ug/L	1.0	0.30	1	11/10/23 10:20	11/20/23 16:20	7440-47-3	
Selenium	0.19J	ug/L	1.0	0.18	1	11/10/23 10:20	11/20/23 16:20	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	254	mg/L	20.0	10.5	1		11/20/23 16:36		L1
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	699	mg/L	13.3	13.3	1		11/14/23 10:50		1e
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	75.7	mg/L	10.0	5.3	10		11/23/23 16:17	16887-00-6	
Fluoride	1.5	mg/L	0.20	0.12	1		11/21/23 17:08	16984-48-8	
Sulfate	196	mg/L	20.0	11.0	20		11/23/23 16:57	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-CA-FB-1 Lab ID: 60441589012 Collected: 11/07/23 10:05 Received: 11/08/23 05:19 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	<0.64	ug/L	5.0	0.64	1	11/11/23 15:25	11/20/23 18:07	7440-39-3	
Boron	11.5J	ug/L	100	6.4	1	11/11/23 15:25	11/20/23 18:07	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	11/11/23 15:25	11/20/23 18:07	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	11/11/23 15:25	11/20/23 18:07	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/11/23 15:25	11/20/23 18:07	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	11/11/23 15:25	11/20/23 18:07	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	11/11/23 15:25	11/20/23 18:07	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	11/11/23 15:25	11/20/23 18:07	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	11/11/23 15:25	11/20/23 18:07	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	11/11/23 15:25	11/20/23 18:07	7440-09-7	
Sodium	142J	ug/L	500	115	1	11/11/23 15:25	11/20/23 18:07	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	11/10/23 10:20	11/20/23 16:23	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	11/10/23 10:20	11/20/23 16:23	7440-38-2	
Chromium	0.41J	ug/L	1.0	0.30	1	11/10/23 10:20	11/20/23 16:23	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/10/23 10:20	11/20/23 16:23	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/20/23 16:36		L1
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		11/14/23 10:50		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	<0.53	mg/L	1.0	0.53	1		11/21/23 17:21	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		11/21/23 17:21	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		11/21/23 17:21	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-P-16S Lab ID: 60441589015 Collected: 11/08/23 13:20 Received: 11/10/23 05:36 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	128	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 11:56	7440-39-3	
Boron	615	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 11:56	7440-42-8	
Calcium	116000	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 11:56	7440-70-2	
Iron	301	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 11:56	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 11:56	7439-92-1	
Lithium	26.7	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 11:56	7439-93-2	
Magnesium	29900	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 11:56	7439-95-4	
Manganese	65.5	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 11:56	7439-96-5	
Molybdenum	16.3J	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 11:56	7439-98-7	
Potassium	3180	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 11:56	7440-09-7	
Sodium	31200	ug/L	500	115	1	11/14/23 10:06	11/27/23 11:56	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	0.13J	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:06	7440-36-0	
Arsenic	1.8	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:06	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:06	7440-47-3	
Selenium	0.27J	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:06	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	396	mg/L	20.0	10.5	1		11/21/23 14:28		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	486	mg/L	10.0	10.0	1		11/15/23 14:20		1e,AB
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	5.0	mg/L	1.0	0.53	1		12/08/23 16:18	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/08/23 16:18	16984-48-8	H1,L1
Sulfate	64.3	mg/L	10.0	5.5	10		12/08/23 16:53	14808-79-8	H1

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-P-17S Lab ID: 60441589016 Collected: 11/08/23 14:20 Received: 11/10/23 05:36 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	139	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:02	7440-39-3	
Boron	1760	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:02	7440-42-8	
Calcium	121000	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:02	7440-70-2	
Iron	1260	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:02	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:02	7439-92-1	
Lithium	36.7	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:02	7439-93-2	
Magnesium	25500	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:02	7439-95-4	
Manganese	3160	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:02	7439-96-5	
Molybdenum	14.0J	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:02	7439-98-7	
Potassium	2600	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:02	7440-09-7	
Sodium	328000	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:02	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	0.36J	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:08	7440-36-0	
Arsenic	24.5	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:08	7440-38-2	
Chromium	0.37J	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:08	7440-47-3	
Selenium	5.9	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:08	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	696	mg/L	20.0	10.5	1		11/21/23 14:35		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	1320	mg/L	20.0	20.0	1		11/15/23 14:21		AB
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	61.0	mg/L	10.0	5.3	10		12/08/23 17:28	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/06/23 13:40	16984-48-8	L1
Sulfate	299	mg/L	50.0	27.5	50		12/06/23 13:52	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-P-17I Lab ID: 60441589017 Collected: 11/08/23 14:40 Received: 11/10/23 05:36 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	16.9	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:04	7440-39-3	
Boron	2570	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:04	7440-42-8	
Calcium	10500	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:04	7440-70-2	
Iron	235	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:04	7439-89-6	
Lead	6.5J	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:04	7439-92-1	
Lithium	4.4J	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:04	7439-93-2	
Magnesium	280	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:04	7439-95-4	
Manganese	4.8J	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:04	7439-96-5	
Molybdenum	145	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:04	7439-98-7	
Potassium	2290	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:04	7440-09-7	
Sodium	258000	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:04	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	0.37J	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 21:25	7440-36-0	
Arsenic	39.7	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 21:25	7440-38-2	
Chromium	0.75J	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 21:25	7440-47-3	
Selenium	1.7	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 21:25	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	172	mg/L	20.0	10.5	1		11/21/23 14:55		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	825	mg/L	13.3	13.3	1		11/15/23 14:21		AB
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	73.5	mg/L	10.0	5.3	10		12/08/23 18:14	16887-00-6	H1
Fluoride	1.3	mg/L	0.20	0.12	1		12/08/23 17:39	16984-48-8	H1,L1
Sulfate	347	mg/L	50.0	27.5	50		12/06/23 14:15	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.





## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-P-17D Lab ID: 60441589018 Collected: 11/08/23 13:58 Received: 11/10/23 05:36 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	100	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:07	7440-39-3	
Boron	8200	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:07	7440-42-8	
Calcium	46300	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:07	7440-70-2	
Iron	2330	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:07	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:07	7439-92-1	
Lithium	40.2	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:07	7439-93-2	
Magnesium	9970	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:07	7439-95-4	
Manganese	389	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:07	7439-96-5	
Molybdenum	687	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:07	7439-98-7	
Potassium	7500	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:07	7440-09-7	
Sodium	147000	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:07	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:17	7440-36-0	
Arsenic	1.2	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:17	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:17	7440-47-3	
Selenium	0.26J	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:17	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	165	mg/L	20.0	10.5	1		11/21/23 15:01		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	645	mg/L	10.0	10.0	1		11/15/23 14:22		AB
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	30.6	mg/L	5.0	2.6	5		12/06/23 15:00	16887-00-6	
Fluoride	0.32	mg/L	0.20	0.12	1		12/08/23 18:26	16984-48-8	H1,L1
Sulfate	265	mg/L	50.0	27.5	50		12/06/23 15:11	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-P-29S Lab ID: 60441589019 Collected: 11/09/23 10:35 Received: 11/10/23 05:36 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	382	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:24	7440-39-3	
Boron	85.0J	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:24	7440-42-8	
Calcium	154000	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:24	7440-70-2	
Iron	16500	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:24	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:24	7439-92-1	
Lithium	19.4	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:24	7439-93-2	
Magnesium	27800	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:24	7439-95-4	
Manganese	707	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:24	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:24	7439-98-7	
Potassium	4820	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:24	7440-09-7	
Sodium	18900	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:24	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:31	7440-36-0	
Arsenic	24.4	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:31	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:31	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:31	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	475	mg/L	20.0	10.5	1		11/21/23 19:27		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	533	mg/L	10.0	10.0	1		11/16/23 15:26		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	31.3	mg/L	10.0	5.3	10		12/06/23 18:27	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/06/23 18:16	16984-48-8	L1
Sulfate	5.0	mg/L	1.0	0.55	1		12/06/23 18:16	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-P-29D Lab ID: 60441589020 Collected: 11/09/23 09:25 Received: 11/10/23 05:36 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	156	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:28	7440-39-3	
Boron	99.8J	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:28	7440-42-8	
Calcium	91600	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:28	7440-70-2	
Iron	3290	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:28	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:28	7439-92-1	
Lithium	59.5	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:28	7439-93-2	
Magnesium	29700	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:28	7439-95-4	
Manganese	118	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:28	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:28	7439-98-7	
Potassium	5840	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:28	7440-09-7	
Sodium	89800	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:28	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:37	7440-36-0	
Arsenic	1.0	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:37	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:37	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:37	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	303	mg/L	20.0	10.5	1		11/21/23 19:41		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	548	mg/L	13.3	13.3	1		11/16/23 15:26		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	156	mg/L	10.0	5.3	10		12/06/23 19:35	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/06/23 19:24	16984-48-8	L1
Sulfate	31.1	mg/L	10.0	5.5	10		12/06/23 19:35	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-P-30S Lab ID: 60441589021 Collected: 11/08/23 11:34 Received: 11/10/23 05:36 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	107	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:43	7440-39-3	
Boron	927	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:43	7440-42-8	
Calcium	169000	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:43	7440-70-2	
Iron	487	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:43	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:43	7439-92-1	
Lithium	47.5	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:43	7439-93-2	
Magnesium	29200	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:43	7439-95-4	
Manganese	111	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:43	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:43	7439-98-7	
Potassium	6540	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:43	7440-09-7	
Sodium	55100	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:43	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:46	7440-36-0	
Arsenic	1.3	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:46	7440-38-2	
Chromium	0.32J	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:46	7440-47-3	
Selenium	10.2	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:46	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	449	mg/L	20.0	10.5	1		11/21/23 17:06		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	745	mg/L	13.3	13.3	1		11/15/23 14:24		AB
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	39.0	mg/L	10.0	5.3	10		12/06/23 21:06	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/06/23 20:55	16984-48-8	L1
Sulfate	129	mg/L	10.0	5.5	10		12/06/23 21:06	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Sample: R-CA-FB-2 Lab ID: 60441589022 Collected: 11/08/23 14:10 Received: 11/10/23 05:36 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	<0.64	ug/L	5.0	0.64	1	11/14/23 10:06	11/27/23 12:47	7440-39-3	
Boron	<6.4	ug/L	100	6.4	1	11/14/23 10:06	11/27/23 12:47	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	11/14/23 10:06	11/27/23 12:47	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	11/14/23 10:06	11/27/23 12:47	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/14/23 10:06	11/27/23 12:47	7439-92-1	
Lithium	<3.7	ug/L	10.0	3.7	1	11/14/23 10:06	11/27/23 12:47	7439-93-2	
Magnesium	<20.1	ug/L	50.0	20.1	1	11/14/23 10:06	11/27/23 12:47	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	11/14/23 10:06	11/27/23 12:47	7439-96-5	
Molybdenum	<1.0	ug/L	20.0	1.0	1	11/14/23 10:06	11/27/23 12:47	7439-98-7	
Potassium	<69.7	ug/L	500	69.7	1	11/14/23 10:06	11/27/23 12:47	7440-09-7	
Sodium	<115	ug/L	500	115	1	11/14/23 10:06	11/27/23 12:47	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.12	ug/L	1.0	0.12	1	11/14/23 10:06	12/05/23 19:53	7440-36-0	
Arsenic	<0.13	ug/L	1.0	0.13	1	11/14/23 10:06	12/05/23 19:53	7440-38-2	
Chromium	<0.30	ug/L	1.0	0.30	1	11/14/23 10:06	12/05/23 19:53	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/14/23 10:06	12/05/23 19:53	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/21/23 17:26		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		11/15/23 14:33		AB
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	0.53J	mg/L	1.0	0.53	1		12/06/23 21:29	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/06/23 21:29	16984-48-8	L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/06/23 21:29	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch:	873120	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60441589001, 60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012		

METHOD BLANK:	3458300	Matrix:	Water
Associated Lab Samples:	60441589001, 60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	11/20/23 17:04	
Boron	ug/L	<6.4	100	6.4	11/20/23 17:04	
Calcium	ug/L	<26.9	200	26.9	11/20/23 17:04	
Iron	ug/L	<9.1	50.0	9.1	11/20/23 17:04	
Lead	ug/L	<3.8	10.0	3.8	11/20/23 17:04	
Lithium	ug/L	<3.7	10.0	3.7	11/20/23 17:04	
Magnesium	ug/L	<20.1	50.0	20.1	11/20/23 17:04	
Manganese	ug/L	<0.39	5.0	0.39	11/20/23 17:04	
Molybdenum	ug/L	<1.0	20.0	1.0	11/20/23 17:04	
Potassium	ug/L	<69.7	500	69.7	11/20/23 17:04	
Sodium	ug/L	<115	500	115	11/20/23 17:04	

LABORATORY CONTROL SAMPLE: 3458301

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Boron	ug/L	1000	970	97	85-115	
Calcium	ug/L	10000	10500	105	85-115	
Iron	ug/L	10000	10000	100	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1010	101	85-115	
Magnesium	ug/L	10000	10500	105	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Molybdenum	ug/L	1000	994	99	85-115	
Potassium	ug/L	10000	10100	101	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3458302 3458303

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60441586001 Result	Spike Conc.	Spike Conc.	MS Result						
Barium	ug/L	57.3	1000	1000	1050	1070	99	101	70-130	2	20
Boron	ug/L	14200	1000	1000	15500	15800	127	159	70-130	2	20 M1
Calcium	ug/L	18600	10000	10000	29000	29800	104	112	70-130	3	20
Iron	ug/L	114	10000	10000	9960	10300	98	102	70-130	3	20
Lead	ug/L	<3.8	1000	1000	1010	1050	101	105	70-130	3	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3458302 3458303													
Parameter	Units	60441586001		MS	MSD	MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Lithium	ug/L	12.0	1000	1000	1030	1050	102	104	70-130	2	20		
Magnesium	ug/L	1490	10000	10000	11600	12000	101	105	70-130	4	20		
Manganese	ug/L	19.9	1000	1000	1000	1050	98	103	70-130	5	20		
Molybdenum	ug/L	722	1000	1000	1700	1780	97	106	70-130	5	20		
Potassium	ug/L	3380	10000	10000	13900	14100	106	107	70-130	1	20		
Sodium	ug/L	243000	10000	10000	256000	262000	132	194	70-130	2	20	M1	

MATRIX SPIKE SAMPLE: 3458304								
Parameter	Units	60441589004		Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L		128	1000	1150	102	70-130	
Boron	ug/L		9710	1000	10800	113	70-130	
Calcium	ug/L		42400	10000	53700	113	70-130	
Iron	ug/L		2310	10000	12700	104	70-130	
Lead	ug/L		<3.8	1000	1050	105	70-130	
Lithium	ug/L		20.9	1000	1060	104	70-130	
Magnesium	ug/L		6310	10000	16900	106	70-130	
Manganese	ug/L		310	1000	1340	103	70-130	
Molybdenum	ug/L		690	1000	1740	105	70-130	
Potassium	ug/L		4190	10000	14700	105	70-130	
Sodium	ug/L		202000	10000	215000	134	70-130	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3458305 3458306													
Parameter	Units	60441589007		MS	MSD	MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Barium	ug/L	126	1000	1000	1130	1120	100	99	70-130	1	20		
Boron	ug/L	4270	1000	1000	5280	5310	101	104	70-130	1	20		
Calcium	ug/L	111000	10000	10000	122000	123000	109	117	70-130	1	20		
Iron	ug/L	2420	10000	10000	12600	12500	102	101	70-130	1	20		
Lead	ug/L	<3.8	1000	1000	1040	1040	104	104	70-130	0	20		
Lithium	ug/L	164	1000	1000	1220	1220	106	105	70-130	0	20		
Magnesium	ug/L	39000	10000	10000	50300	50600	112	116	70-130	1	20		
Manganese	ug/L	787	1000	1000	1780	1790	100	100	70-130	0	20		
Molybdenum	ug/L	245	1000	1000	1260	1260	101	102	70-130	0	20		
Potassium	ug/L	10300	10000	10000	21000	20900	107	107	70-130	0	20		
Sodium	ug/L	400000	10000	10000	408000	414000	84	142	70-130	1	20	M1	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch:	873339	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60441589015, 60441589016, 60441589017, 60441589018, 60441589019, 60441589020, 60441589021, 60441589022		

METHOD BLANK:	3459050	Matrix:	Water
Associated Lab Samples:	60441589015, 60441589016, 60441589017, 60441589018, 60441589019, 60441589020, 60441589021, 60441589022		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	11/27/23 11:52	
Boron	ug/L	<6.4	100	6.4	11/27/23 11:52	
Calcium	ug/L	<26.9	200	26.9	11/27/23 11:52	
Iron	ug/L	<9.1	50.0	9.1	11/27/23 11:52	
Lead	ug/L	<3.8	10.0	3.8	11/27/23 11:52	
Lithium	ug/L	<3.7	10.0	3.7	11/27/23 11:52	
Magnesium	ug/L	<20.1	50.0	20.1	11/27/23 11:52	
Manganese	ug/L	<0.39	5.0	0.39	11/27/23 11:52	
Molybdenum	ug/L	<1.0	20.0	1.0	11/27/23 11:52	
Potassium	ug/L	<69.7	500	69.7	11/27/23 11:52	
Sodium	ug/L	<115	500	115	11/27/23 11:52	

LABORATORY CONTROL SAMPLE: 3459051

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	976	98	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1070	107	85-115	
Lithium	ug/L	1000	1000	100	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1040	104	85-115	
Molybdenum	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	9680	97	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3459052 3459053

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60441589015 Result	Spike Conc.	Spike Conc.	MS Result						
Barium	ug/L	128	1000	1000	1150	1160	102	103	70-130	1	20
Boron	ug/L	615	1000	1000	1620	1610	100	100	70-130	0	20
Calcium	ug/L	116000	10000	10000	126000	125000	97	94	70-130	0	20
Iron	ug/L	301	10000	10000	10400	10400	101	101	70-130	0	20
Lead	ug/L	<3.8	1000	1000	1060	1060	106	106	70-130	0	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3459052 3459053												
Parameter	Units	60441589015		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Lithium	ug/L	26.7	1000	1000	1070	1080	105	106	70-130	1	20	
Magnesium	ug/L	29900	10000	10000	40300	40300	104	103	70-130	0	20	
Manganese	ug/L	65.5	1000	1000	1090	1100	102	103	70-130	1	20	
Molybdenum	ug/L	16.3J	1000	1000	1040	1040	103	103	70-130	0	20	
Potassium	ug/L	3180	10000	10000	13300	13500	101	103	70-130	1	20	
Sodium	ug/L	31200	10000	10000	42100	42100	109	109	70-130	0	20	

MATRIX SPIKE SAMPLE: 3459054								
Parameter	Units	60441586011		Spike Conc.	MS	MS	% Rec Limits	Qualifiers
		Result	Conc.		Result	% Rec		
Barium	ug/L	400	1000	1000	1390	100	70-130	
Boron	ug/L	32.2J	1000	1000	1020	99	70-130	
Calcium	ug/L	111000	10000	10000	118000	75	70-130	
Iron	ug/L	9160	10000	10000	19000	99	70-130	
Lead	ug/L	<3.8	1000	1000	1050	105	70-130	
Lithium	ug/L	11.8	1000	1000	1040	103	70-130	
Magnesium	ug/L	20100	10000	10000	29700	96	70-130	
Manganese	ug/L	252	1000	1000	1280	102	70-130	
Molybdenum	ug/L	<1.0	1000	1000	1020	102	70-130	
Potassium	ug/L	1820	10000	10000	11700	99	70-130	
Sodium	ug/L	19200	10000	10000	29500	103	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch:	872972	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441589001, 60441589002, 60441589003, 60441589004, 60441589005

METHOD BLANK: 3457521 Matrix: Water  
 Associated Lab Samples: 60441589001, 60441589002, 60441589003, 60441589004, 60441589005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	11/16/23 12:46	
Arsenic	ug/L	<0.13	1.0	0.13	11/16/23 12:46	
Chromium	ug/L	<0.30	1.0	0.30	11/16/23 12:46	
Selenium	ug/L	<0.18	1.0	0.18	11/16/23 12:46	

LABORATORY CONTROL SAMPLE: 3457522

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	35.2	88	85-115	
Arsenic	ug/L	40	42.3	106	85-115	
Chromium	ug/L	40	42.5	106	85-115	
Selenium	ug/L	40	41.8	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3457523 3457524

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60441586001 Result	Spike Conc.	Spike Conc.	Result						
Antimony	ug/L	<0.12	40	40	34.7	34.9	87	87	70-130	1	20
Arsenic	ug/L	39.1	40	40	78.9	78.9	100	100	70-130	0	20
Chromium	ug/L	0.41J	40	40	39.4	39.6	97	98	70-130	1	20
Selenium	ug/L	0.61J	40	40	38.4	38.2	95	94	70-130	1	20

MATRIX SPIKE SAMPLE: 3457525

Parameter	Units	60441589004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	33.4	83	70-130	
Arsenic	ug/L	0.54J	40	40.6	100	70-130	
Chromium	ug/L	<0.30	40	38.4	95	70-130	
Selenium	ug/L	0.20J	40	37.9	94	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch:	872979	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012

METHOD BLANK: 3457539 Matrix: Water  
 Associated Lab Samples: 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	11/20/23 15:50	
Arsenic	ug/L	<0.13	1.0	0.13	11/20/23 15:50	
Chromium	ug/L	<0.30	1.0	0.30	11/20/23 15:50	
Selenium	ug/L	<0.18	1.0	0.18	11/20/23 15:50	

LABORATORY CONTROL SAMPLE: 3457540

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	35.6	89	85-115	
Arsenic	ug/L	40	42.1	105	85-115	
Chromium	ug/L	40	42.3	106	85-115	
Selenium	ug/L	40	42.3	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3457541 3457542

Parameter	Units	60441589007		3457541		3457542		% Rec Limits	Max RPD	Qual		
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Antimony	ug/L	<0.12	40	40	40	34.1	34.6	85	86	70-130	1	20
Arsenic	ug/L	0.56J	40	40	40	40.9	41.1	101	101	70-130	1	20
Chromium	ug/L	0.33J	40	40	40	38.2	38.8	95	96	70-130	2	20
Selenium	ug/L	<0.18	40	40	40	37.6	37.4	94	93	70-130	1	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch:	873340	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441589015, 60441589016, 60441589017, 60441589018, 60441589019, 60441589020, 60441589021, 60441589022

METHOD BLANK: 3459056 Matrix: Water

Associated Lab Samples: 60441589015, 60441589016, 60441589017, 60441589018, 60441589019, 60441589020, 60441589021, 60441589022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	12/05/23 19:01	
Arsenic	ug/L	<0.13	1.0	0.13	12/05/23 19:01	
Chromium	ug/L	<0.30	1.0	0.30	12/05/23 19:01	
Selenium	ug/L	<0.18	1.0	0.18	12/05/23 19:01	

LABORATORY CONTROL SAMPLE: 3459057

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	34.9	87	85-115	
Arsenic	ug/L	40	42.2	106	85-115	
Chromium	ug/L	40	42.2	106	85-115	
Selenium	ug/L	40	42.1	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3459058 3459059

Parameter	Units	60441589016		60441589017		60441589018		60441589019		% Rec Limits	Max RPD	Qual
		MS Result	MSD Result	MS Result	MSD Result	MS Result	MSD Result	MS Result	MSD Result			
Antimony	ug/L	0.36J	40	40	34.6	34.3	86	85	70-130	1	20	
Arsenic	ug/L	24.5	40	40	65.4	65.5	102	103	70-130	0	20	
Chromium	ug/L	0.37J	40	40	38.5	38.6	95	96	70-130	0	20	
Selenium	ug/L	5.9	40	40	43.6	43.1	94	93	70-130	1	20	

MATRIX SPIKE SAMPLE: 3459060

Parameter	Units	60441589021 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	34.9	87	70-130	
Arsenic	ug/L	1.3	40	43.1	105	70-130	
Chromium	ug/L	0.32J	40	41.3	102	70-130	
Selenium	ug/L	10.2	40	50.1	100	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch:	873976	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60441589001, 60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012		

METHOD BLANK:	3461569	Matrix:	Water
Associated Lab Samples:	60441589001, 60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/20/23 16:35	

LABORATORY CONTROL SAMPLE: 3461570						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	598	120	90-110	L1

SAMPLE DUPLICATE: 3461571						
Parameter	Units	60441586001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	248	282	13	10	D6

SAMPLE DUPLICATE: 3461572						
Parameter	Units	60441589007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	228	232	2	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch: 874276

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441589015, 60441589016, 60441589017, 60441589018

METHOD BLANK: 3462777

Matrix: Water

Associated Lab Samples: 60441589015, 60441589016, 60441589017, 60441589018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/21/23 12:32	

LABORATORY CONTROL SAMPLE: 3462778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	487	97	90-110	

SAMPLE DUPLICATE: 3462779

Parameter	Units	60441832011 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	55.9	52.8	6	10	

SAMPLE DUPLICATE: 3462780

Parameter	Units	60441687004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	470	474	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch: 874277

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441589021, 60441589022

METHOD BLANK: 3462782

Matrix: Water

Associated Lab Samples: 60441589021, 60441589022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/21/23 16:18	

LABORATORY CONTROL SAMPLE: 3462783

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	478	96	90-110	

SAMPLE DUPLICATE: 3462784

Parameter	Units	60441586008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	280	281	0	10	

SAMPLE DUPLICATE: 3462785

Parameter	Units	60442032003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	267	268	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch: 874278

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441589019, 60441589020

METHOD BLANK: 3462786

Matrix: Water

Associated Lab Samples: 60441589019, 60441589020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/21/23 19:16	

LABORATORY CONTROL SAMPLE: 3462787

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	481	96	90-110	

SAMPLE DUPLICATE: 3462788

Parameter	Units	60441589019 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	475	483	2	10	

SAMPLE DUPLICATE: 3462789

Parameter	Units	60441862007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	232	240	3	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch:	873157	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60441589001, 60441589008, 60441589009		

METHOD BLANK: 3458393 Matrix: Water

Associated Lab Samples: 60441589001, 60441589008, 60441589009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/13/23 11:10	

LABORATORY CONTROL SAMPLE: 3458394

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	811	81	80-120	

SAMPLE DUPLICATE: 3458395

Parameter	Units	60441748001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3090	3030	2	10	H1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch:	873316	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589010, 60441589011, 60441589012		

METHOD BLANK:	3458977	Matrix:	Water
Associated Lab Samples:	60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589010, 60441589011, 60441589012		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/14/23 10:46	

LABORATORY CONTROL SAMPLE: 3458978						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	1e

SAMPLE DUPLICATE: 3458979						
Parameter	Units	60441586001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	841	840	0	10	

SAMPLE DUPLICATE: 3458980						
Parameter	Units	60441589007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1720	1600	7	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch:	873505	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441589015, 60441589016, 60441589017, 60441589018, 60441589021, 60441589022

METHOD BLANK: 3459648 Matrix: Water  
 Associated Lab Samples: 60441589015, 60441589016, 60441589017, 60441589018, 60441589021, 60441589022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	9.5	5.0	5.0	11/15/23 14:18	AB

LABORATORY CONTROL SAMPLE: 3459649

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3459650

Parameter	Units	60441589015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	486	570	16	10	D6

SAMPLE DUPLICATE: 3459651

Parameter	Units	60441586012 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	596	553	7	10	1e

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch: 873686	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441589019, 60441589020

METHOD BLANK: 3460340 Matrix: Water

Associated Lab Samples: 60441589019, 60441589020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/16/23 15:24	

LABORATORY CONTROL SAMPLE: 3460341

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	992	99	80-120	

SAMPLE DUPLICATE: 3460342

Parameter	Units	60441832012 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	316	338	7	10	

SAMPLE DUPLICATE: 3460343

Parameter	Units	60441862005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4840	4320	11	10 D6	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch: 873887 Analysis Method: EPA 300.0  
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
 Laboratory: Pace Analytical Services - Kansas City  
 Associated Lab Samples: 60441589001, 60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012

METHOD BLANK: 3461086 Matrix: Water  
 Associated Lab Samples: 60441589001, 60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/18/23 09:29	
Fluoride	mg/L	<0.12	0.20	0.12	11/18/23 09:29	
Sulfate	mg/L	<0.55	1.0	0.55	11/18/23 09:29	

METHOD BLANK: 3464208 Matrix: Water  
 Associated Lab Samples: 60441589001, 60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/21/23 09:05	
Fluoride	mg/L	<0.12	0.20	0.12	11/21/23 09:05	
Sulfate	mg/L	<0.55	1.0	0.55	11/21/23 09:05	

METHOD BLANK: 3465486 Matrix: Water  
 Associated Lab Samples: 60441589001, 60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/23/23 14:27	
Fluoride	mg/L	<0.12	0.20	0.12	11/23/23 14:27	
Sulfate	mg/L	<0.55	1.0	0.55	11/23/23 14:27	

LABORATORY CONTROL SAMPLE: 3461087

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	91	90-110	
Fluoride	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

LABORATORY CONTROL SAMPLE: 3464209

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

LABORATORY CONTROL SAMPLE: 3464209

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.4	96	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 3465487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	5	4.8	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3461088 3461089

Parameter	Units	60441586001		3461088		3461089		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	MSD Result	MSD Spike Conc.						
Chloride	mg/L	37.9	50	50	76.5	116	77	156	80-120	41	15	M1,R1	
Fluoride	mg/L	0.84	2.5	2.5	3.2	3.2	93	95	80-120	2	15		
Sulfate	mg/L	318	250	250	531	564	85	98	80-120	6	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3461091 3461092

Parameter	Units	60441589007		3461091		3461092		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	MSD Result	MSD Spike Conc.						
Chloride	mg/L	711	250	250	957	958	99	99	80-120	0	15		
Fluoride	mg/L	0.90	2.5	2.5	3.2	3.2	94	93	80-120	1	15		
Sulfate	mg/L	123	50	50	171	229	95	211	80-120	29	15	M1,R1	

SAMPLE DUPLICATE: 3461090

Parameter	Units	60441586001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	37.9	32.1	16	15	D6
Fluoride	mg/L	0.84	0.83	1	15	
Sulfate	mg/L	318	292	8	15	

SAMPLE DUPLICATE: 3461093

Parameter	Units	60441589007 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	711	720	1	15	
Fluoride	mg/L	0.90	0.91	1	15	
Sulfate	mg/L	123	119	4	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



**QUALITY CONTROL DATA**

Project: AMEREN RCPA-CA  
Pace Project No.: 60441589

QC Batch: 875881 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Kansas City  
Associated Lab Samples: 60441589015, 60441589016, 60441589017, 60441589018, 60441589019, 60441589020, 60441589021, 60441589022

METHOD BLANK: 3469000 Matrix: Water  
Associated Lab Samples: 60441589015, 60441589016, 60441589017, 60441589018, 60441589019, 60441589020, 60441589021, 60441589022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/06/23 10:03	
Fluoride	mg/L	<0.12	0.20	0.12	12/06/23 10:03	
Sulfate	mg/L	<0.55	1.0	0.55	12/06/23 10:03	

METHOD BLANK: 3471850 Matrix: Water  
Associated Lab Samples: 60441589015, 60441589016, 60441589017, 60441589018, 60441589019, 60441589020, 60441589021, 60441589022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/08/23 15:55	
Fluoride	mg/L	<0.12	0.20	0.12	12/08/23 15:55	
Sulfate	mg/L	<0.55	1.0	0.55	12/08/23 15:55	

LABORATORY CONTROL SAMPLE: 3469001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

LABORATORY CONTROL SAMPLE: 3471851

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	90-110	
Fluoride	mg/L	2.5	2.8	113	90-110 L1	
Sulfate	mg/L	5	4.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3469002 3469003

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result								
Chloride	mg/L	5.0	5	5	9.9	10.1	98	102	80-120	2	15	H1	
Fluoride	mg/L	<0.12	2.5	2.5	2.7	2.8	106	112	80-120	6	15	H1	
Sulfate	mg/L	64.3	50	50	114	115	99	102	80-120	1	15	H1	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

MATRIX SPIKE SAMPLE:		3469004					
Parameter	Units	60441586010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	67.8	50	109	83	80-120	
Fluoride	mg/L	<0.12	2.5	1.9	76	80-120	M0
Sulfate	mg/L	14.1	5	20.0	118	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.





### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-05S**      **Lab ID: 60441589001**      Collected: 11/06/23 11:25      Received: 11/08/23 05:19      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>-0.161 ± 0.379 (0.849)</b> <b>C:NA T:90%</b>	pCi/L	12/18/23 12:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.428 ± 0.296 (0.556)</b> <b>C:79% T:89%</b>	pCi/L	12/12/23 11:47	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-19S**      **Lab ID: 60441589002**      Collected: 11/07/23 12:53      Received: 11/08/23 05:19      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>-0.0597 ± 0.310 (0.717)</b> <b>C:NA T:87%</b>	pCi/L	12/18/23 12:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.288 ± 0.271 (0.549)</b> <b>C:86% T:86%</b>	pCi/L	12/12/23 11:47	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

---

**Sample: R-P-19I**      **Lab ID: 60441589003**      Collected: 11/07/23 13:25      Received: 11/08/23 05:19      Matrix: Water  
PWS:      Site ID:      Sample Type:

---

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.177 ± 0.348 (0.636)</b> <b>C:NA T:87%</b>	pCi/L	12/18/23 12:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.660 ± 0.363 (0.642)</b> <b>C:81% T:81%</b>	pCi/L	12/12/23 11:47	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

---

**Sample: R-P-19D**      **Lab ID: 60441589004**      Collected: 11/07/23 13:10      Received: 11/08/23 05:19      Matrix: Water  
PWS:      Site ID:      Sample Type:

---

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.436 ± 0.458 (0.727)</b> <b>C:NA T:95%</b>	pCi/L	12/18/23 12:43	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.850 ± 0.486 (0.907)</b> <b>C:84% T:77%</b>	pCi/L	12/12/23 11:47	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

---

**Sample: R-P-21S**      **Lab ID: 60441589005**      Collected: 11/07/23 11:10      Received: 11/08/23 05:19      Matrix: Water  
PWS:      Site ID:      Sample Type:

---

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>-0.112 ± 0.492 (1.02)</b> <b>C:NA T:86%</b>	pCi/L	12/18/23 12:43	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>-0.254 ± 0.367 (0.900)</b> <b>C:72% T:88%</b>	pCi/L	12/12/23 11:48	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-211**      **Lab ID: 60441589006**      Collected: 11/07/23 10:48      Received: 11/08/23 05:19      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.110 ± 0.342 (0.662)</b> <b>C:NA T:91%</b>	pCi/L	12/18/23 12:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.727 ± 0.440 (0.828)</b> <b>C:81% T:82%</b>	pCi/L	12/12/23 11:48	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-21D**      **Lab ID: 60441589007**      Collected: 11/07/23 09:20      Received: 11/08/23 05:19      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.427 ± 0.396 (0.603)</b> <b>C:NA T:88%</b>	pCi/L	12/18/23 12:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.827 ± 0.394 (0.656)</b> <b>C:79% T:83%</b>	pCi/L	12/12/23 11:47	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-22S**      **Lab ID: 60441589008**      Collected: 11/06/23 14:55      Received: 11/08/23 05:19      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.000 ± 0.311 (0.674)</b> <b>C:NA T:89%</b>	pCi/L	12/18/23 12:56	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.887 ± 0.882 (1.84)</b> <b>C:59% T:56%</b>	pCi/L	12/12/23 11:48	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.





### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-22D**      **Lab ID: 60441589009**      Collected: 11/06/23 16:02      Received: 11/08/23 05:19      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0538 ± 0.316 (0.646)</b> <b>C:NA T:88%</b>	pCi/L	12/18/23 12:56	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.447 ± 0.346 (0.684)</b> <b>C:85% T:86%</b>	pCi/L	12/12/23 11:48	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: R-CA-DUP-1</b> <b>Lab ID: 60441589010</b> Collected: 11/07/23 08:00      Received: 11/08/23 05:19      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0498 ± 0.352 (0.703)</b> <b>C:NA T:91%</b>	pCi/L	12/18/23 12:56	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.0132 ± 0.312 (0.730)</b> <b>C:81% T:75%</b>	pCi/L	12/12/23 11:48	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.253 ± 0.386 (0.664)</b> <b>C:NA T:90%</b>	pCi/L	12/18/23 12:56	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.492 ± 0.353 (0.673)</b> <b>C:75% T:81%</b>	pCi/L	12/12/23 11:48	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0479 ± 0.409 (0.797)</b> <b>C:NA T:99%</b>	pCi/L	12/18/23 12:56	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.185 ± 0.317 (0.692)</b> <b>C:81% T:80%</b>	pCi/L	12/12/23 11:48	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>93.17 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	12/18/23 12:56	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>75.27 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	12/12/23 11:48	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>109.97 %REC 16.54RPD ±</b> <b>NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	12/18/23 12:56	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>82.01 %REC 8.57RPD ± NA</b> <b>(NA)</b> <b>C:NA T:NA</b>	pCi/L	12/12/23 11:48	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-16S**      **Lab ID: 60441589015**      Collected: 11/08/23 13:20      Received: 11/10/23 05:36      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.410 ± 0.503 (0.827)</b> <b>C:NA T:90%</b>	pCi/L	12/18/23 12:56	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.429 ± 0.328 (0.640)</b> <b>C:81% T:82%</b>	pCi/L	12/12/23 11:48	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-17S**      **Lab ID: 60441589016**      Collected: 11/08/23 14:20      Received: 11/10/23 05:36      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.000 ± 0.271 (0.588)</b> <b>C:NA T:94%</b>	pCi/L	12/18/23 13:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.0802 ± 0.352 (0.802)</b> <b>C:82% T:73%</b>	pCi/L	12/12/23 11:48	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.





### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-17I**      **Lab ID: 60441589017**      Collected: 11/08/23 14:40      Received: 11/10/23 05:36      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.142 ± 0.342 (0.661)</b> <b>C:NA T:63%</b>	pCi/L	12/18/23 13:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.520 ± 0.438 (0.892)</b> <b>C:76% T:89%</b>	pCi/L	12/12/23 11:49	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-17D**      **Lab ID: 60441589018**      Collected: 11/08/23 13:58      Received: 11/10/23 05:36      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.402 ± 0.376 (0.533)</b> <b>C:NA T:83%</b>	pCi/L	12/18/23 13:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.484 ± 0.388 (0.778)</b> <b>C:85% T:80%</b>	pCi/L	12/12/23 11:49	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.338 ± 0.316 (0.448)</b> <b>C:NA T:92%</b>	pCi/L	12/18/23 13:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.622 ± 0.426 (0.827)</b> <b>C:82% T:80%</b>	pCi/L	12/12/23 11:49	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-29D**      **Lab ID: 60441589020**      Collected: 11/09/23 09:25      Received: 11/10/23 05:36      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.279 ± 0.366 (0.610)</b> <b>C:NA T:97%</b>	pCi/L	12/18/23 13:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.03 ± 0.515 (0.917)</b> <b>C:77% T:83%</b>	pCi/L	12/12/23 11:49	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

**Sample: R-P-30S**      **Lab ID: 60441589021**      Collected: 11/08/23 11:34      Received: 11/10/23 05:36      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.000 ± 0.372 (0.787)</b> <b>C:NA T:83%</b>	pCi/L	12/15/23 14:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.706 ± 0.414 (0.759)</b> <b>C:77% T:85%</b>	pCi/L	12/12/23 14:59	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.124 ± 0.297 (0.575)</b> <b>C:NA T:88%</b>	pCi/L	12/15/23 14:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.401 ± 0.370 (0.748)</b> <b>C:75% T:80%</b>	pCi/L	12/12/23 14:59	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

---

QC Batch:	632707	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60441589001, 60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012, 60441589013, 60441589014, 60441589015, 60441589016, 60441589017, 60441589018, 60441589019, 60441589020

---

METHOD BLANK:	3084363	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60441589001, 60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012, 60441589013, 60441589014, 60441589015, 60441589016, 60441589017, 60441589018, 60441589019, 60441589020

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0779 ± 0.178 (0.287) C:NA T:97%	pCi/L	12/18/23 12:43	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch: 632706

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60441589021, 60441589022

METHOD BLANK: 3084362

Matrix: Water

Associated Lab Samples: 60441589021, 60441589022

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.341 ± 0.323 (0.662) C:86% T:81%	pCi/L	12/12/23 11:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.





### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

---

QC Batch:	632709	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60441589001, 60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012, 60441589013, 60441589014, 60441589015, 60441589016, 60441589017, 60441589018, 60441589019, 60441589020

---

METHOD BLANK:	3084369	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60441589001, 60441589002, 60441589003, 60441589004, 60441589005, 60441589006, 60441589007, 60441589008, 60441589009, 60441589010, 60441589011, 60441589012, 60441589013, 60441589014, 60441589015, 60441589016, 60441589017, 60441589018, 60441589019, 60441589020

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.635 ± 0.421 (0.806) C:77% T:78%	pCi/L	12/12/23 11:46	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

QC Batch: 632705

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60441589021, 60441589022

METHOD BLANK: 3084360

Matrix: Water

Associated Lab Samples: 60441589021, 60441589022

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.377 ± 0.296 (0.347) C:NA T:93%	pCi/L	12/15/23 13:40	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALIFIERS

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

#### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### ANALYTE QUALIFIERS

1e Achieving a constant weight was not met for this sample.

AB Analyte was detected in an associated instrument blank.

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

H1 Analysis conducted outside the EPA method holding time.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441589001	R-P-05S	EPA 200.7	873120	EPA 200.7	873129
60441589002	R-P-19S	EPA 200.7	873120	EPA 200.7	873129
60441589003	R-P-19I	EPA 200.7	873120	EPA 200.7	873129
60441589004	R-P-19D	EPA 200.7	873120	EPA 200.7	873129
60441589005	R-P-21S	EPA 200.7	873120	EPA 200.7	873129
60441589006	R-P-21I	EPA 200.7	873120	EPA 200.7	873129
60441589007	R-P-21D	EPA 200.7	873120	EPA 200.7	873129
60441589008	R-P-22S	EPA 200.7	873120	EPA 200.7	873129
60441589009	R-P-22D	EPA 200.7	873120	EPA 200.7	873129
60441589010	R-CA-DUP-1	EPA 200.7	873120	EPA 200.7	873129
60441589011	R-CA-DUP-2	EPA 200.7	873120	EPA 200.7	873129
60441589012	R-CA-FB-1	EPA 200.7	873120	EPA 200.7	873129
60441589015	R-P-16S	EPA 200.7	873339	EPA 200.7	873352
60441589016	R-P-17S	EPA 200.7	873339	EPA 200.7	873352
60441589017	R-P-17I	EPA 200.7	873339	EPA 200.7	873352
60441589018	R-P-17D	EPA 200.7	873339	EPA 200.7	873352
60441589019	R-P-29S	EPA 200.7	873339	EPA 200.7	873352
60441589020	R-P-29D	EPA 200.7	873339	EPA 200.7	873352
60441589021	R-P-30S	EPA 200.7	873339	EPA 200.7	873352
60441589022	R-CA-FB-2	EPA 200.7	873339	EPA 200.7	873352
60441589001	R-P-05S	EPA 200.8	872972	EPA 200.8	872997
60441589002	R-P-19S	EPA 200.8	872972	EPA 200.8	872997
60441589003	R-P-19I	EPA 200.8	872972	EPA 200.8	872997
60441589004	R-P-19D	EPA 200.8	872972	EPA 200.8	872997
60441589005	R-P-21S	EPA 200.8	872972	EPA 200.8	872997
60441589006	R-P-21I	EPA 200.8	872979	EPA 200.8	872996
60441589007	R-P-21D	EPA 200.8	872979	EPA 200.8	872996
60441589008	R-P-22S	EPA 200.8	872979	EPA 200.8	872996
60441589009	R-P-22D	EPA 200.8	872979	EPA 200.8	872996
60441589010	R-CA-DUP-1	EPA 200.8	872979	EPA 200.8	872996
60441589011	R-CA-DUP-2	EPA 200.8	872979	EPA 200.8	872996
60441589012	R-CA-FB-1	EPA 200.8	872979	EPA 200.8	872996
60441589015	R-P-16S	EPA 200.8	873340	EPA 200.8	873353
60441589016	R-P-17S	EPA 200.8	873340	EPA 200.8	873353
60441589017	R-P-17I	EPA 200.8	873340	EPA 200.8	873353
60441589018	R-P-17D	EPA 200.8	873340	EPA 200.8	873353
60441589019	R-P-29S	EPA 200.8	873340	EPA 200.8	873353
60441589020	R-P-29D	EPA 200.8	873340	EPA 200.8	873353
60441589021	R-P-30S	EPA 200.8	873340	EPA 200.8	873353
60441589022	R-CA-FB-2	EPA 200.8	873340	EPA 200.8	873353
60441589001	R-P-05S	EPA 903.1	632707		
60441589002	R-P-19S	EPA 903.1	632707		
60441589003	R-P-19I	EPA 903.1	632707		
60441589004	R-P-19D	EPA 903.1	632707		
60441589005	R-P-21S	EPA 903.1	632707		
60441589006	R-P-21I	EPA 903.1	632707		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441589007	R-P-21D	EPA 903.1	632707		
60441589008	R-P-22S	EPA 903.1	632707		
60441589009	R-P-22D	EPA 903.1	632707		
60441589010	R-CA-DUP-1	EPA 903.1	632707		
60441589011	R-CA-DUP-2	EPA 903.1	632707		
60441589012	R-CA-FB-1	EPA 903.1	632707		
60441589013	R-CA-MS-1	EPA 903.1	632707		
60441589014	R-CA-MSD-1	EPA 903.1	632707		
60441589015	R-P-16S	EPA 903.1	632707		
60441589016	R-P-17S	EPA 903.1	632707		
60441589017	R-P-17I	EPA 903.1	632707		
60441589018	R-P-17D	EPA 903.1	632707		
60441589019	R-P-29S	EPA 903.1	632707		
60441589020	R-P-29D	EPA 903.1	632707		
60441589021	R-P-30S	EPA 903.1	632705		
60441589022	R-CA-FB-2	EPA 903.1	632705		
60441589001	R-P-05S	EPA 904.0	632709		
60441589002	R-P-19S	EPA 904.0	632709		
60441589003	R-P-19I	EPA 904.0	632709		
60441589004	R-P-19D	EPA 904.0	632709		
60441589005	R-P-21S	EPA 904.0	632709		
60441589006	R-P-21I	EPA 904.0	632709		
60441589007	R-P-21D	EPA 904.0	632709		
60441589008	R-P-22S	EPA 904.0	632709		
60441589009	R-P-22D	EPA 904.0	632709		
60441589010	R-CA-DUP-1	EPA 904.0	632709		
60441589011	R-CA-DUP-2	EPA 904.0	632709		
60441589012	R-CA-FB-1	EPA 904.0	632709		
60441589013	R-CA-MS-1	EPA 904.0	632709		
60441589014	R-CA-MSD-1	EPA 904.0	632709		
60441589015	R-P-16S	EPA 904.0	632709		
60441589016	R-P-17S	EPA 904.0	632709		
60441589017	R-P-17I	EPA 904.0	632709		
60441589018	R-P-17D	EPA 904.0	632709		
60441589019	R-P-29S	EPA 904.0	632709		
60441589020	R-P-29D	EPA 904.0	632709		
60441589021	R-P-30S	EPA 904.0	632706		
60441589022	R-CA-FB-2	EPA 904.0	632706		
60441589001	R-P-05S	SM 2320B	873976		
60441589002	R-P-19S	SM 2320B	873976		
60441589003	R-P-19I	SM 2320B	873976		
60441589004	R-P-19D	SM 2320B	873976		
60441589005	R-P-21S	SM 2320B	873976		
60441589006	R-P-21I	SM 2320B	873976		
60441589007	R-P-21D	SM 2320B	873976		
60441589008	R-P-22S	SM 2320B	873976		
60441589009	R-P-22D	SM 2320B	873976		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441589010	R-CA-DUP-1	SM 2320B	873976		
60441589011	R-CA-DUP-2	SM 2320B	873976		
60441589012	R-CA-FB-1	SM 2320B	873976		
60441589015	R-P-16S	SM 2320B	874276		
60441589016	R-P-17S	SM 2320B	874276		
60441589017	R-P-17I	SM 2320B	874276		
60441589018	R-P-17D	SM 2320B	874276		
60441589019	R-P-29S	SM 2320B	874278		
60441589020	R-P-29D	SM 2320B	874278		
60441589021	R-P-30S	SM 2320B	874277		
60441589022	R-CA-FB-2	SM 2320B	874277		
60441589001	R-P-05S	SM 2540C	873157		
60441589002	R-P-19S	SM 2540C	873316		
60441589003	R-P-19I	SM 2540C	873316		
60441589004	R-P-19D	SM 2540C	873316		
60441589005	R-P-21S	SM 2540C	873316		
60441589006	R-P-21I	SM 2540C	873316		
60441589007	R-P-21D	SM 2540C	873316		
60441589008	R-P-22S	SM 2540C	873157		
60441589009	R-P-22D	SM 2540C	873157		
60441589010	R-CA-DUP-1	SM 2540C	873316		
60441589011	R-CA-DUP-2	SM 2540C	873316		
60441589012	R-CA-FB-1	SM 2540C	873316		
60441589015	R-P-16S	SM 2540C	873505		
60441589016	R-P-17S	SM 2540C	873505		
60441589017	R-P-17I	SM 2540C	873505		
60441589018	R-P-17D	SM 2540C	873505		
60441589019	R-P-29S	SM 2540C	873686		
60441589020	R-P-29D	SM 2540C	873686		
60441589021	R-P-30S	SM 2540C	873505		
60441589022	R-CA-FB-2	SM 2540C	873505		
60441589001	R-P-05S	EPA 300.0	873887		
60441589002	R-P-19S	EPA 300.0	873887		
60441589003	R-P-19I	EPA 300.0	873887		
60441589004	R-P-19D	EPA 300.0	873887		
60441589005	R-P-21S	EPA 300.0	873887		
60441589006	R-P-21I	EPA 300.0	873887		
60441589007	R-P-21D	EPA 300.0	873887		
60441589008	R-P-22S	EPA 300.0	873887		
60441589009	R-P-22D	EPA 300.0	873887		
60441589010	R-CA-DUP-1	EPA 300.0	873887		
60441589011	R-CA-DUP-2	EPA 300.0	873887		
60441589012	R-CA-FB-1	EPA 300.0	873887		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60441589

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441589015	R-P-16S	EPA 300.0	875881		
60441589016	R-P-17S	EPA 300.0	875881		
60441589017	R-P-17I	EPA 300.0	875881		
60441589018	R-P-17D	EPA 300.0	875881		
60441589019	R-P-29S	EPA 300.0	875881		
60441589020	R-P-29D	EPA 300.0	875881		
60441589021	R-P-30S	EPA 300.0	875881		
60441589022	R-CA-FB-2	EPA 300.0	875881		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

WO#: 60441589



DC#\_Title: ENV-FRM-LENE-0009\_Sample Co

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmith Geoen9

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T290 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 2.0/1.4/2.1 Corr. Factor -0.3 Corrected 1.7/1.1/1.8

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 15.4/14.8 15.1/14.5

PN 11/10/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>67187</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_





Scan QR Code for instructions

60441589

**CHAIN-OF-CUSTODY Analytical Request Document**

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

**Pace**  
 Pace Analytical Kansas  
 9608 Loiret Blvd., Lenexa, KS 66219

**Company Name:** Rocksmith Geoen지니어링, LLC.  
**Street Address:** 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043

**Contact/Report To:** Mark Haddock  
**Phone #:** 314-974-6578  
**E-Mail:** mark.haddock@rocksmithgeo.com  
**Cc E-Mail:** Jeff Ingram, jeff.ingram@rocksmithgeo.com  
**Invoice To:** Mark Haddock  
**Invoice E-Mail:** mark.haddock@rocksmithgeo.com

**Customer Project #:** AMEREN RCFA-CA

**Site Collection Info/Facility ID (as applicable):**

**Time Zone Collected:** [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET Missouri

**Data Deliverables:**  
 [ ] Level II [ ] Level III [ ] Level IV  
 [ ] EQUIS  
 [ ] Other

**Regulatory Program (DW, RCRA, etc.) as applicable:** Missouri

**Rush (Pre-approval required):** DW PWSID # or WW Permit # as applicable:  
 [ ] 2 Day [ ] 3 day [ ] 5 day [ ] Yes [ ] No  
**Date Results Requested:** Field Filtered (if applicable): [ ] Yes [ ] No  
 Analysis:

**Matrix Codes (Insert in Matrix box below):** Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

Customer Sample ID	Matrix *	Collected (or Composite Start)		Composite End		Res. CLZ	Number & Type of Containers		Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Analysis Requested	Specify Container Size **	Identify Container Preservative Type***	Preservation non-conformance identified for sample
		Comp / Grab	Date	Time	Date		Time	Plastic										
R-P-055	WT	6	11/17/23	1125			4	X										
R-P-10S	WT		6															
R-P-16S	WT																	
R-P-17S	WT																	
R-P-17I	WT																	
R-P-17D	WT																	
R-P-19S	WT	6	11/7/23	1253			4	X										
R-P-19I	WT	6		1325			4	X										
R-P-19D	WT	6		1310			4	X										
R-P-21S	WT	6	11/7/22	1110			4	X										

**Customer Remarks / Special Conditions / Possible Hazards:**  
 \* - App III and Cat/An Metals\* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B  
 \*\* - App IV Metals - EPA 200.7 - Ba, Pb, Li, Mo and 200.8 Metals - Sb, As, Cr, Se

**Collected By:** Jeff Ingram  
**Printed Name:** Jeff Ingram  
**Signature:** [Signature]

**Received by/Company (Signature):** [Signature]

**Date/Time:** 11/7/23 1600

**Received by/Company (Signature):** [Signature]

**Date/Time:** 11/7/23 05:19

**Received by/Company (Signature):** [Signature]

**Date/Time:** 11/7/23 05:19

**Received by/Company (Signature):** [Signature]

**Date/Time:** 11/7/23 05:19

**Received by/Company (Signature):** [Signature]

**Date/Time:** 11/7/23 05:19

**Received by/Company (Signature):** [Signature]

**Date/Time:** 11/7/23 05:19

**Additional Instructions from Pace\*:**

**# Coolers:** 5  
**Thermometer ID:** T298  
**Correction Factor (°C):** -0.3  
**Obs. Temp. (°C):** 1.7  
**Corrected Temp. (°C):** 1.7  
**Tracking Number:** 15-1145

**Delivered by:** [ ] In-Person [ ] Courier  
 [ ] FedEx [ ] UPS [ ] Other

**Page:** 79 of 90

Scan QR Code for instructions

60041589

**CHAIN-OF-CUSTODY Analytical Request Document**

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

**Company Name:** Rocksmith Geoen지니어링, LLC.  
**Street Address:** 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043  
**Phone #:** 314-974-6578  
**E-Mail:** mark.haddock@rocksmithgeo.com  
**Cc E-Mail:** Jeff Ingram, jeff.ingram@rocksmithgeo.com  
**Invoice To:** Mark Haddock  
**Invoice E-Mail:** mark.haddock@rocksmithgeo.com  
**Project Name:** AMEREN RCFA-CA  
**Customer Project #:**  
**Site Collection Info/Facility ID (as applicable):**  
**Quote #:**

**Time Zone Collected:** [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET  
**Data Deliverables:**  
 Level II  Level III  Level IV  
 EQUIS  Other  
**Regulatory Program (DW, RCRA, etc.) as applicable:** Missouri  
**Rush (Pre-approval required):**  
 2 Day  3 day  5 day  Other \_\_\_\_\_  
**Date Results Requested:** \_\_\_\_\_  
**Field Filtered (if applicable):** [ ] Yes [ ] No  
**Analysis:** \_\_\_\_\_  
**DW PWSID # or WW Permit # as applicable:** \_\_\_\_\_  
**Field Filtered (if applicable):** [ ] Yes [ ] No  
**Analysis:** \_\_\_\_\_

Customer Sample ID	Matrix * Comp / Grab	Collected (or Composite Start)		Res. CLZ	Composite End		Number & Type of Containers		Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Preservation non-conformance identified for sample.
		Date	Time		Date	Time	Plastic	Glass							
R-P-211	WT	G	11/7/23	1047	---	---	---	4	X	---	---	---	---	---	---
R-P-21D	WT	G	11/7/23	920	---	---	---	4	X	---	---	---	---	---	---
R-P-22S	WT	G	11/6/23	1455	---	---	---	4	X	---	---	---	---	---	---
R-P-22D	WT	G	11/6/23	1602	---	---	---	4	X	---	---	---	---	---	---
R-P-29S	WT				---	---	---			---	---	---	---	---	---
R-P-29D	WT				---	---	---			---	---	---	---	---	---
R-P-30S	WT				---	---	---			---	---	---	---	---	---
R-P-31S	WT				---	---	---			---	---	---	---	---	---
R-CA-DUP-1	WT	G	11/7/23	---	---	---	---	4	X	---	---	---	---	---	---
R-CA-DUP-2	WT	G	11/7/23	---	---	---	---	4	X	---	---	---	---	---	---

**Customer Remarks / Special Conditions / Possible Hazards:**  
 \* - App III and Cat/An Metals\* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B  
 \*\* - App IV Metals - EPA 200.7 - Ba, Pb, Li, Mo and 200.8 Metals - Sb, As, Cr, Se

**Collected By:** Jeff Ingram  
**Printed Name:** Jeff Ingram  
**Signature:** *[Signature]*  
**Received by/Company (Signature):** *[Signature]*  
**Date/Time:** 11/8/23 05:19  
**Received by/Company (Signature):** *[Signature]*  
**Date/Time:** \_\_\_\_\_  
**Received by/Company (Signature):** \_\_\_\_\_  
**Date/Time:** \_\_\_\_\_  
**Received by/Company (Signature):** \_\_\_\_\_  
**Date/Time:** \_\_\_\_\_

**Additional Instructions from Pace\*:**  
 # Coolers: 5 Thermometer ID: T198 Correction Factor (FC): -0.3 Corrected Temp (TC): 1-7/11/18  
 Trading Number: 15-11/18

**Delivered by:** [ ] In-Person [ ] Courier  
 [ ] FedEx [ ] UPS [ ] Other  
**Page:** \_\_\_\_\_ **of** \_\_\_\_\_

Pace® Location Requested (City/State):  
Pace Analytical Kansas  
9608 Loiret Blvd., Lenexa, KS 66219

### CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

**Company Name:** Rocksmith Geoen지니어링, LLC  
**Street Address:** 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043  
**Contact/Report To:** Mark Haddock  
**Phone #:** 314-974-6578  
**E-Mail:** mark.haddock@rocksmithgeo.com  
**Cc E-Mail:** Jeff Ingram, jeff.ingram@rocksmithgeo.com  
**Invoice To:** Mark Haddock  
**Invoice E-Mail:** mark.haddock@rocksmithgeo.com  
**Purchase Order # (if applicable):**  
**Quote #:**

Scan QR Code for instructions

60441589

**Time Zone Collected:** [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET  
**Data Deliverables:**  
 [ ] Level II [ ] Level III [ ] Level IV  
 [ ] EQUIS  
 [ ] Other  
**Rush (Pre-approval required):**  
 [ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other  
**Date Results Requested:**  
 DW PWSID # or WW Permit # as applicable:  
 Field Filtered (if applicable): [ ] Yes [ ] No  
 Analysis:

**Regulatory Program (DW, RCRA, etc.) as applicable:** Missouri  
**Country / State origin of sample(s):** Missouri

Customer Sample ID	Matrix * WT	Comp / Grab	Collected (or Composite Start)		Composite End		Res. CL2	Number & Type of Containers		Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228
			Date	Time	Date	Time		Plastic	Glass						
R-CA-FB-1	WT	G	11/7/23	1005				4	X						
R-CA-FB-2	WT														
R-CA-MS-1	WT	G	11/7/23	0920				4	X						
R-CA-MSD-1	WT	G						4	X						

**Customer Remarks / Special Conditions / Possible Hazards:**  
 \* - App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B  
 \*\* - App IV Metals - EPA 200.7 - Ba, Pb, Li, Mo and 200.8 Metals - Sb, As, Cr, Se

**Collected By:** JPH Ingram  
**Printed Name:** JPH Ingram  
**Signature:** [Signature]

**Received by/Company:** [Signature]  
**Date/Time:** 11/7/23 16:00

**Additional Instructions from Pace®:**  
 # Coolers: 5 Thermometer ID: T298 Correction Factor (C): -0.3  
 Date/Time: 11/8/23 05:19 Tracking Number: 1511418  
 Date/Time: 1511418

**Delivered by:** [ ] In-Person [ ] Courier  
 [ ] FedEx [ ] UPS [ ] Other

**Page:** 8 **of**

**LAB USE ONLY - Affix Workorder/Login Label Here**

**Specify Container Size \*\***  
 \*\* Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other

**Identify Container Preservative Type\*\*\***  
 \*\*\* Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

**Analysis Requested**

**Lab Use Only**  
 Proj. Mgr: Jamie Church  
 AcctNum / Client ID:  
 Table #:  
 Profile / Template: 15854, Line 1  
 Prelog / Bottle Ord. ID: EZ 3011899  
 Sample Comment: Percent = P21D  
 Percent = P21D

Preservation non-conformance identified for sample.

1/3

Rocksmith Beoeng

Client:

Profile #

Site:

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT																		1			2	1							
2																														
3																														
4																														
5																														
6																														
7	WT																													
8																														
9																														
10																														
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	1L NaOH plastic	Wipe/Swab
DG9H	40mL HCl amber vial	1L HNO3 plastic	SP5T
DG9M	40mL MeOH clear vial	1L H2SO4 plastic	ZPLC
DG9Q	40mL TSP amber vial	1L unpreserved plastic	AF
DG9S	40mL H2SO4 amber vial	1L NaOH, Zn Acetate	C
DG9T	40mL Na Thio amber vial	500mL NaOH plastic	R
DG9U	40mL amber unpreserved	500mL HNO3 plastic	U
VG9H	40mL HCl clear vial	500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	250mL NaOH plastic	
BG1U	1liter unpres glass	250mL HNO3 plastic - field filtered	
BG3H	250mL HCL Clear glass	250mL HNO3 plastic	
BG3U	250mL Unpres Clear glass	250mL unpreserved plastic	
WGDU	16oz clear soil jar	250mL H2SO4 plastic	WT
		250mL NaOH, Zn Acetate	SL
		125mL HNO3 plastic	NAL
		125mL H2SO4 plastic	OL
		16oz unpreserved plastic	WP
		125mL HNO3 plastic	DW
		125mL H2SO4 plastic	
		16oz unpreserved plastic	

Work Order Number:

60041589

2/3

Racksmith Geology

Client: \_\_\_\_\_

Profile # \_\_\_\_\_

Site: \_\_\_\_\_

Notes \_\_\_\_\_

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT																		1			2	1							
2																			3				3							
3																			1			↓	↓							
4																			1				↓							
5																			1											
6																														
7																														
8																														
9																			1			↓	↓							
10																			1											
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	1L NaOH plastic	Wipe/Swab
DG9H	40mL HCl amber vial	1L HNO3 plastic	120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q	40mL TSP amber vial	1L unpreserved plastic	Air Filter
DG9S	40mL H2SO4 amber vial	1L NaOH, Zn Acetate	Air Cassettes
DG9T	40mL Na Thio amber vial	500mL NaOH plastic	Terracore Kit
DG9U	40mL amber unpreserved	500mL HNO3 plastic	Summa Can
VG9H	40mL HCl clear vial	500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	250mL NaOH plastic	
BG1U	1liter unpres glass	250mL HNO3 plastic - field filtered	
BG3H	250mL HCL Clear glass	250mL HNO3 plastic	
BG3U	250mL Unpres Clear glass	250mL unpreserved plastic	Non-aqueous Liquid
WGDU	16oz clear soil jar	250mL H2SO4 plastic	OIL
		250mL NaOH, Zn Acetate	Wipe
		125mL unpreserved plastic	Drinking Water
		125mL HNO3 plastic	
		125mL H2SO4 plastic	
		16oz unpreserved plastic	

Work Order Number: 66441589

3/3

*Racksmith Geoen9*

Profile #

Client:

Notes

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT																		1			2	1							
2																						2								
3																						2								
4																						2								
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	1L NaOH plastic	Wipe/Swab
DG9H	40mL HCl amber vial	1L HNO3 plastic	SP5T 120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q	40mL TSP amber vial	1L unpreserved plastic	AF Air Filter
DG9S	40mL H2SO4 amber vial	1L NaOH, Zn Acetate	C Air Cassettes
DG9T	40mL Na Thio amber vial	500mL NaOH plastic	R Terracore Kit
DG9U	40mL amber unpreserved	500mL HNO3 plastic	U Summa Can
VG9H	40mL HCl clear vial	500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	250mL NaOH plastic	<b>Matrix</b>
BG1U	1liter unpres glass	250mL HNO3 plastic - field filtered	WT Water
BG3H	250mL HCL Clear glass	250mL HNO3 plastic	SL Solid
BG3U	250mL Unpres Clear glass	250mL unpreserved plastic	NAL Non-aqueous Liquid
WGDU	16oz clear soil jar	250mL H2SO4 plastic	OL OIL
		250mL NaOH, Zn Acetate	WP Wipe
		125mL unpreserved plastic	DW Drinking Water
		125mL HNO3 plastic	
		125mL H2SO4 plastic	
		16oz unpreserved plastic	

Work Order Number:

60441589

WO#: 60441589



	DC#_Title: ENV-FRM-LENE-0009_Sample (		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Reck, Smith, George  
 Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other   
 Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No   
 Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No   
 Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other   
 Thermometer Used: T298 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 14/1-0/14.1 Corr. Factor -0.3 Corrected 1.1/0.7/13.8/16.1  
 Temperature should be above freezing to 6°C 16.4  
 Date and initials of person examining contents: 11/10/23

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>62187</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N  
 Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Comments/ Resolution: \_\_\_\_\_


Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_



Company Name: RocksSmith Geoenvironment, LLC.  
 Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043  
 Customer Project #: AMEREN RCPA-CA  
 Project Name:  
 Site Collection Info/Facility ID (as applicable):

Contact/Report To: Mark Haddock  
 Phone #: 314-974-6578  
 E-Mail: mark.haddock@rocksmithgeo.com  
 Cc E-Mail: Jeff Ingram, jeff.ingram@rocksmithgeo.com  
 Invoice To: Mark Haddock  
 Invoice E-Mail: mark.haddock@rocksmithgeo.com  
 Purchase Order # (if applicable):  
 Quote #:

LAB USE ONLY - AMX: Workorder/Login Label Here



Scan QR Code for instructions

60441589

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET [ ] MS  
 Data Deliverables:  
 [ ] Level II [ ] Level III [ ] Level IV  
 [ ] EQUUS  
 [ ] Other \_\_\_\_\_

Regulatory Program (DW, RCRA, etc.) as applicable: Missouri

Rush (Pre-approval required):  
 [ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other \_\_\_\_\_  
 DW PWSID # or WW Permit # as applicable:  
 Field Filtered (if applicable): [ ] Yes [ ] No  
 Analysis:

\* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Gauk

Customer Sample ID	Matrix *	Collected (or Composite Start)		Composite End		Res. CL2	Number & Type of Containers Plastic Glass	Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Lab Use Only	Sample Comment
		Date	Time	Date	Time										
R-P-055	WT														
R-P-105	WT														
R-P-165	WT	G	11-8-23	1320			4								
R-P-175	WT	G	11-8-23	1420											
R-P-171	WT	G	11-8-23	1440											
R-P-17D	WT	G	11-8-23	1358											
R-P-195	WT														
R-P-191	WT														
R-P-19D	WT														
R-P-21S	WT														

Additional Instructions from Pace\*:  
 Collected By: *Jeff Ingram*  
 Printed Name: Jeff Ingram  
 Signature: *Jeff Ingram*

Thermometer ID: T298  
 Correction Factor (°C): -0.3  
 Obs. Temp. (°C): 20.7  
 Corrected Temp. (°C): 21.0

Trading Number: 11/023 0536  
 Date/Time: 11/9/23 930  
 Date/Time: 11/10/23 0536

Received by/Company (Signature): *Jeff Ingram*  
 Received by/Company (Signature): *Jeff Ingram*  
 Received by/Company (Signature):  
 Received by/Company (Signature):

Delivered by: [ ] In-Person [ ] Courier  
 [ ] FedEx [ ] UPS [ ] Other

Page 6 of 22



**LAB USE ONLY - Affix Workorder/Login Label Here**

60441589

Scan QR Code for instructions

Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other

Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Specify Container Size \*\*

Identify Container Preservative Type\*\*\*

Analysis Requested

Prof. Mgr: **Jamie Church**  
AcctNum / Client ID:

Table #:

Profile / Template: **15854, Line 1**

Prelog / Bottle Ovid. ID: **EZ 3011899**

Customer Sample ID	Matrix *	Collected		Composite End		Res. CL2	Number & Type of Containers		Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Sample Comment
		Comp / Grab	Date	Time	Date		Time	Plastic							
R-P-211	WT														
R-P-21D	WT														
R-P-225	WT														
R-P-22D	WT														
R-P-295	WT	G	11/17/23	635				4							
R-P-29D	WT	G	11/19/23	925				4							
R-P-30S	WT														
R-P-31S	WT	G	11-8-23	1134				4							
<del>R-P-31S</del>	WT	G	11-8-23	1410				4							
R-CA-DUP-2	WT														

**CHAIN-OF-CUSTODY Analytical Request Document**

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company Name: **Rocksmith Geoeengineering, LLC.**  
Street Address: **2320 Creve Coeur Mill Road, Maryland Heights, MO 63043**

Contact/Report To: **Mark Haddock**  
Phone #: **314-974-6578**  
E-Mail: **mark.haddock@rocksmithgeo.com**

Customer Project #: **AMEREN RCPA-CA**  
Project Name: **AMEREN RCPA-CA**

Site Collection Info/Facility ID (as applicable):  
Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET [ ] MS [ ] Other

Regulatory Program (DW, RCPA, etc.) as applicable: **Missouri**

Rush (Pre-approval required):  
[ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other

Date Results Requested:  
Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:  
\* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OI), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

Collected By: **Jeff Ingram**  
Printed Name: **Jeff Ingram**  
Signature: *Jeff Ingram*

Received by Company (Signature): *Jeff Ingram*  
Received by Company (Signature): *Jeff Ingram*

Received by Company (Signature):  
Received by Company (Signature):

Additional Instructions from Pace\*:  
# Coolers: **4** Thermometer ID: **7298** Correction Factor (°C): **-0.3** Obs. Temp. (°C) **14.1** Corrected Temp. (°C) **13.8**

Date/Time: **11/16/23 1830** Tracking Number: **11071038163**

Date/Time: **11/16/23 0526**

Delivered by: [ ] In-Person [ ] Counter [ ] FedEx [ ] UPS [ ] Other

Page: **7** of **7**

Page: **7** of **7**

1/2

Client: Rocks Smith Geoeng

Profile #: BPIN = RAD

Site: \_\_\_\_\_

Notes: \_\_\_\_\_

Append to 60441589

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other	
1																															
2																															
3	WT																		1			2	1								
4																						1	1								
5																						1	1								
6																						1	1								
7																						1	1								
8																						1	1								
9																						1	1								
10																						1	1								
11																						1	1								
12																						1	1								

Container Codes

Glass		Plastic										Misc.
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic	I	Wipe/Swab					
DG9H	40mL HCl amber vial	WGKU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP51	120mL Coliform Na Thiosulfate					
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag					
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter					
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes					
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NaOH plastic	R	Terracore Kit					
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can					
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic							
VG9T	40mL Na Thio clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic							
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate							
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic							
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water					
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid					
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid					
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	OL	Oil					
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe					
				BP4U	125mL unpreserved plastic	DW	Drinking Water					
				BP4N	125mL HNO3 plastic							
				BP4S	125mL H2SO4 plastic							
				WPDU	16oz unpreserved plastic							

Work Order Number:

60441589

Client: Rocksmita Beery

Profile #

Site:

Notes

Append to 6041589

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1																														
2																														
3																														
4																														
5	WT																													
6	↓																													
7																														
8																														
9	↑																													
10																														
11																														
12																														

Container Codes

Glass		Plastic										Misc.																						
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NaOH plastic	I	Wipe/Swab																											
DG9H	40mL HCl amber vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate																											
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag																											
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter																											
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes																											
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NaOH plastic	R	Terracore Kit																											
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can																											
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic																													
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic																													
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate																													
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic																													
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water																											
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid																											
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid																											
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	OL	OIL																											
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe																											
				BP4U	125mL unpreserved plastic	DW	Drinking Water																											
				BP4N	125mL HNO3 plastic																													
				BP4S	125mL H2SO4 plastic																													
				WPDU	16oz unpreserved plastic																													

Work Order Number:

6041589



# Internal Transfer Chain of Custody



Rush Multiplier  X  
 Samples Pre-Logged into eCOC  
 Workorder Name: AMEREN RCPA-CA

State Of Origin: MO  
 Cert. Needed:  Yes  No  
 Owner Received Date: 11/8/2023  
 Results Requested By: 12/5/2023

Report To: Subcontract To: Requested Analysis:

Jamie Church  
 Pace Analytical Kansas  
 9608 Loiret Blvd.  
 Lenexa, KS 66219  
 Phone 314-838-7223

Pace Analytical Pittsburgh  
 1638 Roseytown Road  
 Suites 2,3, & 4  
 Greensburg, PA 15601  
 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	
						HNO3	
20	R-P-29D	PS	11/9/2023 09:25	60441589020	Water	2	
21	R-P-30S	PS	11/8/2023 11:34	60441589021	Water	2	
22	R-CA-FB-2	PS	11/8/2023 14:10	60441589022	Water	2	
23							
24							

Radium 226

Radium 228

LAB USE ONLY

Comments

Note: Sample 007 is parent sample for MS/MSD 013/014.

Transfers	Released By	Date/Time	Received By	Date/Time
1	JA Pace	11/21/23 11:00	[Signature]	11-28-23 0910
2				
3				

Cooler Temperature on Receipt \_\_\_\_\_ °C      Custody Seal Y or  N      Received on Ice Y or  N      Samples Intact  Y or  N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

**WO#: 30641430**

PM: MAR      Due Date: 12/15/23  
 CLIENT: PACE\_60\_LEKS

DC#\_Title: ENV-FRM-GBUR-0088 v06\_Sample Condition Upon Receipt-  
Pittsburgh



Effective Date: 09/20/2023

WO#: 30641430

PM: MAR

Due Date: 12/15/23

Client Name: Pace - KS

Pr

CLIENT: PACE\_60\_LEKS

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 6432 1395 1662

Examined By: PS 11/27/23  
Labeled By: PS 11/27/23  
Temped By: PR 11-22-23

Custody Seal on Cooler/Box Present:  Yes  No    Seals Intact:  Yes  No  
Thermometer Used: \_\_\_\_\_    Type of Ice: Wet Blue None

Cooler Temperature: Observed Temp \_\_\_\_\_ °C    Correction Factor: \_\_\_\_\_ °C    Final Temp: \_\_\_\_\_ °C  
Temp should be above freezing to 6°C

Comments:	Yes	No	NA	pH paper Lot#	D.P.D. Residual Chlorine Lot #
				1000831	
Chain of Custody Present	<input checked="" type="checkbox"/>			1.	
Chain of Custody Filled Out: -Were client corrections present on COC	<input checked="" type="checkbox"/>			2.	
Chain of Custody Relinquished	<input checked="" type="checkbox"/>			3.	
Sampler Name & Signature on COC:		<input checked="" type="checkbox"/>		4.	
Sample Labels match COC: -Includes date/time/ID Matrix:	<input checked="" type="checkbox"/>			5.	
Samples Arrived within Hold Time:		<input checked="" type="checkbox"/>		6.	
Short Hold Time Analysis (<72hr remaining):		<input checked="" type="checkbox"/>		7.	
Rush Turn Around Time Requested:		<input checked="" type="checkbox"/>		8.	
Sufficient Volume:	<input checked="" type="checkbox"/>			9.	
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>			10.	
Containers Intact:	<input checked="" type="checkbox"/>			11.	
Orthophosphate field filtered:			<input checked="" type="checkbox"/>	12.	
Hex Cr Aqueous samples field filtered:			<input checked="" type="checkbox"/>	13.	
Organic Samples checked for dechlorination			<input checked="" type="checkbox"/>	14.	
Filtered volume received for dissolved tests:			<input checked="" type="checkbox"/>	15.	
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix				16.	
All containers meet method preservation requirements:	<input checked="" type="checkbox"/>			Initial when completed	Date/Time of Preservation
				Lot# of added Preservative	
8260C/D: Headspace in VOA Vials (> 6mm)			<input checked="" type="checkbox"/>	17.	
624.1: Headspace in VOA Vials (0mm)			<input checked="" type="checkbox"/>	18.	
Trip Blank Present:			<input checked="" type="checkbox"/>	Trip blank custody seal present? YES or NO	
Rad Samples Screened <.05 mrem/hr.	<input checked="" type="checkbox"/>			Initial when completed	Date: Survey Meter SN:
				BR	11-22-23 2504880
Comments:					

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office. PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.



# Memorandum

January 16, 2024

---

**To:** Project File  
Rocksmith Geoengineering, LLC

**Project Number:** 23008

**CC:** Mark Haddock, Jeffrey Ingram

**From:** Grant Morey

**Email:** Grant.Morey@Rocksmithgeo.com

**RE:** **Data Validation Summary, Rush Island Energy Center – RCPA-CA – Data Package 60441589**

---

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was analyzed outside of hold time, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates based high, and J- for estimates based low).
- When a laboratory control sample (LCS) accuracy criterion was not met, the associated sample result was qualified as an estimate (J+ for estimates biased high, J- for estimates biased low, and UJ for non-detects).

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering  
 Project Name: Ameren RCPA-CA  
 Reviewer: G. Morey

Project Manager: J. Ingram  
 Project Number: 23008  
 Validation Date: 1/16/2024

Laboratory: Pace Analytical SDG #: 60441589

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);

Matrix:  Air  Soil/Sed.  Water  Waste  EPA 903.1/904.0 (Radium 226+228)

Sample Names R-P-05S, R-P-19S, R-P-19I, R-P-19D, R-P-21S, R-P-21I, R-P-21D, R-P-22S, R-P-22D, R-CA-DUP-1, R-CA-DUP-2, R-CA-FB-1, R-CA-MS-1, R-CA-MSD-1, R-P-16S, R-P-17S, R-P-17I, R-P-17D, R-P-29S, R-P-29D, R-P-30S, R-CA-FB-2

**NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).**

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>11/6/2023 - 11/9/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>JSI, GTM</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>_____</u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Spec Cond, Turb, Temp, DO, ORP</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>No lab narrative.</u>

Note Deficiencies: Upon further examination of this data in comparison with historical data for each well, it was determined that wells R-P-22D and R-P-22S are switched in the data packet. For purposes of this data validation, R-P-22D will be recorded as R-P-22S and R-P-22S will be recorded as R-P-22D.

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
b) Were hold times met for sample analysis?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>



## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R-CA-DUP-1 @ R-P-211; R-CA-DUP-2 @ R-P-19D
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
d) Were lab dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes

<b>Blind Standards</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

**Comments/Notes:**

General:

Chloride, fluoride, and sulfate analyzed outside of hold time in some samples. Results qualified as estimates.

Chloride and Sulfate were diluted in several samples, no qualification necessary.

## QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

### Comments/Notes:

#### Method Blanks:

3459648: TDS (9.5). Associated with samples -015 through -018, -021 and -022. Results > RL and 10x blank or non-detect, no qualification necessary.

#### Field Blanks:

R-CA-FB-1 @ R-P-21S: Boron (11.5J), Sodium (142J), Chromium (0.41J). Boron and sodium results > RL and 10x blank; chromium result non-detect; no qualification necessary.

R-CA-FB-2 @ R-P-17S: Chloride (0.53J). Result > RL and 10x blank, no qualification necessary.

Calcium, TDS, Chloride results > RL and 10x blank; no qualification necessary. Ferrous Iron result < RL, qualified as non-detect.

#### Duplicates:

R-CA-DUP-1 @ R-P-21I: chromium detected in parent sample and not in duplicate; lead detected in duplicate and not in parent sample, results qualified as estimates. DUP RPD exceeds limit for selenium (26%), results qualified as estimates.

R-CA-DUP-2 @ R-P-19D: chromium detected in parent sample and not in field duplicate, results qualified as estimates.

DUP RPD exceeds limit for alkalinity (13%), results qualified as estimates.

3461571: Lab duplicate RPD exceeds control limit for alkalinity, associated with unrelated sample, no qualification necessary.

3459650: Lab duplicate RPD exceeds control limit for TDS, associated with sample -015, result qualified as estimate.

3460343: Lab duplicate exceeds control limit for TDS, associated with unrelated sample, no qualification necessary.

3461090: Lab duplicate exceeds control limit for chloride, associated with unrelated sample, no qualification necessary.

Lab duplicate max RPD: 10%: Alkalinity, TDS; 15%: Chloride, Fluoride, Sulfate; 20%: Ferrous Iron, Sulfide

#### MS/MSD:

3458302/3458303: MSD recovery high for boron, MS recovery and RPD within control limits, no qualification necessary.

3458302/3458303: MS/MSD recoveries high for sodium, associated with unrelated sample, no qualification necessary.

3458304: MS recovery high for sodium, associated with sample -004. Result qualified as estimate.

3458305/3458306: MSD recovery high for sodium, MS recovery and RPD within control limits, no qualification necessary.

3461088/3461089: MS/MSD recoveries and RPD outside of control limits for chloride. Associated with unrelated sample, no qualification necessary.

3461091/3461092: MSD recovery high and RPD outside of control limits for sulfate, associated with sample -004, result qualified as estimate.

3469004: MS recovery low for fluoride, associated with unrelated sample, no qualification necessary.

#### Laboratory Control Samples:

3461570: LCS recovery high for alkalinity, associated with samples -001 through -012. Detected results qualified as estimates.

3471851: LCS recovery high for fluoride, associated with samples -015 through -022. Detected results qualified as estimates.

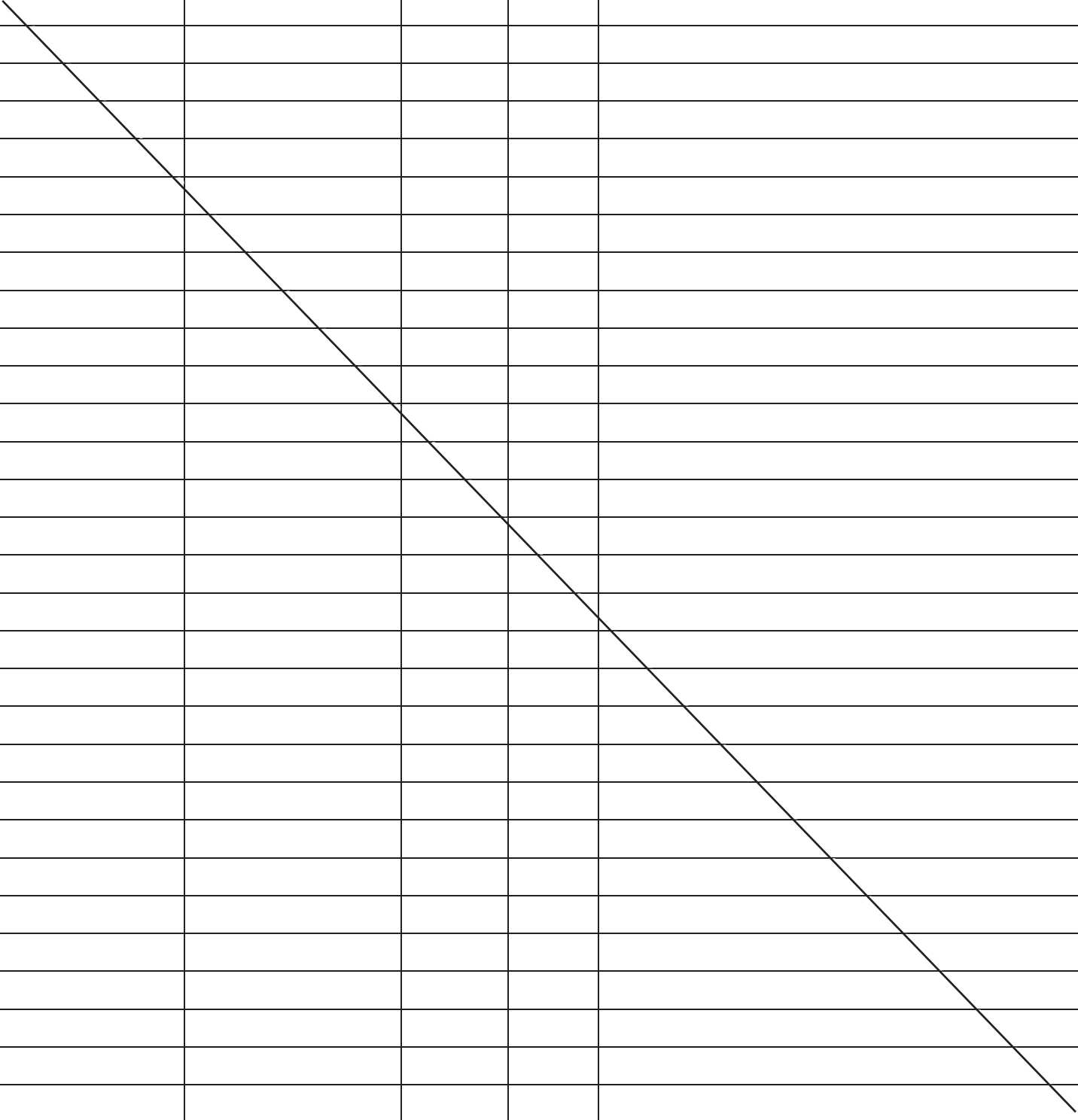
**QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST**

**Data Qualification:**

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-P-16S	Chloride	5.0	J	Analyzed outside of hold time
"	Fluoride	0.12	UJ	"
"	Sulfate	64.3	J	"
R-P-17S	Chloride	61.0	J	"
R-P-17I	"	73.5	J	"
"	Fluoride	1.3	J	"
R-P-17D	Fluoride	0.32	J	"
R-CA-DUP-1	Chromium	0.30	UJ	Detected in parent sample, ND in field duplicate
R-P-21I	"	0.40	J	"
R-CA-DUP-1	Lead	4.4	J	Detected in field duplicate, ND in parent sample
R-P-21I	"	3.8	UJ	"
R-CA-DUP-1	Selenium	0.34	J	Field duplicate RPD exceeds control limit
R-P-21I	"	0.44	J	"
R-P-19D	Alkalinity	224	J	Field duplicate RPD exceeds control limits
R-CA-DUP-2	"	254	J	"
R-P-19D	Chromium	0.30	UJ	Detected in field duplicate and not in parent sample
R-CA-DUP-2	"	0.31	J	"
R-P-16S	TDS	486	J	Lab duplicate RPD exceeds control limits
R-P-19D	Sodium	202000	J+	MS recovery high
R-P-21D	Sulfate	123	J	MS/MSD/RPD outside of control limits
R-P-05S	Alkalinity	308	J+	LCS recovery exceeds control limits
R-P-19S	"	308	J+	"
R-P-19I	"	354	J+	"
R-P-19D	"	224	J+	"
R-P-21S	"	512	J+	"
R-P-21I	"	200	J+	"
R-P-21D	"	228	J+	"
R-P-22D	"	306	J+	"
R-P-22S	"	526	J+	"
R-CA-DUP-1	"	200	J+	"
R-CA-DUP-2	"	254	J+	"
R-P-17I	Fluoride	1.3	J+	"
R-P-17D	"	0.32	J+	"

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
				

Signature: Grant Morey

Date: 01/16/2024

# Appendix B

## October-November 2022 Assessment Monitoring Statistical Evaluation



## TECHNICAL MEMORANDUM

**DATE** February 22, 2023

**Project No.** GL153140604

**TO** Bill Kutosky  
Ameren Missouri

**CC** Susan Knowles, Craig Giesman, Charlie Henderson

**FROM** Jeffrey Ingram (WSP), Mark Haddock  
(Rocksmith Geoengineering, LLC), Mark  
Sandfort (WSP)

**EMAIL** Jeffrey.Ingram@wsp.com

### **ASSESSMENT MONITORING STATISTICAL EVALUATION RCPA SURFACE IMPOUNDMENT RUSH ISLAND ENERGY CENTER, JEFFERSON COUNTY, MISSOURI**

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation from the October-November 2022 sampling event for the RCPA Surface Impoundment at the Rush Island Energy Center located in Jefferson County, Missouri. Included in this memorandum is a brief summary of constituents that are present at a Statistically Significant Level (SSL), a list of site-specific Groundwater Protection Standards (**Table 1**), and the Sanitas Technologies™ (Sanitas) statistical software output for each of the tested Appendix IV parameters (**Appendix A** and **Appendix B**).

The Appendix IV constituents were evaluated for SSLs using the methods and procedures outlined in the Groundwater Monitoring Plan's (GMP) Statistical Analysis Plan (SAP). The following statistical outlier(s) were removed prior to the calculation of confidence limits:

- Chromium
  - R-MW-6 at 7.5 micrograms per liter ( $\mu\text{g/L}$ ) on 4/15/2022. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling and is an outlier.
- Radium 226 & 228
  - R-MW-2 at Non-Detect (ND) on 10/26/2021. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling and is an outlier.

An analysis of the outliers removed to-date was completed and two statistical outliers that were previously removed were added back into the dataset prior to the calculation of confidence limits.

- Fluoride
  - R-MW-7 at 0.095 milligrams per liter ( $\text{mg/L}$ ) on 1/9/2020. The value was removed in November 2020 because the result was statistically lower than other values at the same well. However, the result has been confirmed by subsequent sampling events and the result is no longer an outlier.


- Lead
  - R-MW-1 at ND on 11/11/2019. The result was removed in April 2022 because the result was statistically lower than other values at the same well. However, the result has been confirmed by subsequent sampling events and the result is no longer an outlier.

No new SSLs were identified in the October-November 2022 sampling event. The SSLs reported for the October-November 2022 monitoring event are shown in **Appendix A** and summarized as follows:

- Arsenic at MW-2, MW-3, and MW-7/MW-7(R)
- Molybdenum at MW-2 and MW-3

WSP appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please call our office at (314)-984-8800.

Sincerely,



Jeffrey Ingram  
*Senior Consultant, Geologist*



Mark Sandfort  
*Senior Engineering Principal*

Attachments: Table 1 – RCPA Groundwater Protection Standards  
Appendix A – Sanitas Confidence Interval Statistical Output  
Appendix B – Sanitas Trending Confidence Bands Statistical Output

**Table 1 - RCPA Groundwater Protection Standards  
RCPA Surface Impoundment  
Rush Island Energy Center**

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring <sup>6</sup>
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	30	30
Barium	µg/L	2000	2000	550.5
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	2.372
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.2767
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	64.7	64.7
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.297
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:

1. µg/L - micrograms per liter
2. mg/L - milligrams per liter
3. pCi/L - picocuries per liter

4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) Drinking Water Standards and Health Advisories. <http://water.epa.gov/drink/contaminants/index.cfm>.

5. Health Based Groundwater Protection Standards (GWPS) were adopted for Appendix IV parameters without an MCL (i.e. cobalt, lithium, molybdenum, and lead). Information available at <https://www.epa.gov/coalash/coal-ash-rule>.

6. Values were calculated using statistical methods outlined for Detection Monitoring and are used for returning to Detection Monitoring based on available data to date.

7. DQR - Double Quantification Rule. If all baseline data are less than the Practical Quantitation Limit (PQL), then the DQR will be used. More information on the DQR is provided in the Statistical Analysis Plan.

8. Site GWPS is either the MCL/Health Based GWPS or based on background levels (calculated as described in the Statistical Analysis Plan for Assessment Monitoring), whichever is higher.

9. GWPS and background values calculated using results up through April 2021 from monitoring wells MW-B1 and MW-B2.

Prepared by: EMS

Checked by: SSS

Reviewed by: MNH

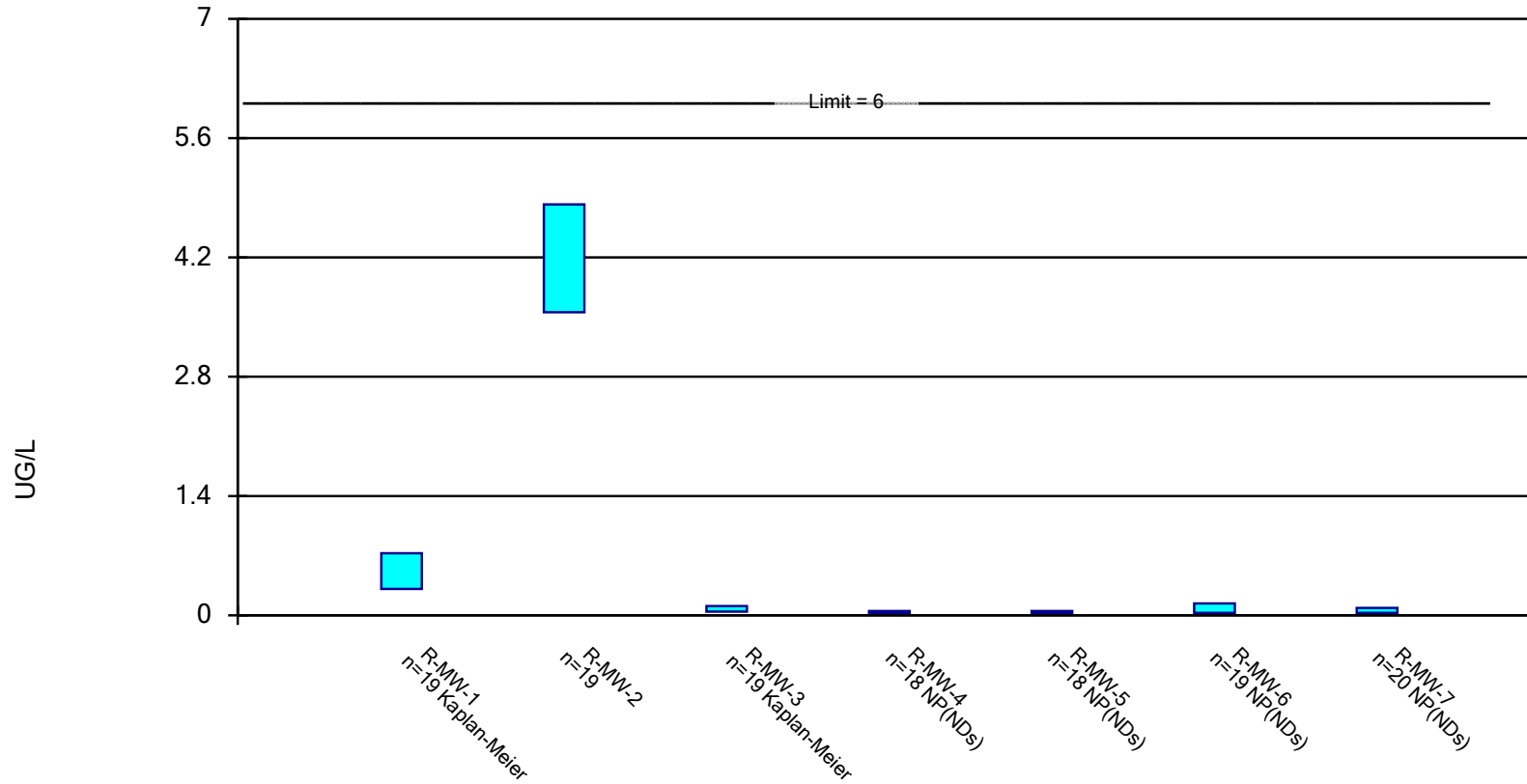


**APPENDIX A**

**Sanitas Confidence Interval  
Statistical Output**

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

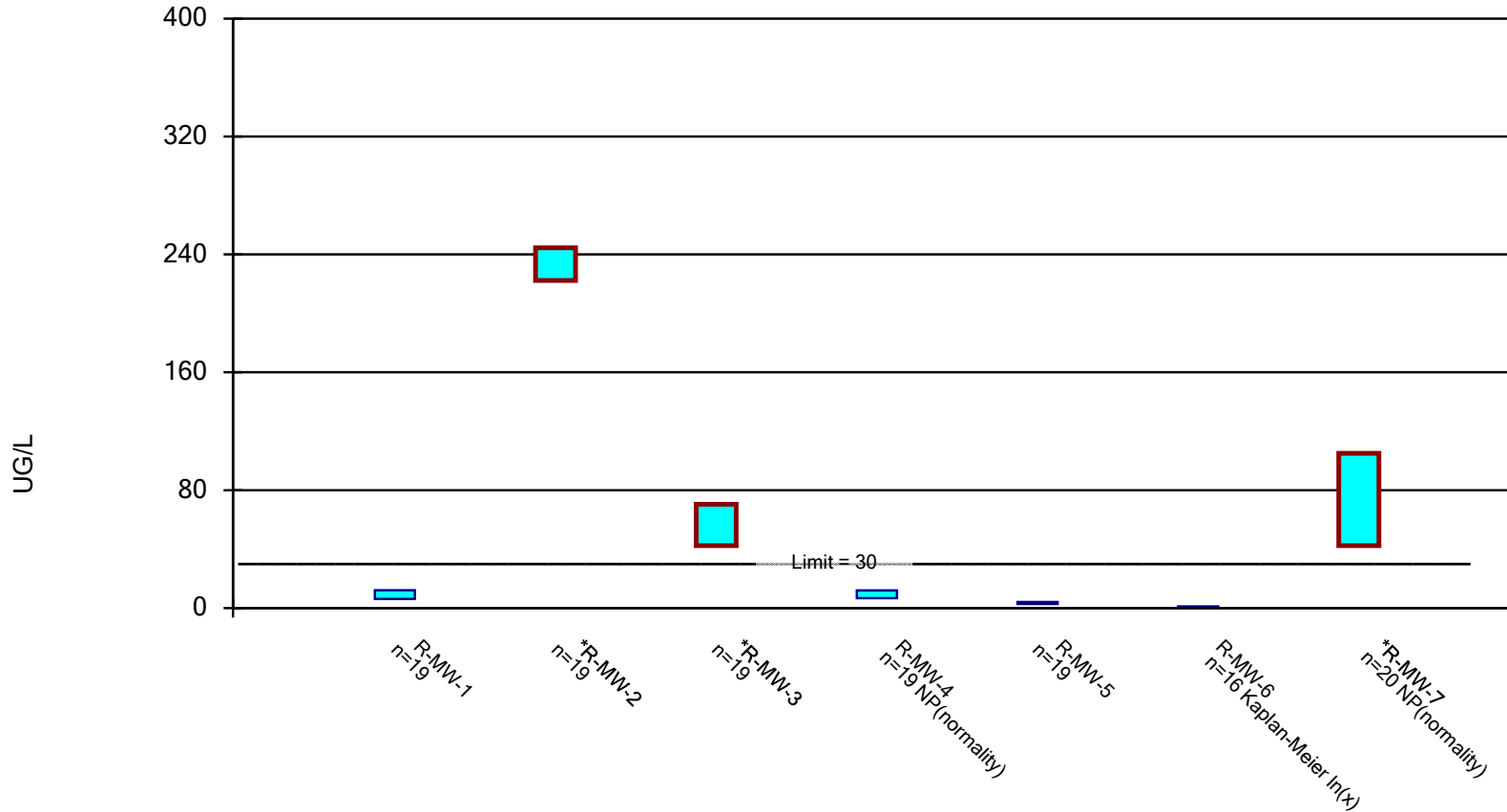


Constituent: ANTIMONY, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

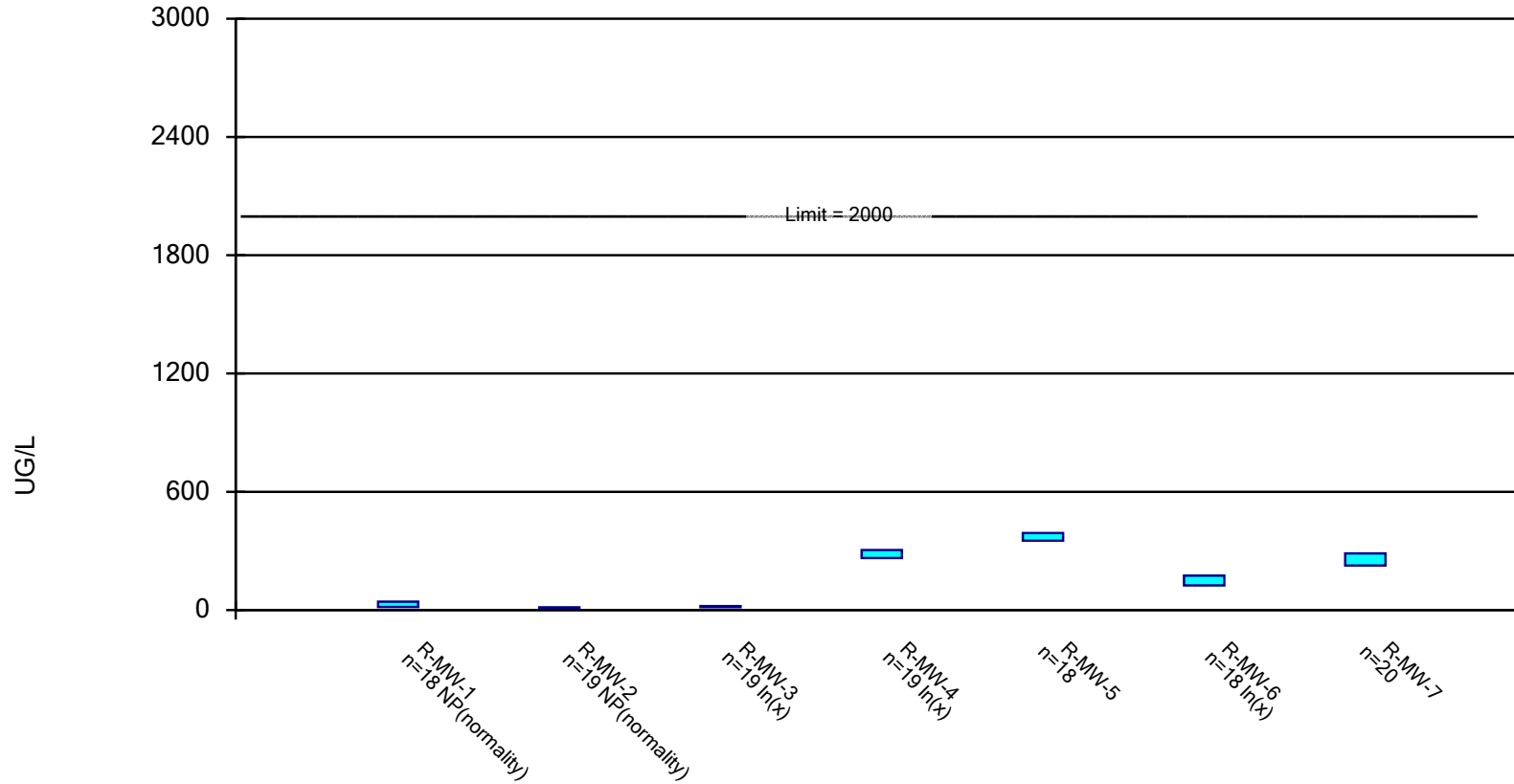


Constituent: ARSENIC, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

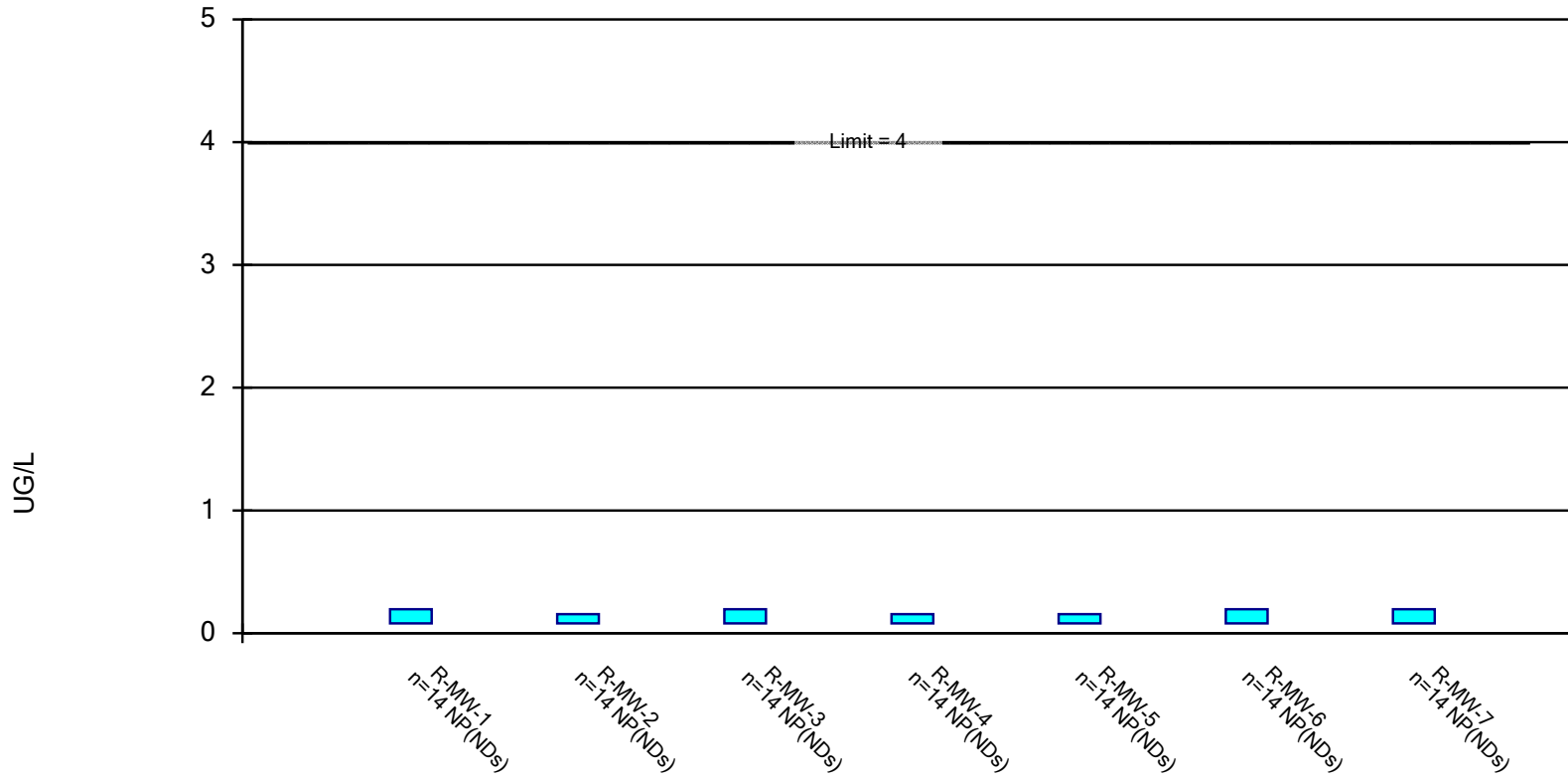


Constituent: BARIUM, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

### Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

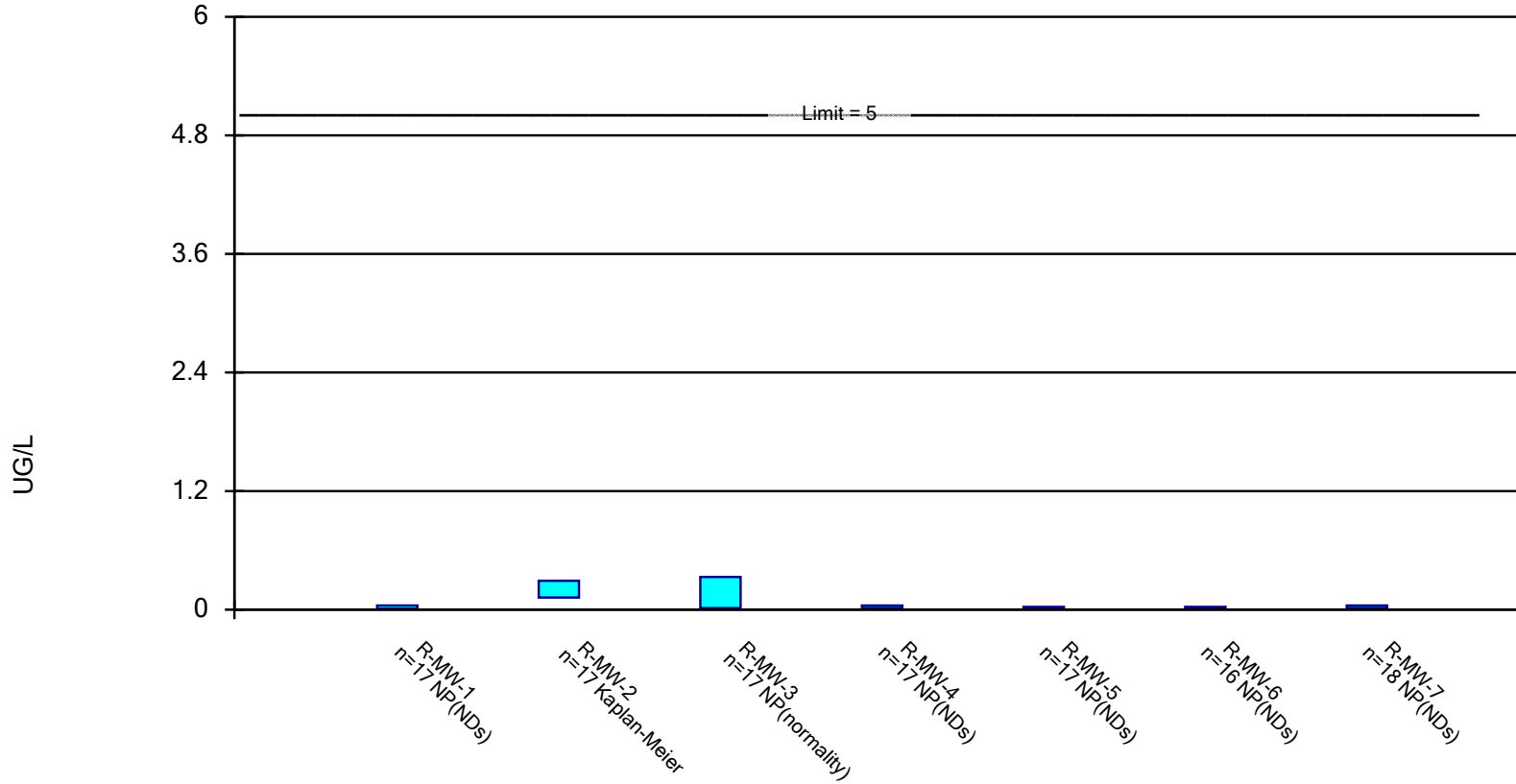


Constituent: BERYLLIUM, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

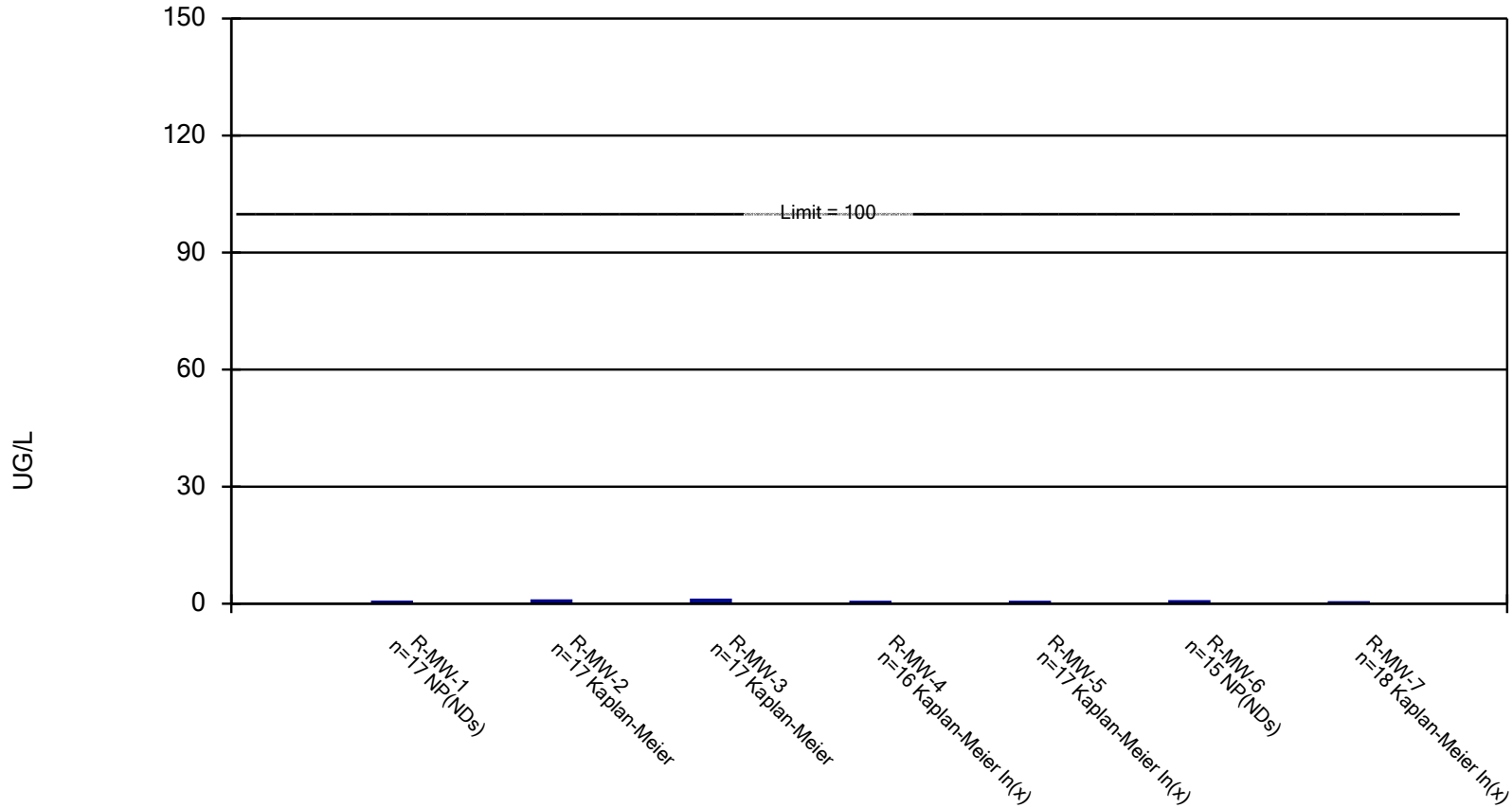


Constituent: CADMIUM, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

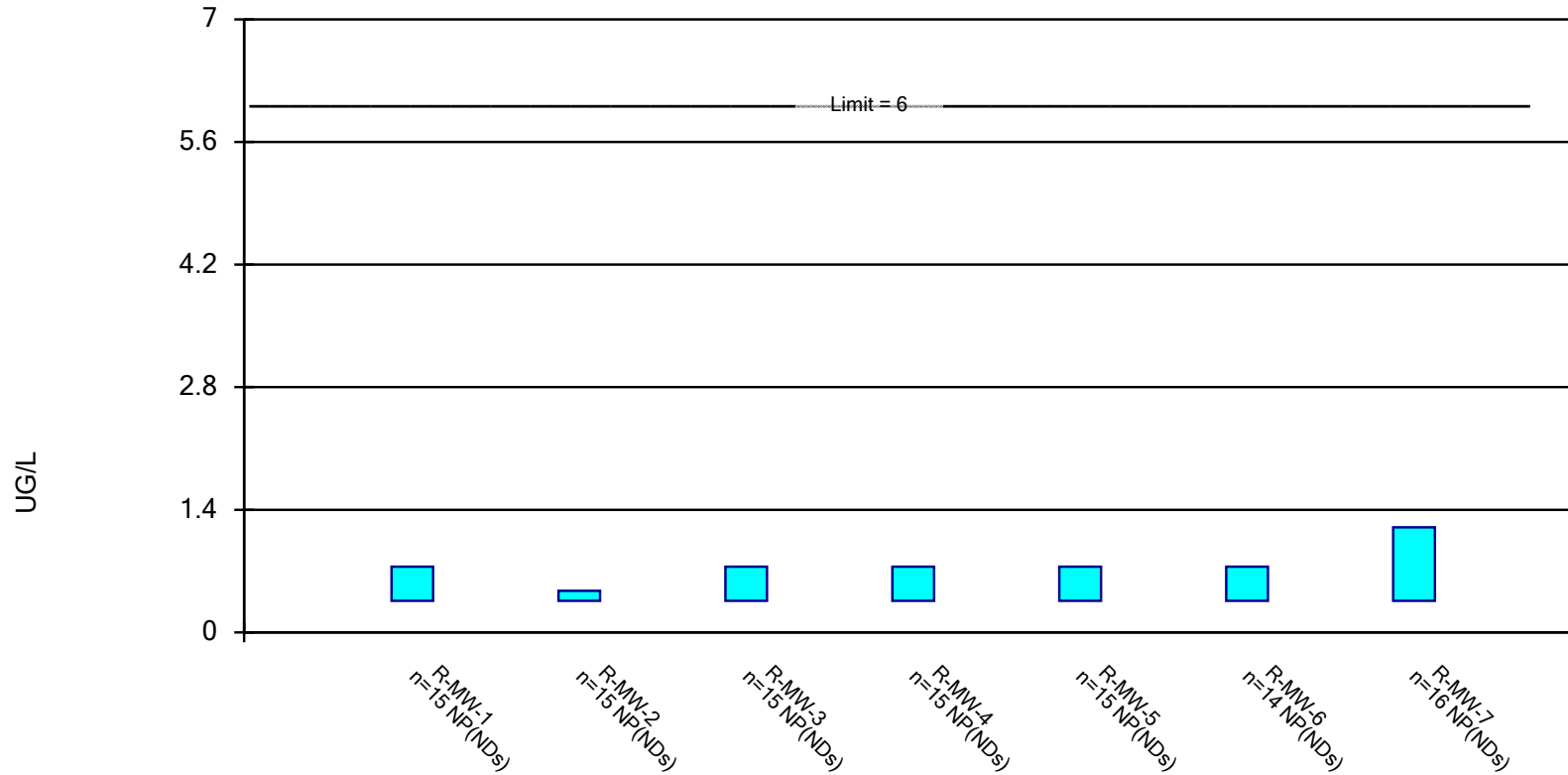


Constituent: CHROMIUM, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



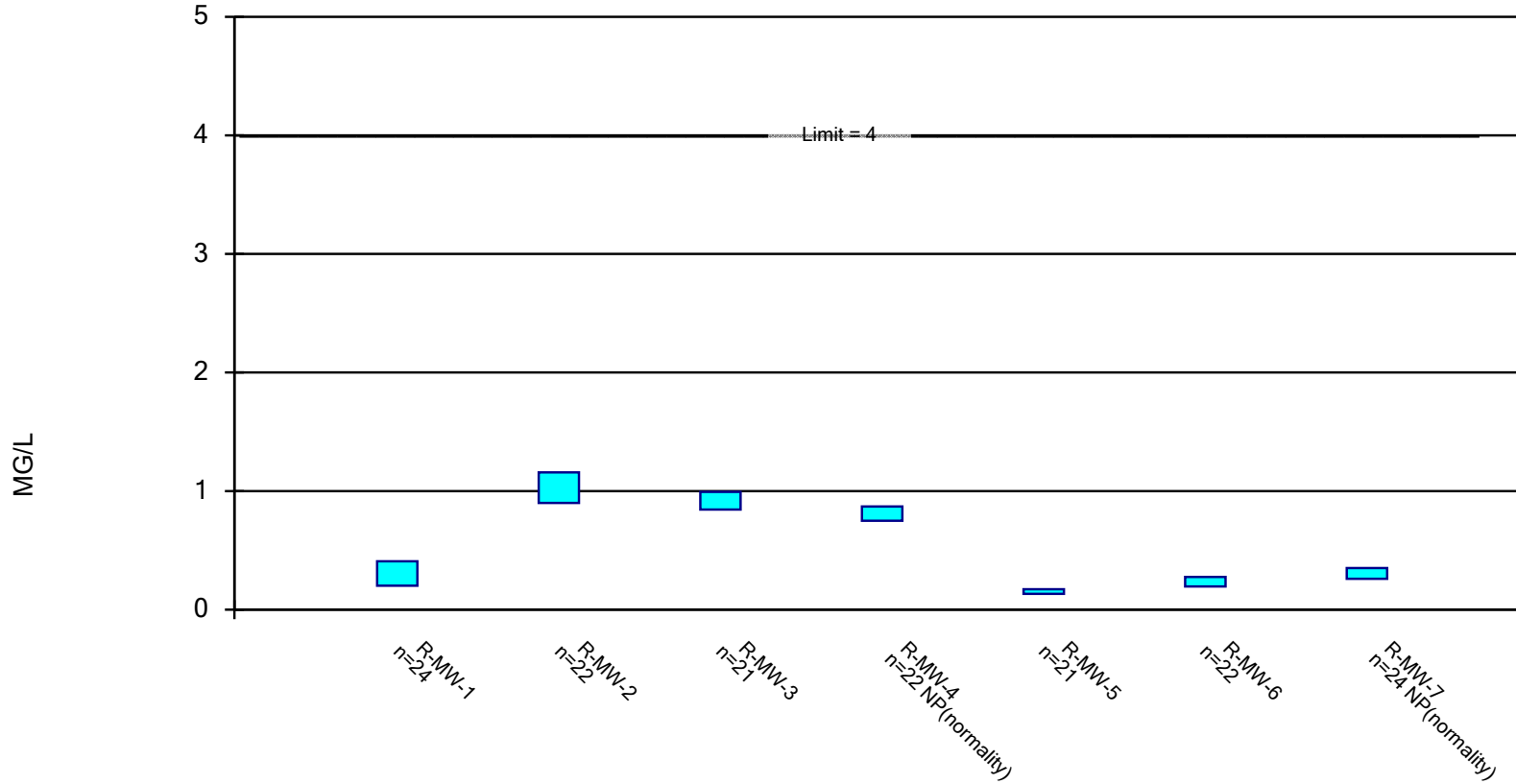
Constituent: COBALT, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data



## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

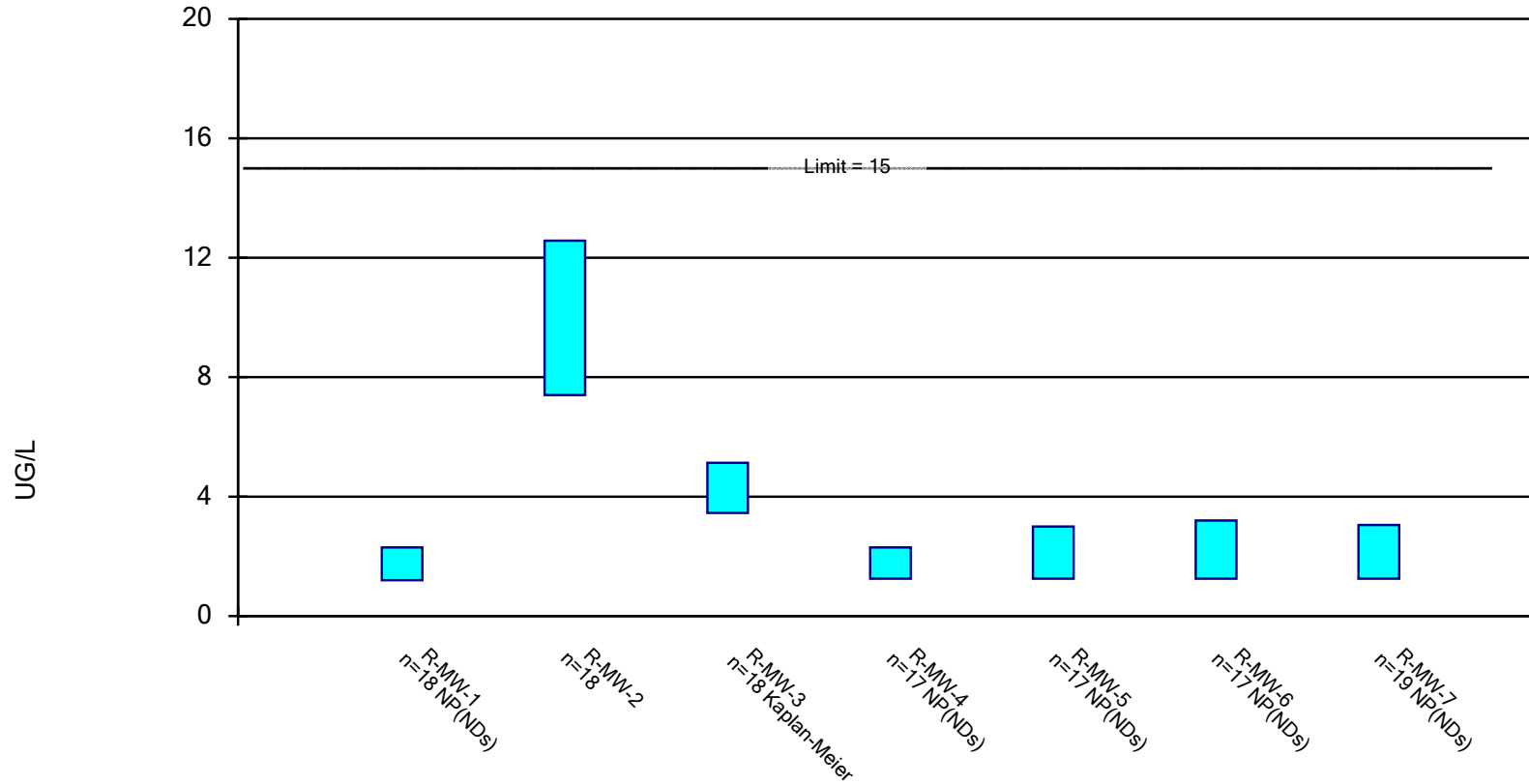


Constituent: FLUORIDE, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

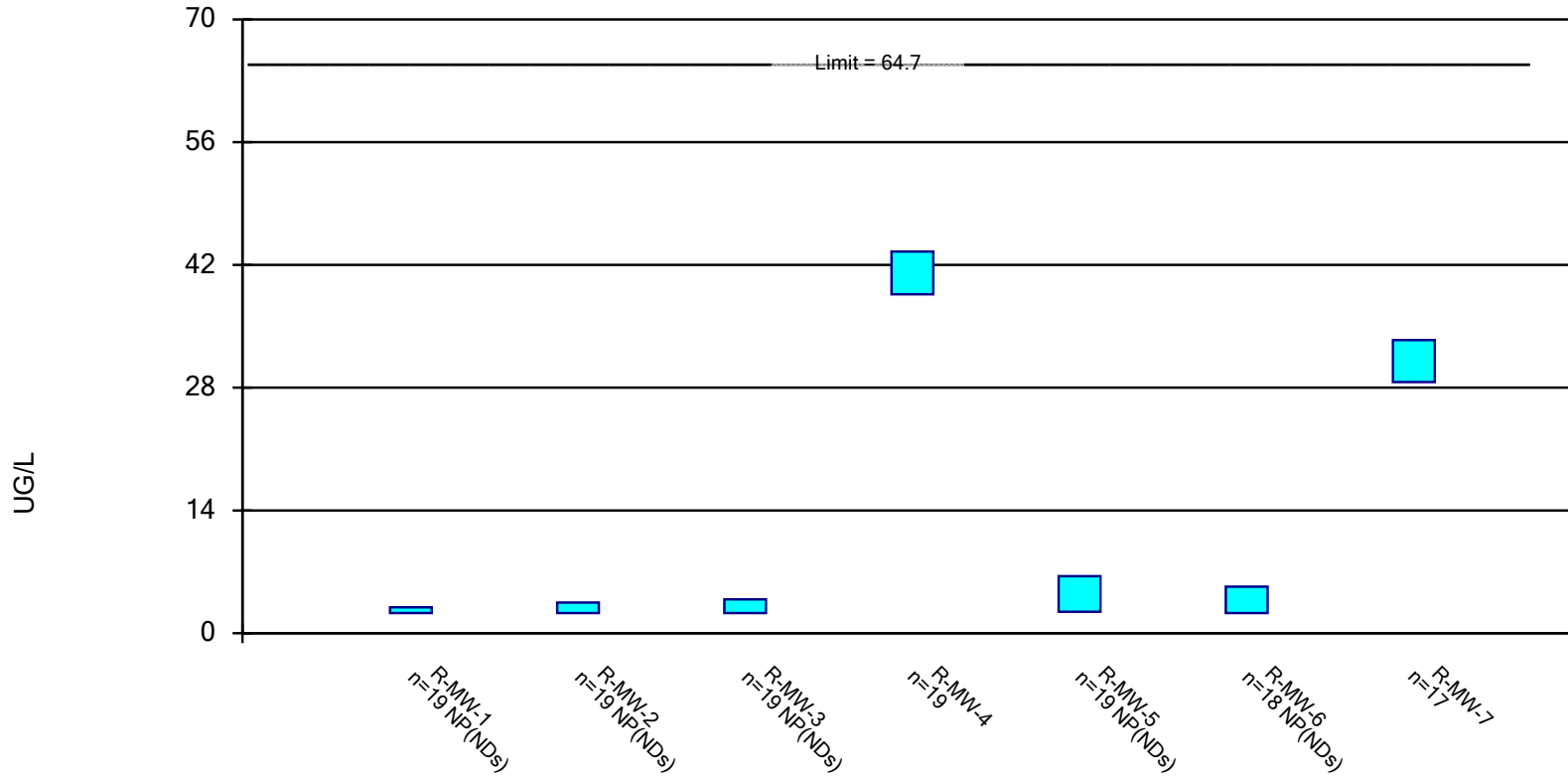


Constituent: LEAD, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

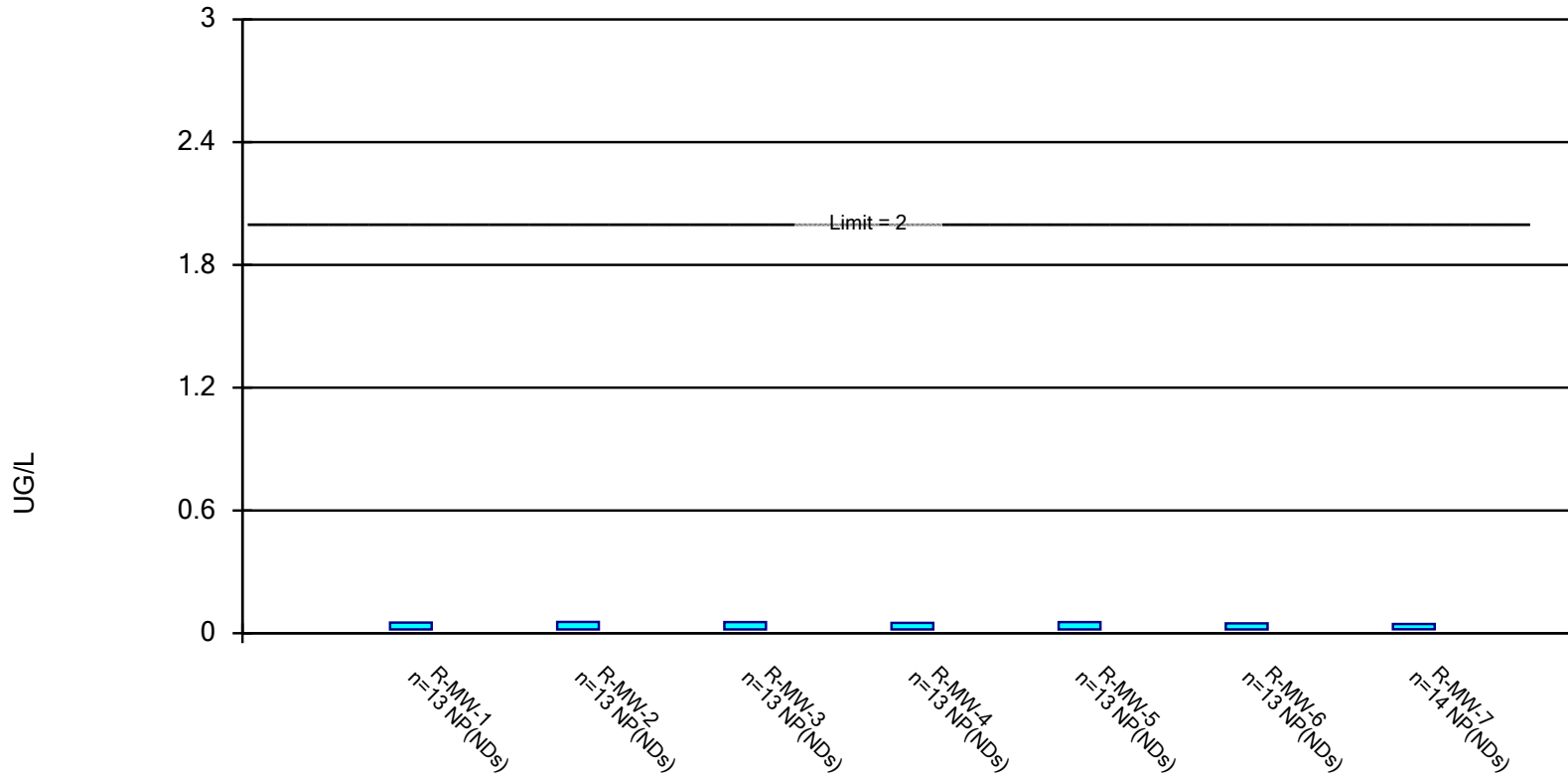


Constituent: LITHIUM, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

### Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

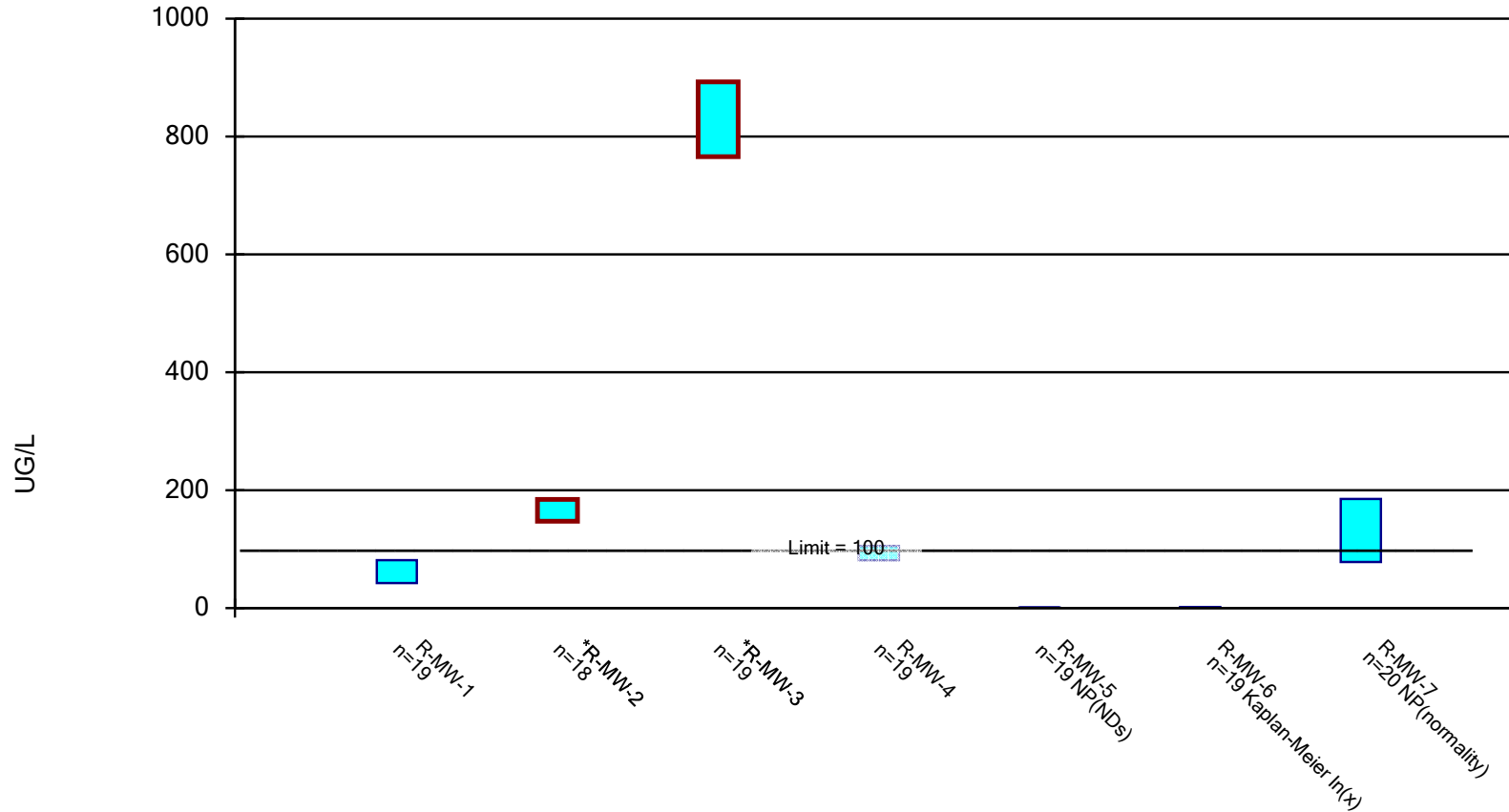


Constituent: MERCURY, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

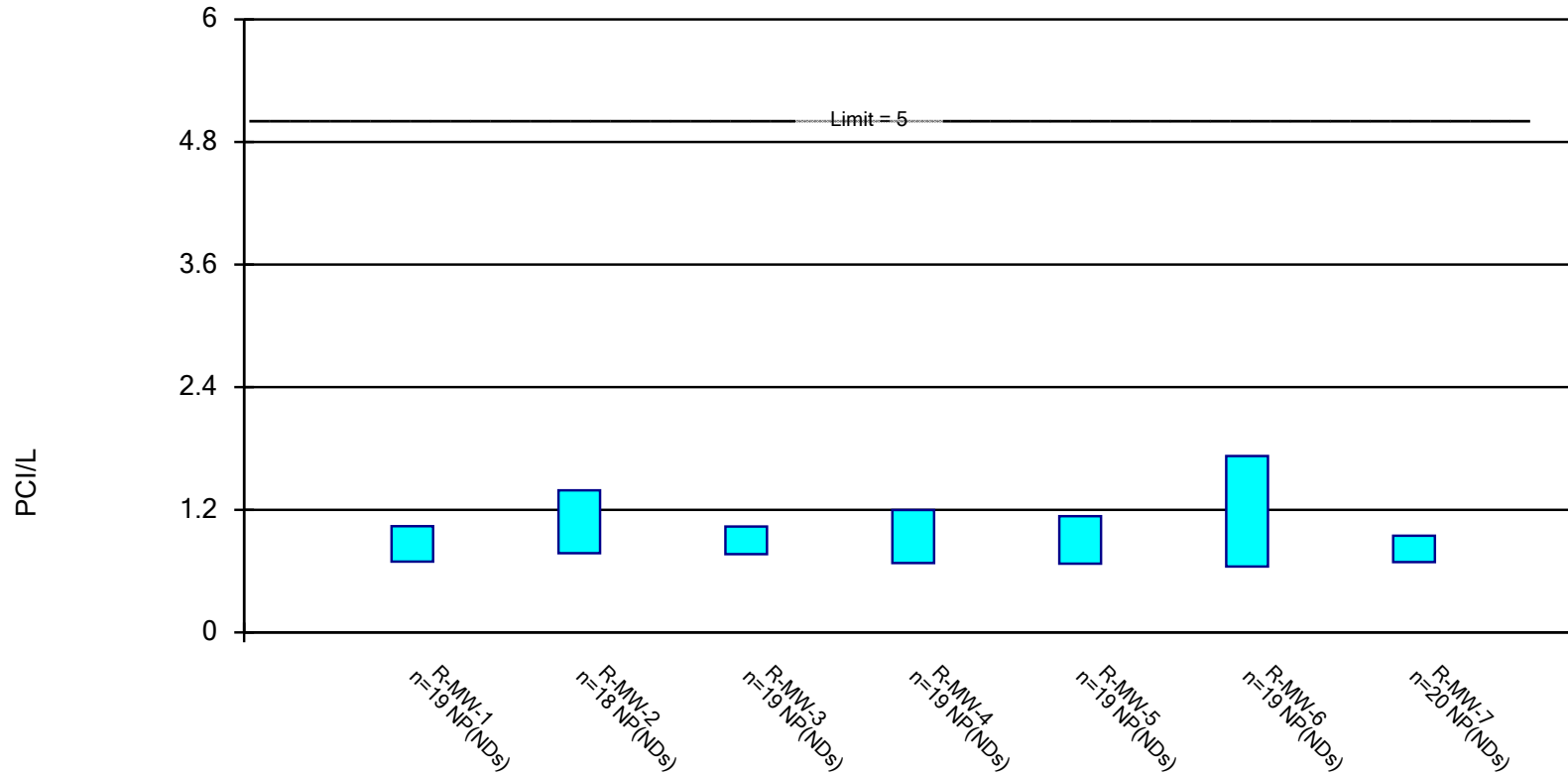


Constituent: MOLYBDENUM, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

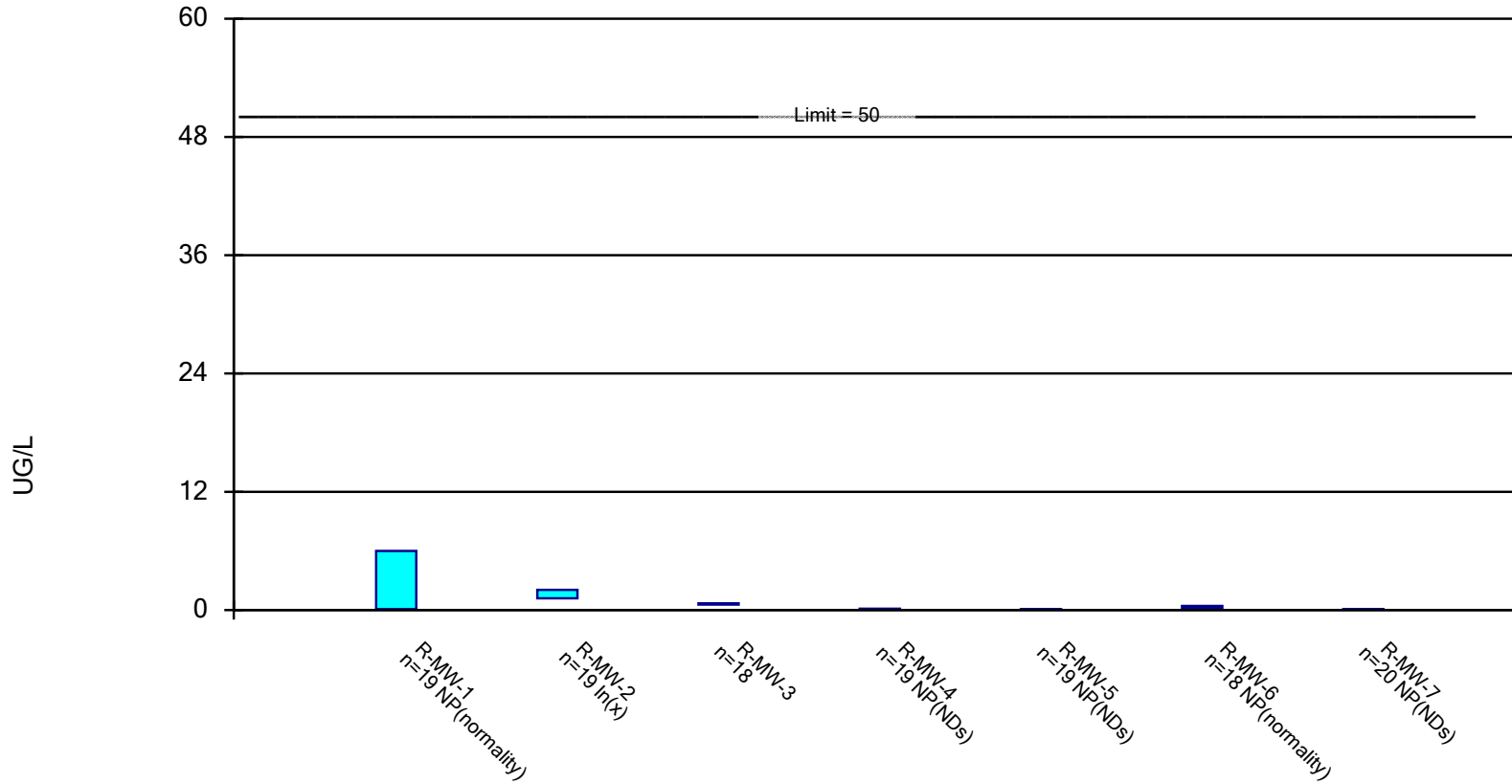


Constituent: RADIUM [226 + 228] Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

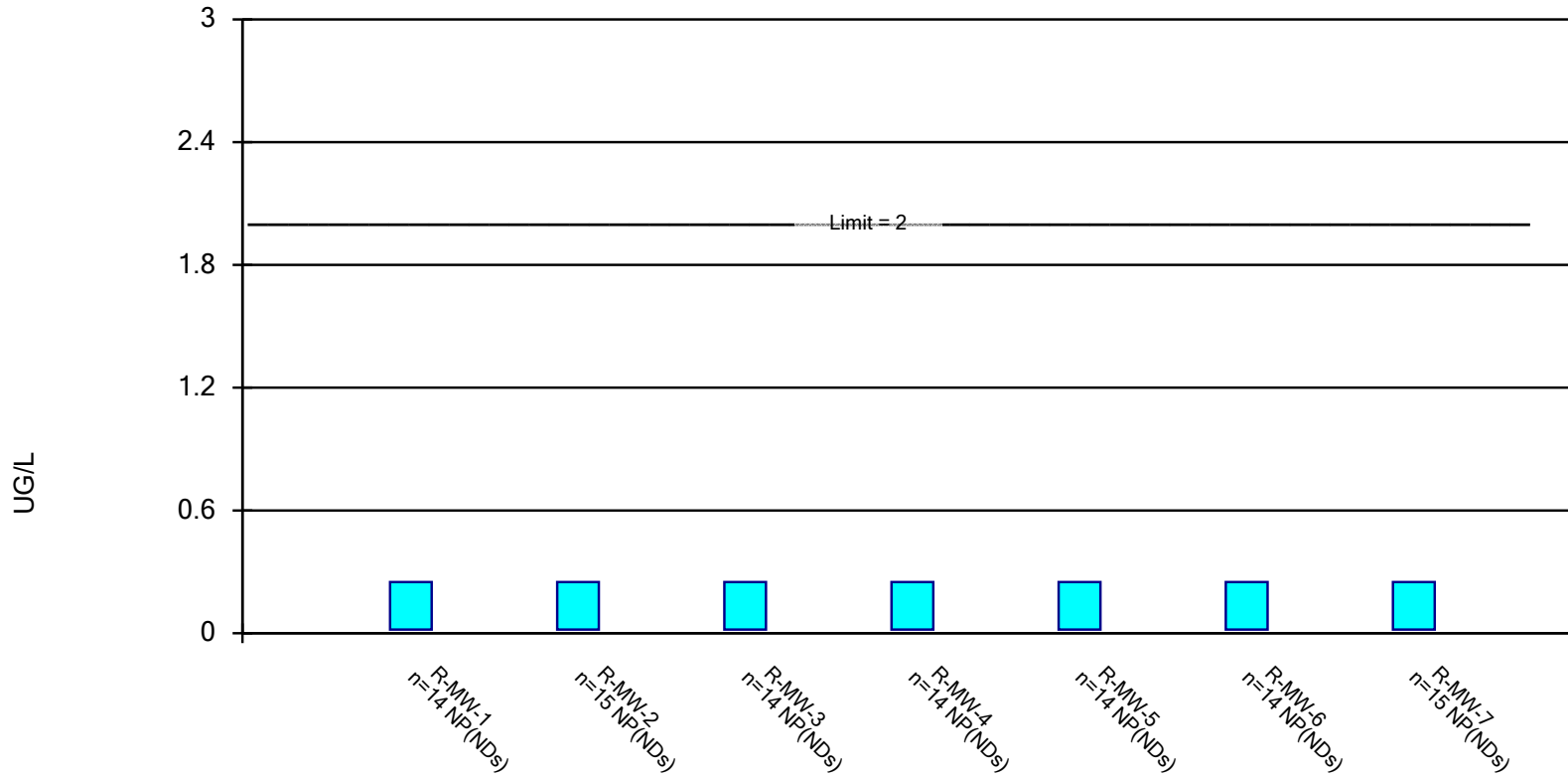


Constituent: SELENIUM, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

### Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: THALLIUM, TOTAL Analysis Run 2/7/2023 8:37 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data



# Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/7/2023, 8:38 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	R-MW-1	0.728	0.3099	6	No	19	15.79	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-2	4.823	3.556	6	No	19	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-3	0.1077	0.04299	6	No	19	47.37	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-4	0.05	0.029	6	No	18	83.33	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-5	0.05	0.0275	6	No	18	94.44	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-6	0.14	0.029	6	No	19	63.16	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-7	0.086	0.029	6	No	20	80	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	R-MW-1	12.1	6.157	30	No	19	0	No	0.01	Param.
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-MW-2</b>	<b>244.4</b>	<b>222.3</b>	<b>30</b>	<b>Yes</b>	<b>19</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-MW-3</b>	<b>70.39</b>	<b>42.39</b>	<b>30</b>	<b>Yes</b>	<b>19</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
ARSENIC, TOTAL (UG/L)	R-MW-4	12	6.7	30	No	19	0	No	0.01	NP (normality)
ARSENIC, TOTAL (UG/L)	R-MW-5	4.077	2.734	30	No	19	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-6	1.069	0.2229	30	No	16	18.75	ln(x)	0.01	Param.
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>105</b>	<b>42.3</b>	<b>30</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>NP (normality)</b>
BARIUM, TOTAL (UG/L)	R-MW-1	42.2	15.5	2000	No	18	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-2	13.7	9.5	2000	No	19	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-3	20.21	14.44	2000	No	19	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-4	304.4	264	2000	No	19	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-5	390.7	351.8	2000	No	18	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-6	174.3	124.7	2000	No	18	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-7	286.9	226	2000	No	20	0	No	0.01	Param.
BERYLLIUM, TOTAL (UG/L)	R-MW-1	0.195	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-2	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-3	0.195	0.08	4	No	14	92.86	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-4	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-5	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-6	0.195	0.08	4	No	14	92.86	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-7	0.195	0.08	4	No	14	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-1	0.041	0.009	5	No	17	76.47	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-2	0.2921	0.1227	5	No	17	17.65	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-MW-3	0.33	0.0145	5	No	17	47.06	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	R-MW-4	0.041	0.0145	5	No	17	76.47	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-5	0.028	0.009	5	No	17	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-6	0.028	0.009	5	No	16	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-7	0.041	0.0145	5	No	18	77.78	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-1	0.5	0.08	100	No	17	58.82	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-2	0.8069	0.3497	100	No	17	29.41	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-3	1.018	0.3657	100	No	17	29.41	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-4	0.4647	0.1529	100	No	16	37.5	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-5	0.4615	0.1448	100	No	17	29.41	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-6	0.6	0.039	100	No	15	66.67	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-7	0.3593	0.1217	100	No	18	38.89	ln(x)	0.01	Param.
COBALT, TOTAL (UG/L)	R-MW-1	0.75	0.36	6	No	15	86.67	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-2	0.475	0.36	6	No	15	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-3	0.75	0.36	6	No	15	93.33	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-4	0.75	0.36	6	No	15	80	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-5	0.75	0.36	6	No	15	86.67	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-6	0.75	0.36	6	No	14	92.86	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-7	1.2	0.36	6	No	16	75	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	R-MW-1	0.4075	0.2017	4	No	24	12.5	No	0.01	Param.

## Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/7/2023, 8:38 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-MW-2	1.157	0.8992	4	No	22	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-3	0.9926	0.8445	4	No	21	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-4	0.87	0.75	4	No	22	0	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-MW-5	0.1725	0.1337	4	No	21	4.762	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-6	0.2752	0.1953	4	No	22	4.545	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-7	0.35	0.26	4	No	24	8.333	No	0.01	NP (normality)
LEAD, TOTAL (UG/L)	R-MW-1	2.3	1.2	15	No	18	94.44	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-2	12.57	7.402	15	No	18	5.556	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-3	5.133	3.455	15	No	18	33.33	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-4	2.3	1.25	15	No	17	94.12	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-5	3	1.25	15	No	17	82.35	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-6	3.2	1.25	15	No	17	76.47	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-7	3.05	1.25	15	No	19	89.47	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-1	2.95	2.3	64.7	No	19	94.74	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-2	3.5	2.3	64.7	No	19	84.21	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-3	3.85	2.3	64.7	No	19	89.47	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-4	43.53	38.65	64.7	No	19	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-MW-5	6.5	2.45	64.7	No	19	52.63	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-6	5.3	2.3	64.7	No	18	72.22	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-7	33.43	28.64	64.7	No	17	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	R-MW-1	0.052	0.0185	2	No	13	92.31	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-2	0.055	0.0185	2	No	13	92.31	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-3	0.054	0.0185	2	No	13	92.31	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-4	0.05	0.0185	2	No	13	92.31	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-5	0.054	0.0185	2	No	13	92.31	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-6	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-7	0.045	0.0195	2	No	14	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-MW-1	81.2	42.4	100	No	19	0	No	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-MW-2</b>	<b>184.2</b>	<b>147.2</b>	<b>100</b>	<b>Yes</b>	<b>18</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-MW-3</b>	<b>892.6</b>	<b>765.7</b>	<b>100</b>	<b>Yes</b>	<b>19</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
MOLYBDENUM, TOTAL (UG/L)	R-MW-4	105.2	81.05	100	No	19	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-5	1.1	0.45	100	No	19	78.95	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-MW-6	1.848	0.7456	100	No	19	42.11	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-7	185	78.2	100	No	20	0	No	0.01	NP (normality)
RADIUM [226 + 228] (PCI/L)	R-MW-1	1.04	0.693	5	No	19	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-2	1.39	0.7745	5	No	18	94.44	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-3	1.036	0.765	5	No	19	94.74	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-4	1.197	0.6785	5	No	19	84.21	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-5	1.137	0.672	5	No	19	78.95	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-6	1.726	0.645	5	No	19	73.68	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-7	0.9465	0.688	5	No	20	90	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-1	6	0.09	50	No	19	26.32	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	R-MW-2	2.049	1.197	50	No	19	0	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-3	0.6768	0.5621	50	No	18	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-4	0.14	0.09	50	No	19	63.16	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-5	0.09	0.043	50	No	19	100	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-6	0.42	0.22	50	No	18	16.67	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	R-MW-7	0.097	0.06	50	No	20	80	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-1	0.25	0.018	2	No	14	92.86	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-2	0.25	0.018	2	No	15	100	No	0.01	NP (NDs)

# Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/7/2023, 8:38 AM

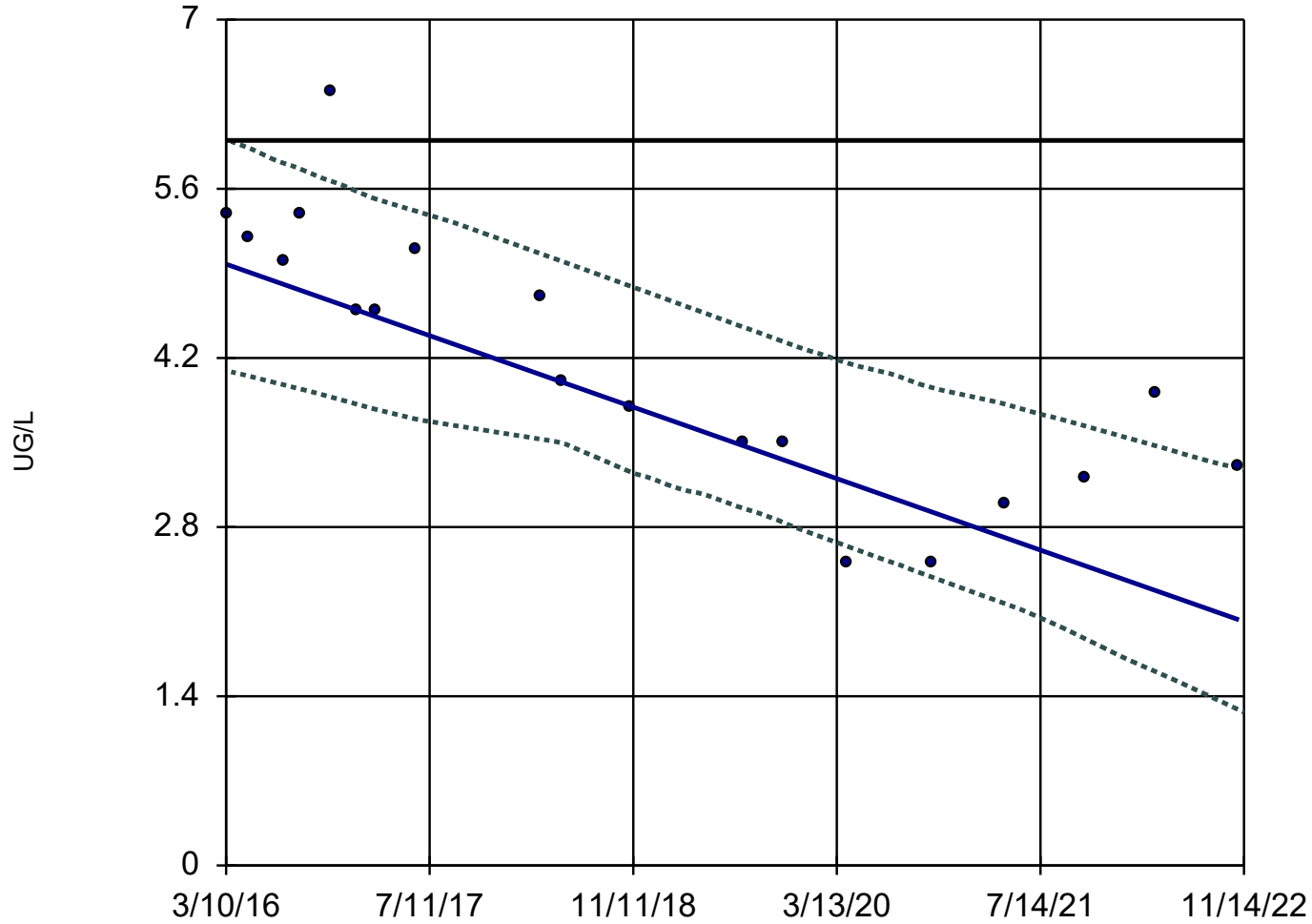
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
THALLIUM, TOTAL (UG/L)	R-MW-3	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-4	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-5	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-6	0.25	0.018	2	No	14	92.86	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-7	0.25	0.018	2	No	15	93.33	No	0.01	NP (NDs)

**APPENDIX B**

**Sanitas Trending Confidence  
Bands Statistical Output**

### Sen's Slope and 95% Confidence Band

R-MW-2



n = 19

Slope = -0.4424  
units per year.

Mann-Kendall  
statistic = -113  
critical = -68

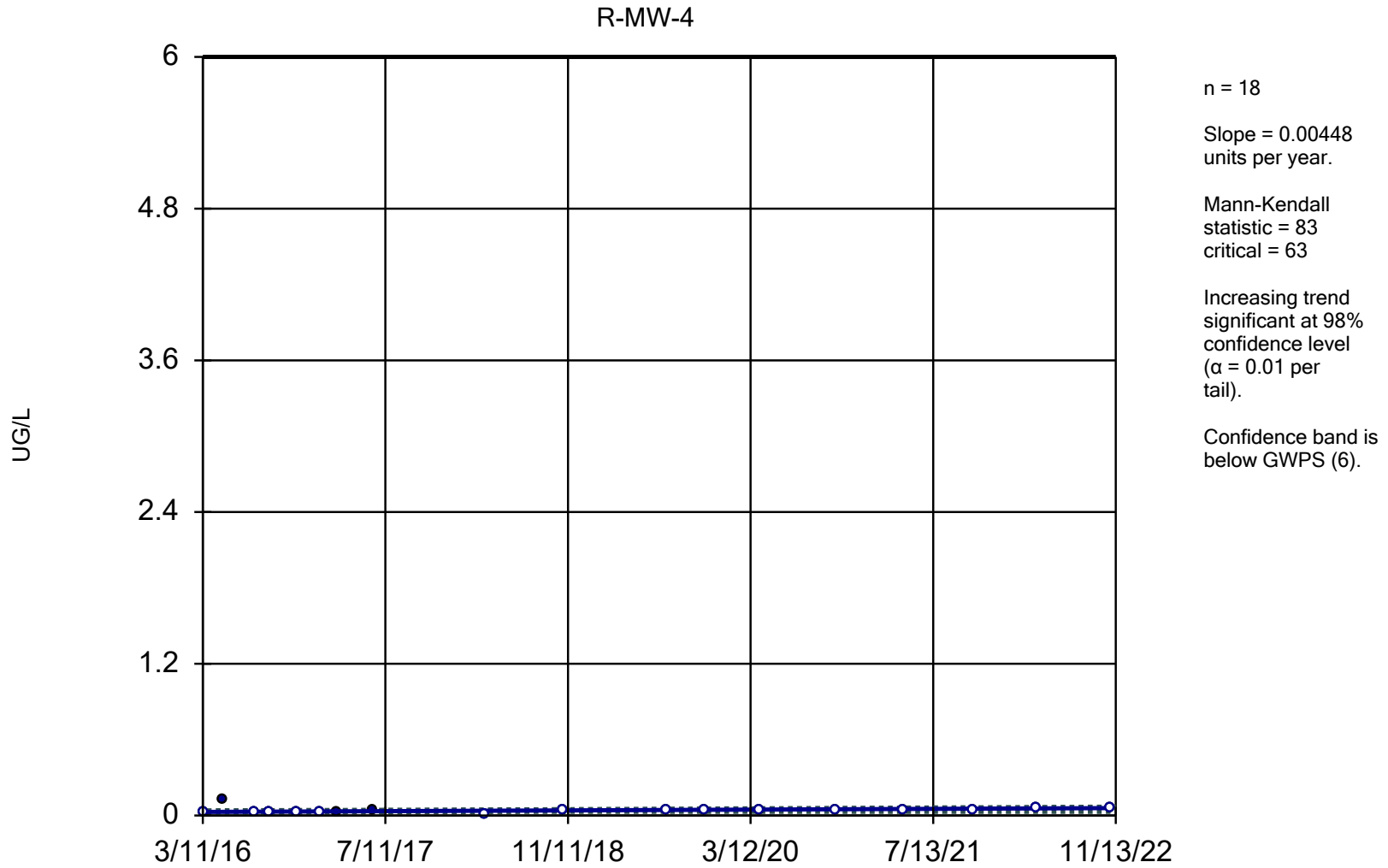
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (6).

Constituent: ANTIMONY, TOTAL Analysis Run 2/7/2023 8:38 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

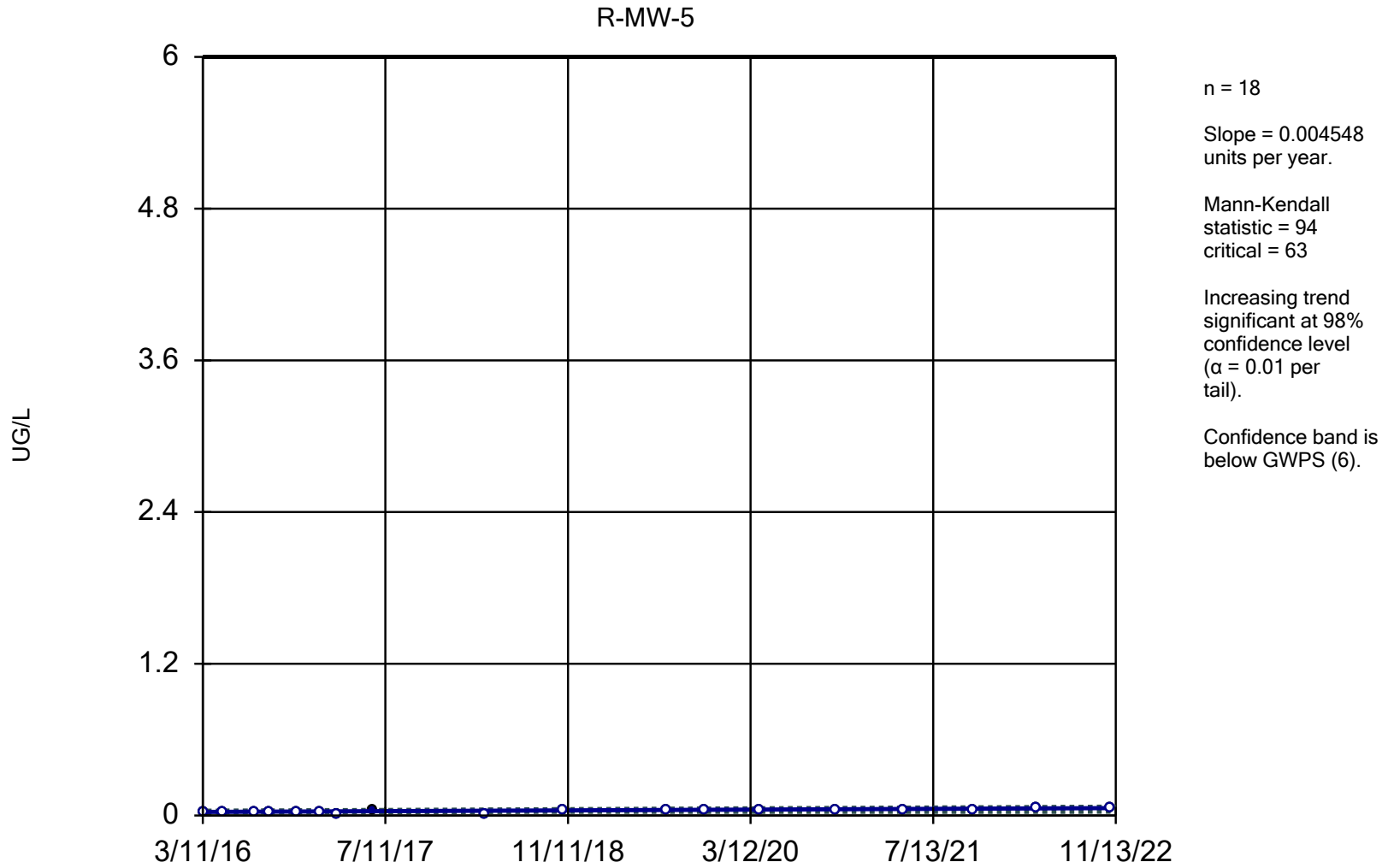
### Sen's Slope and 95% Confidence Band



Constituent: ANTIMONY, TOTAL Analysis Run 2/7/2023 8:38 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

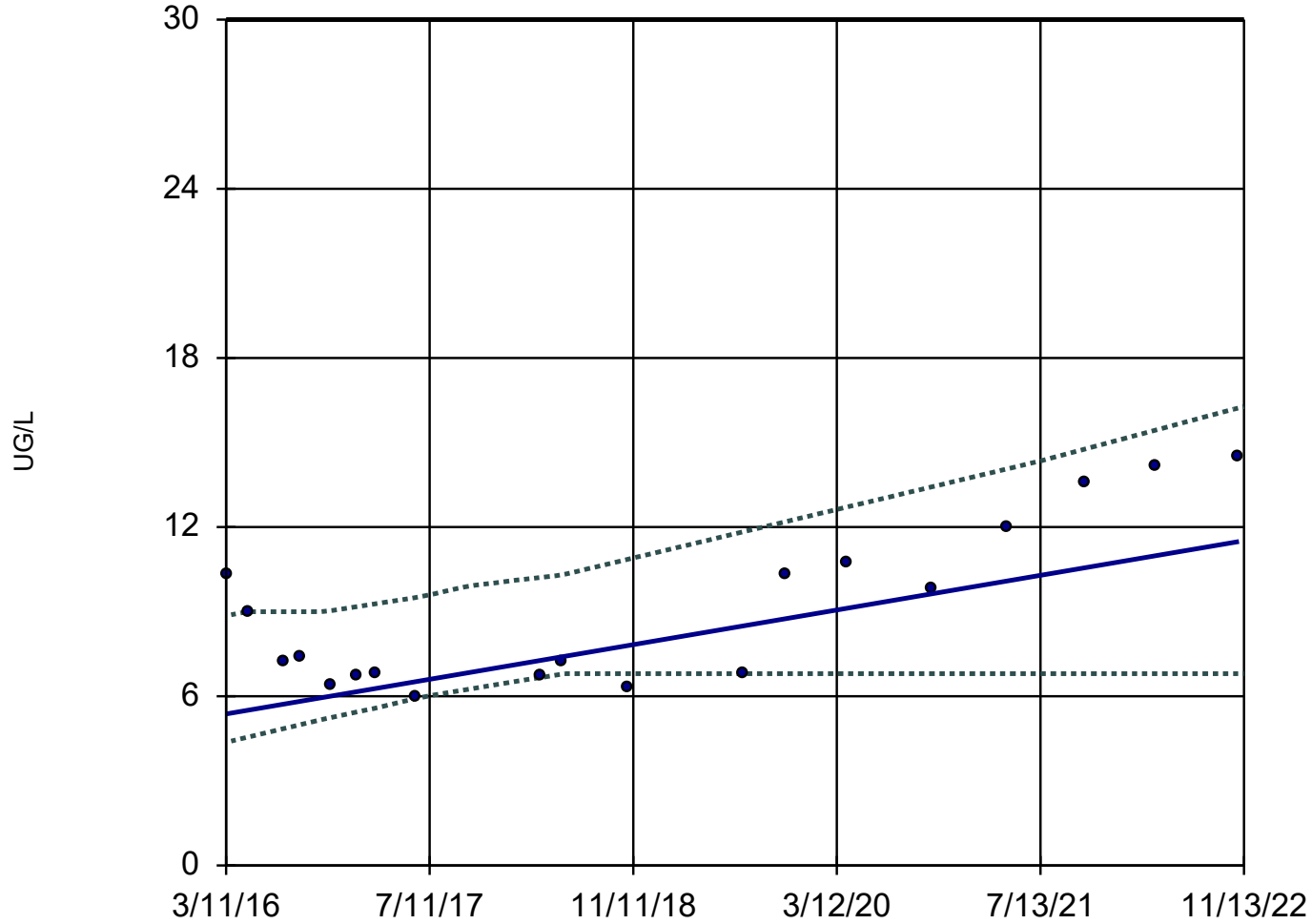


Constituent: ANTIMONY, TOTAL Analysis Run 2/7/2023 8:38 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-4



n = 19

Slope = 0.9195  
units per year.

Mann-Kendall  
statistic = 69  
critical = 68

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (30).

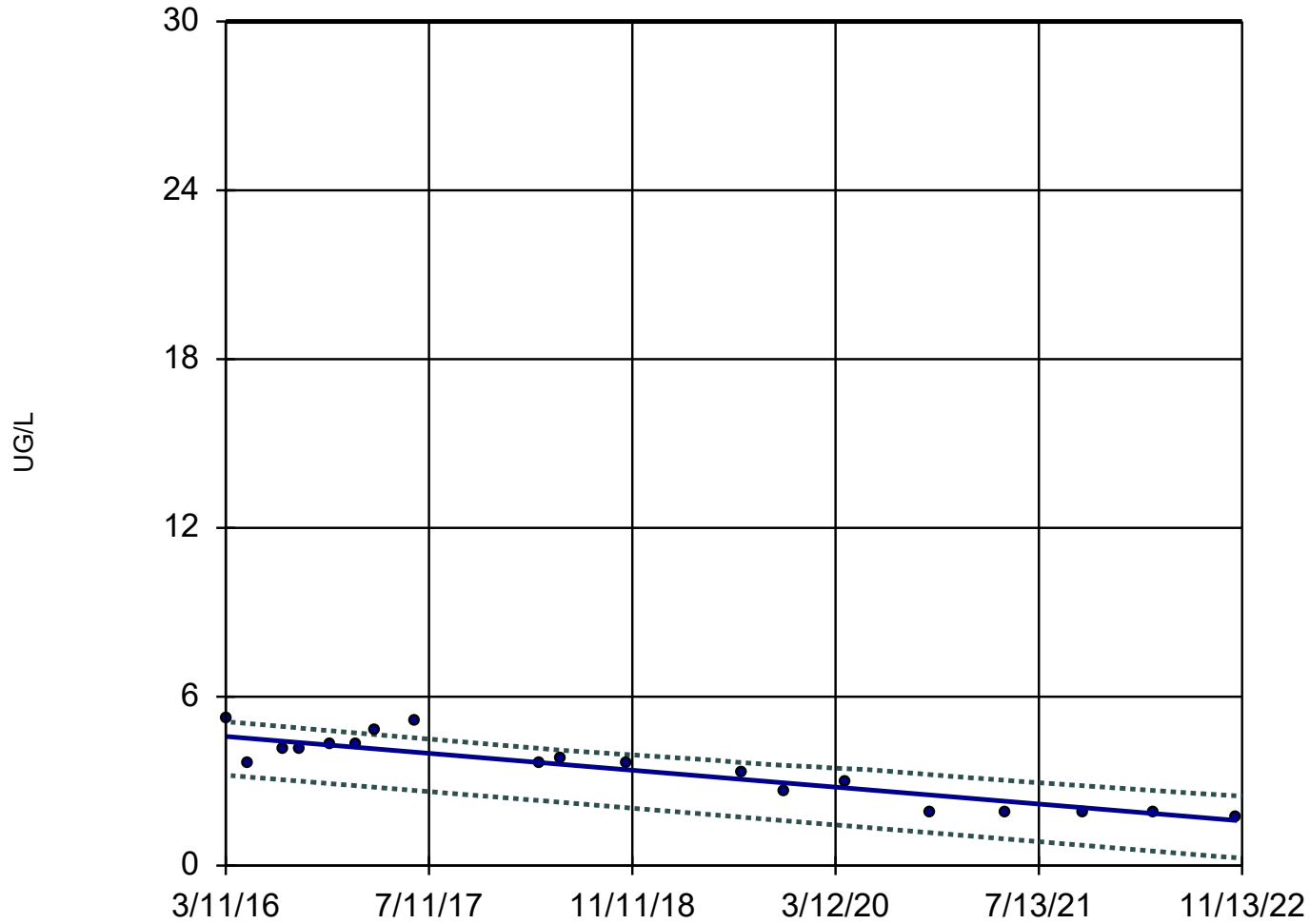
Constituent: ARSENIC, TOTAL Analysis Run 2/7/2023 8:38 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data



### Sen's Slope and 95% Confidence Band

R-MW-5



n = 19

Slope = -0.4493  
units per year.

Mann-Kendall  
statistic = -116  
critical = -68

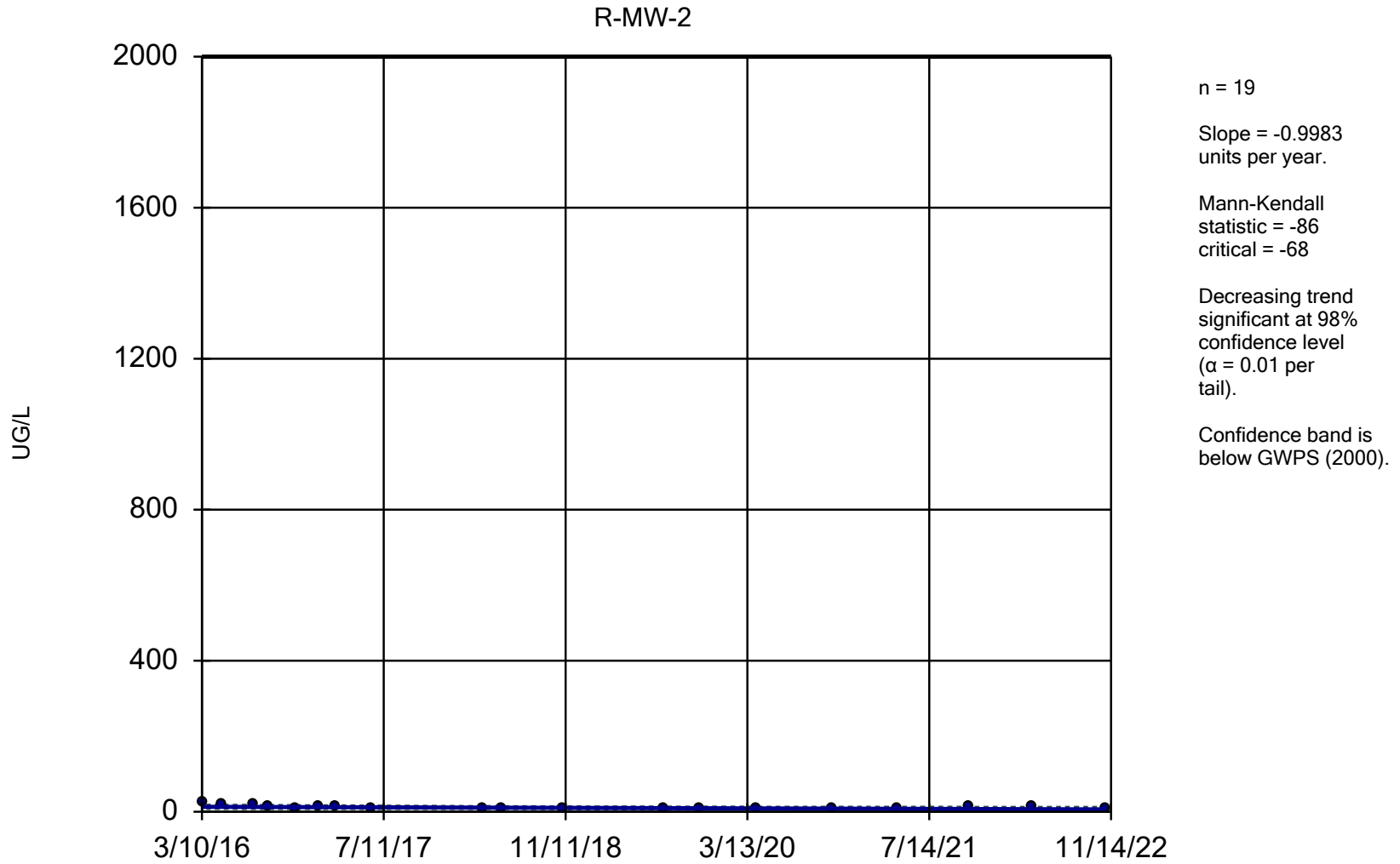
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (30).

Constituent: ARSENIC, TOTAL Analysis Run 2/7/2023 8:38 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

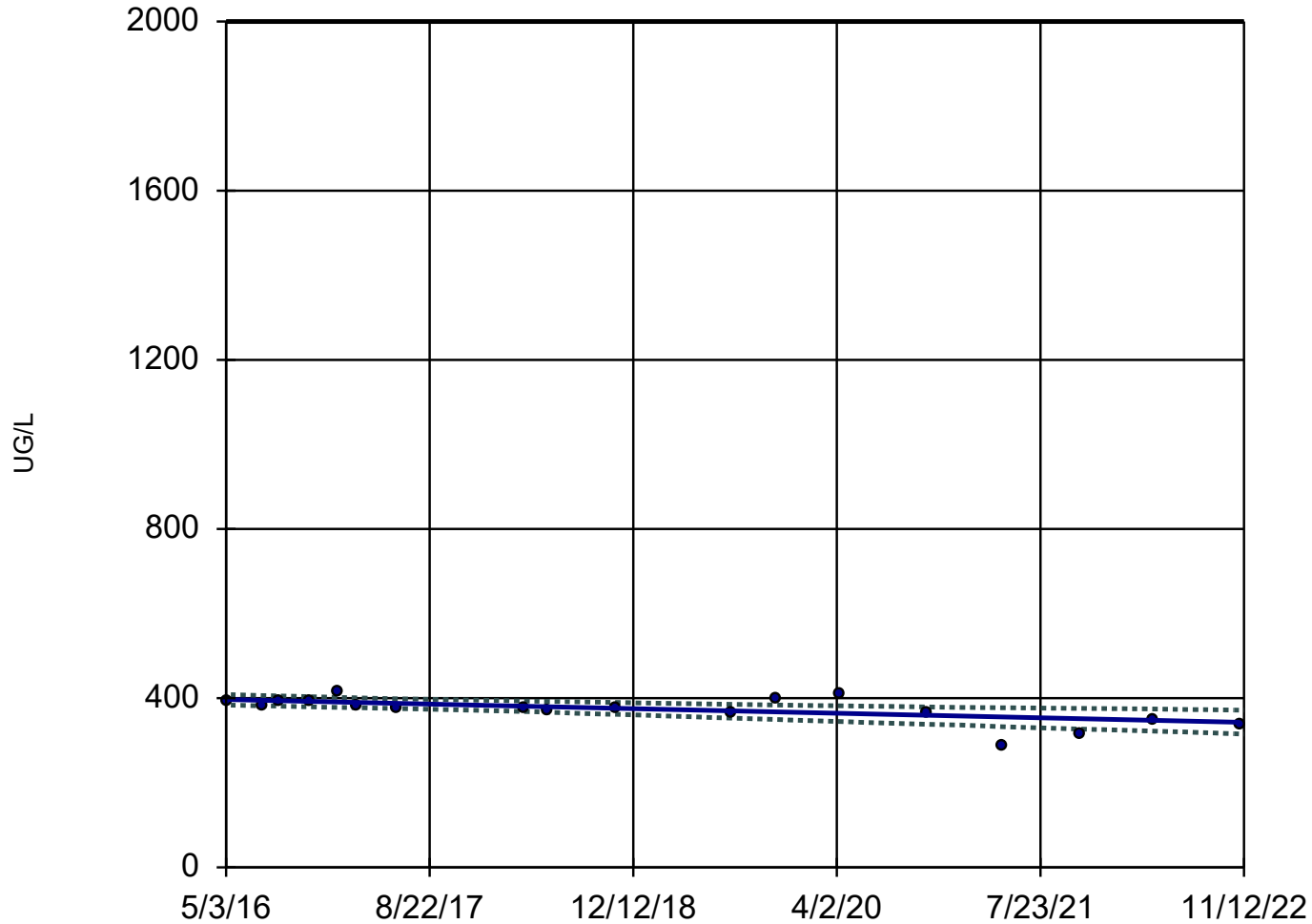


Constituent: BARIUM, TOTAL Analysis Run 2/7/2023 8:38 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-5



n = 18

Slope = -8.28  
units per year.

Mann-Kendall  
statistic = -78  
critical = -63

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

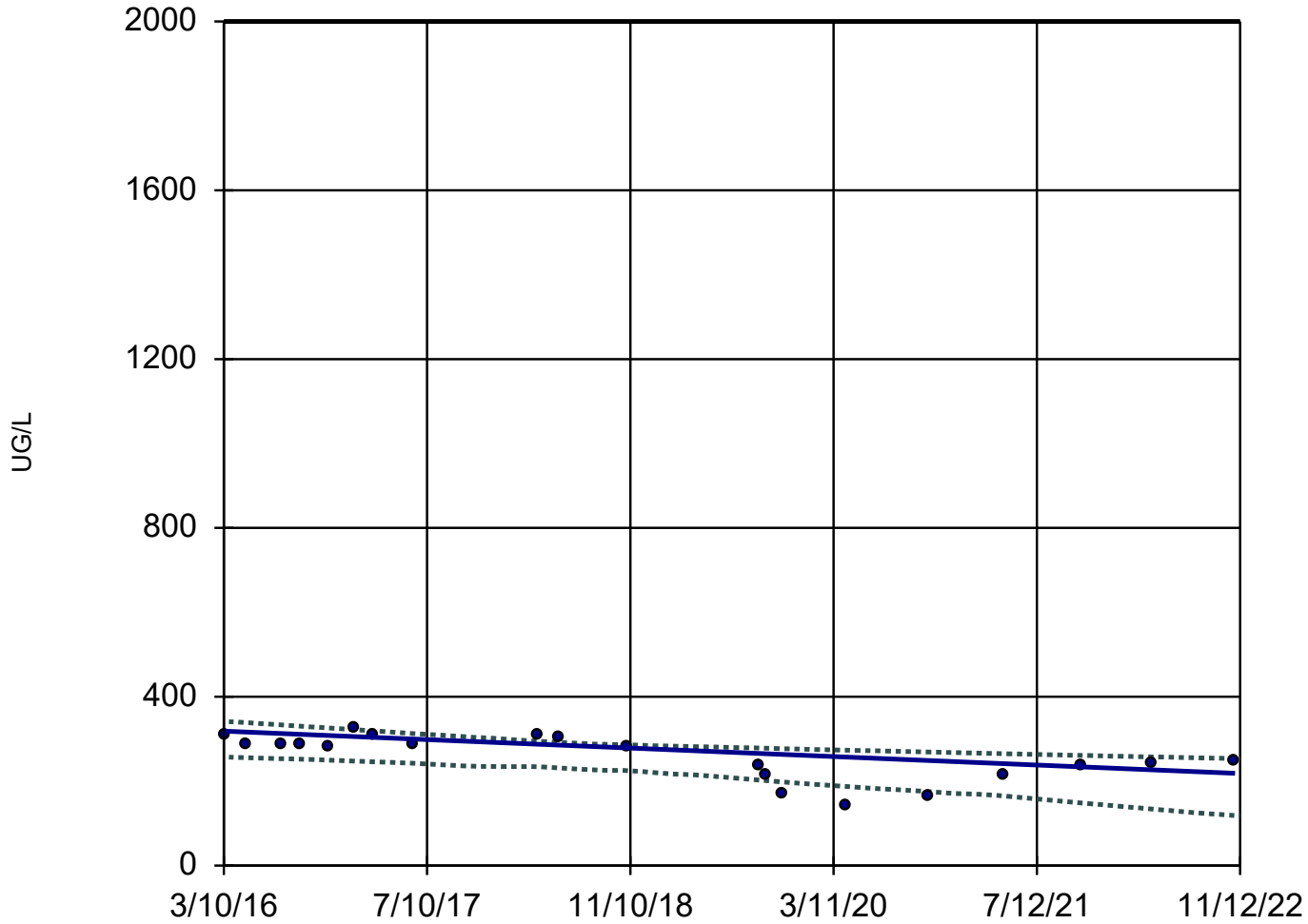
Confidence band is  
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 2/7/2023 8:38 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-7



n = 20

Slope = -15.05  
units per year.

Mann-Kendall  
statistic = -93  
critical = -73

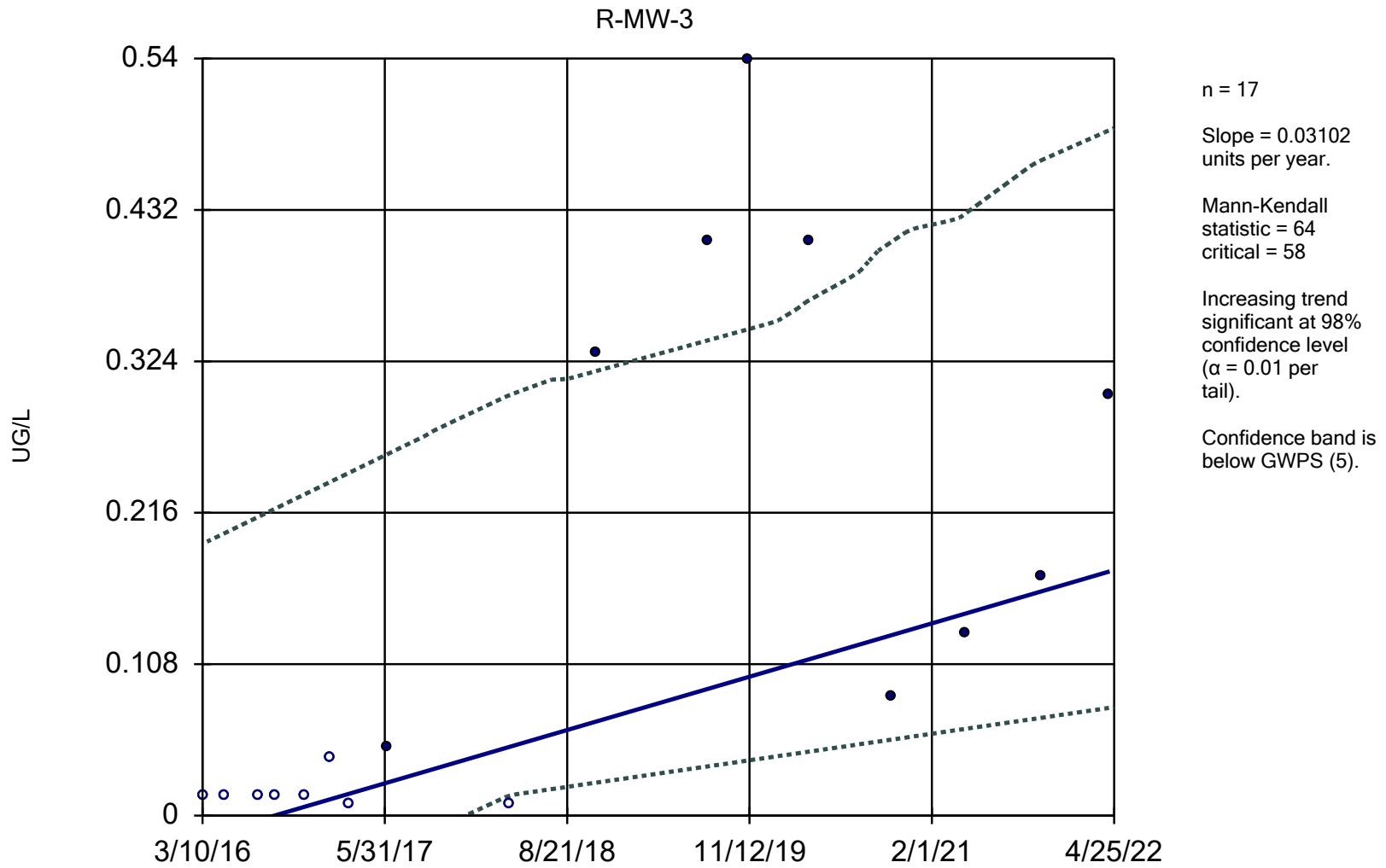
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 2/7/2023 8:38 AM View: Assessment Monitoring

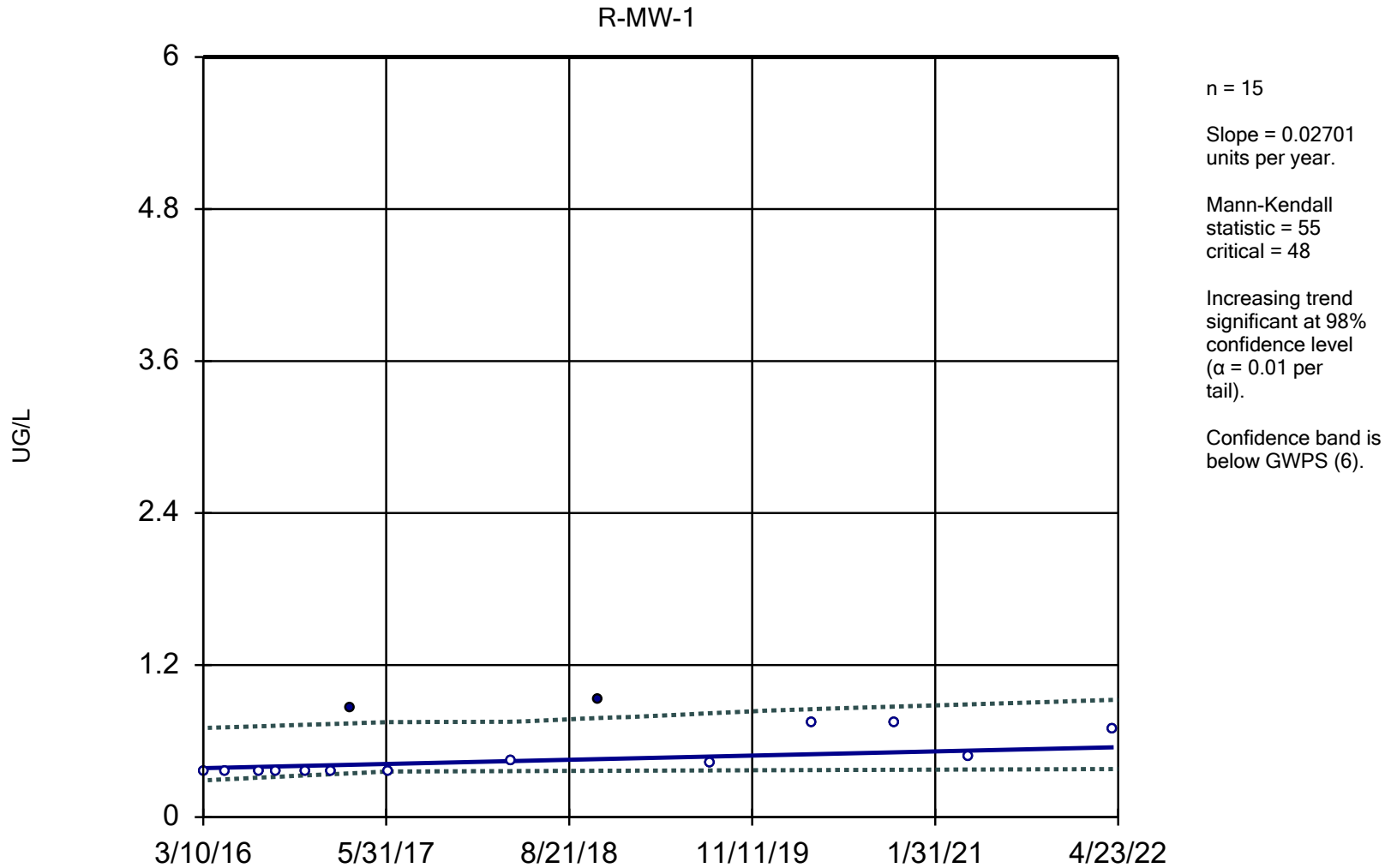
Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band



Constituent: CADMIUM, TOTAL Analysis Run 2/7/2023 8:38 AM View: Assessment Monitoring  
Rush Island E.C. Client: Ameren Data: RIEC Data

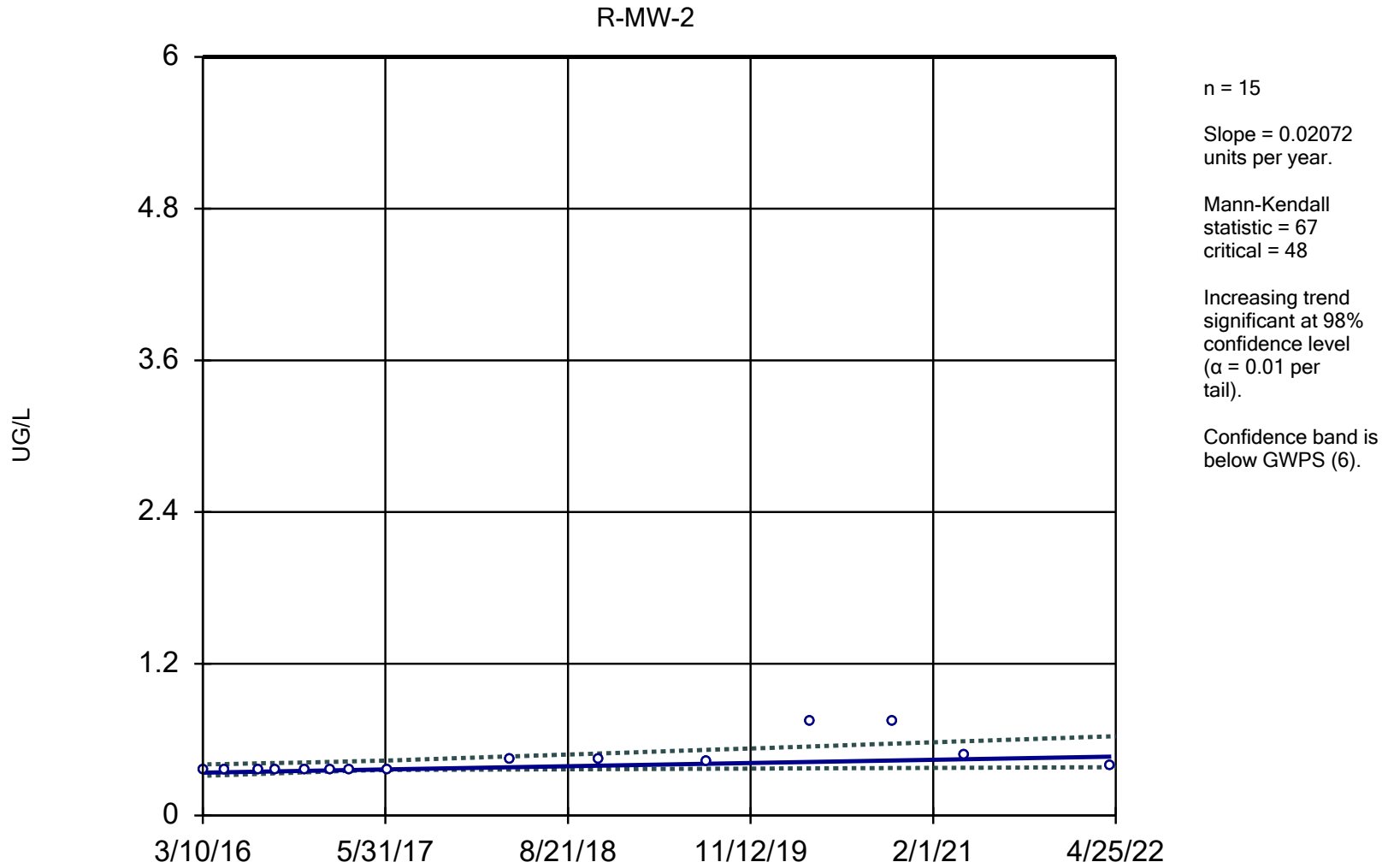
## Sen's Slope and 95% Confidence Band



Constituent: COBALT, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

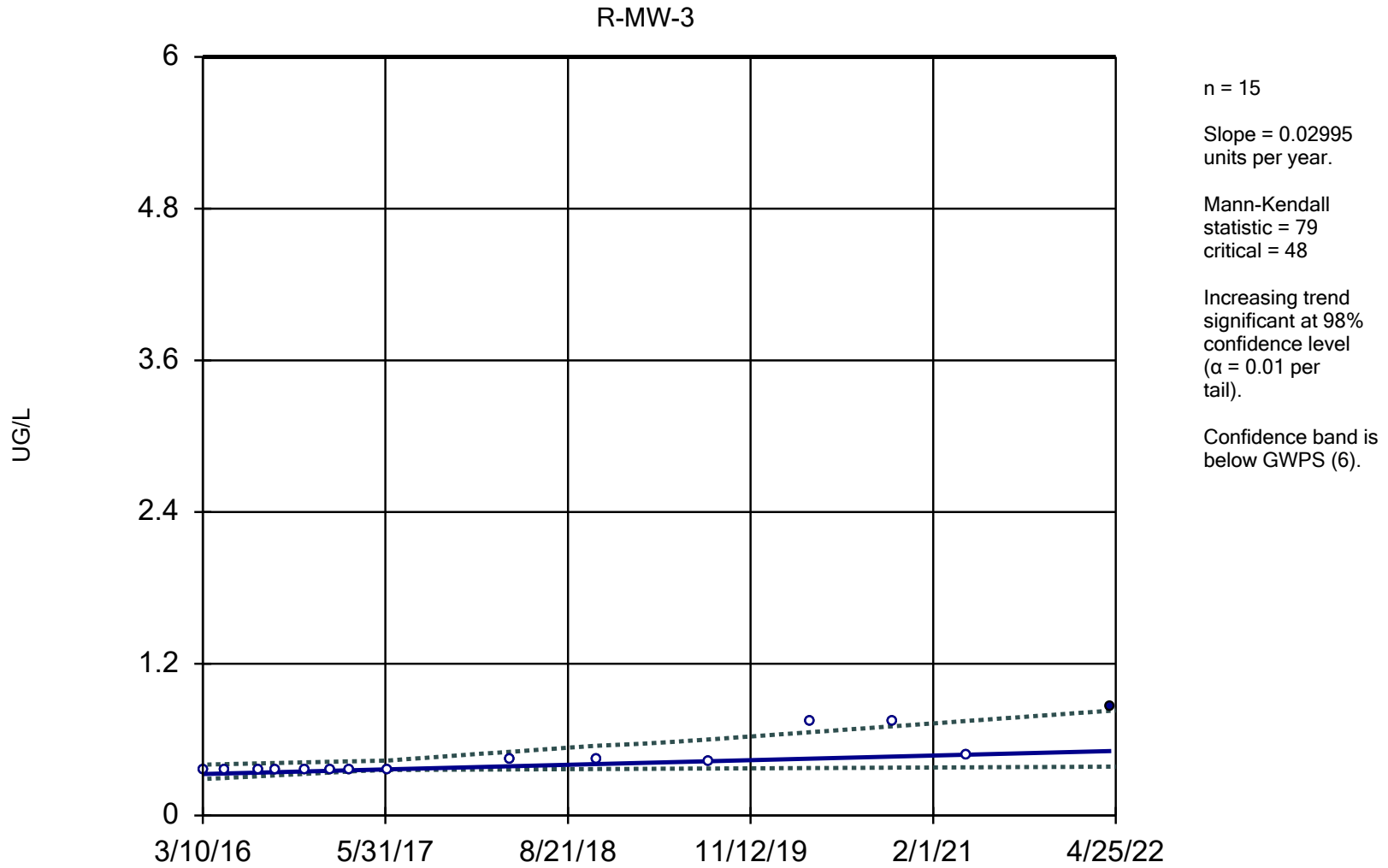
### Sen's Slope and 95% Confidence Band



Constituent: COBALT, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

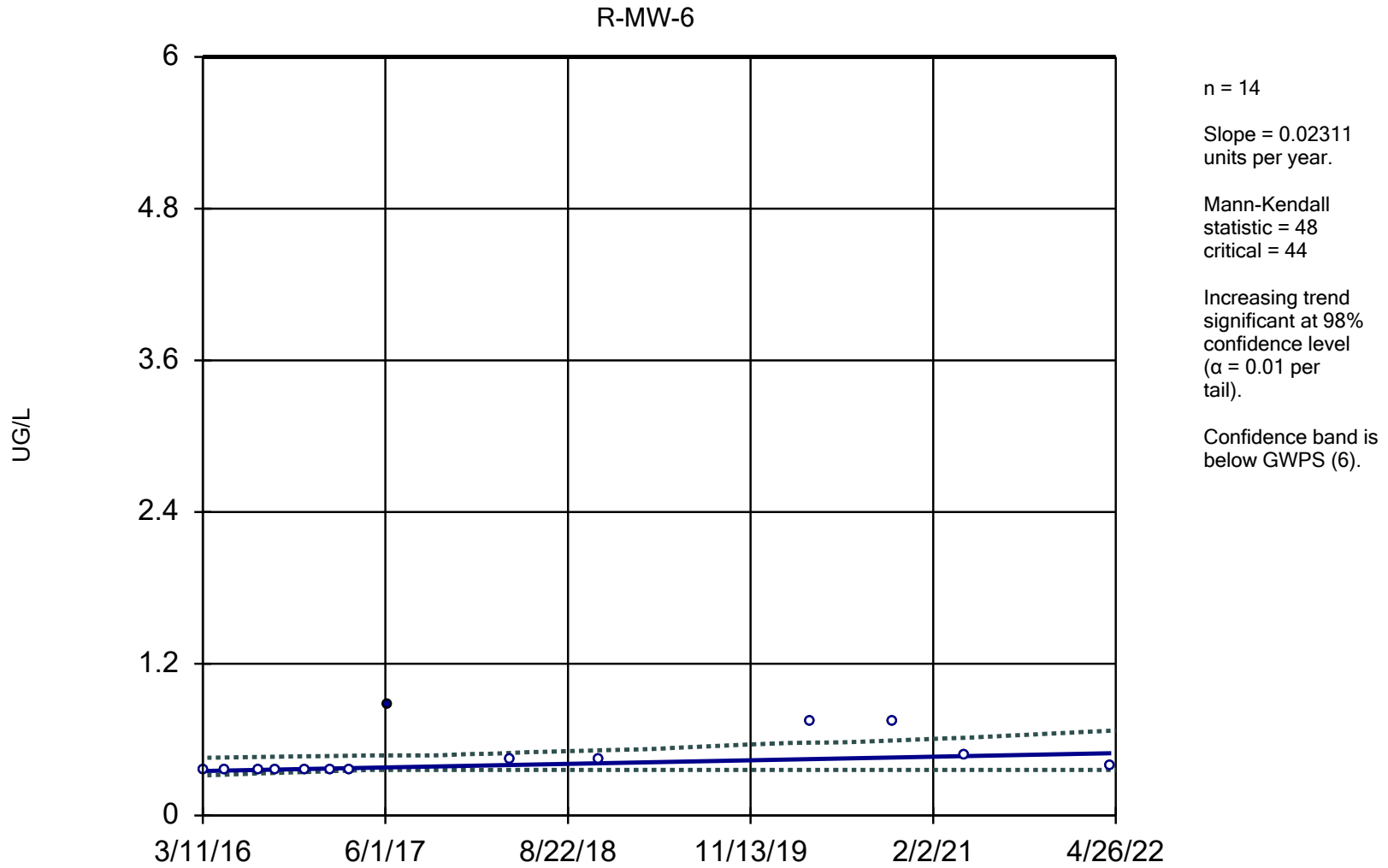


Constituent: COBALT, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data



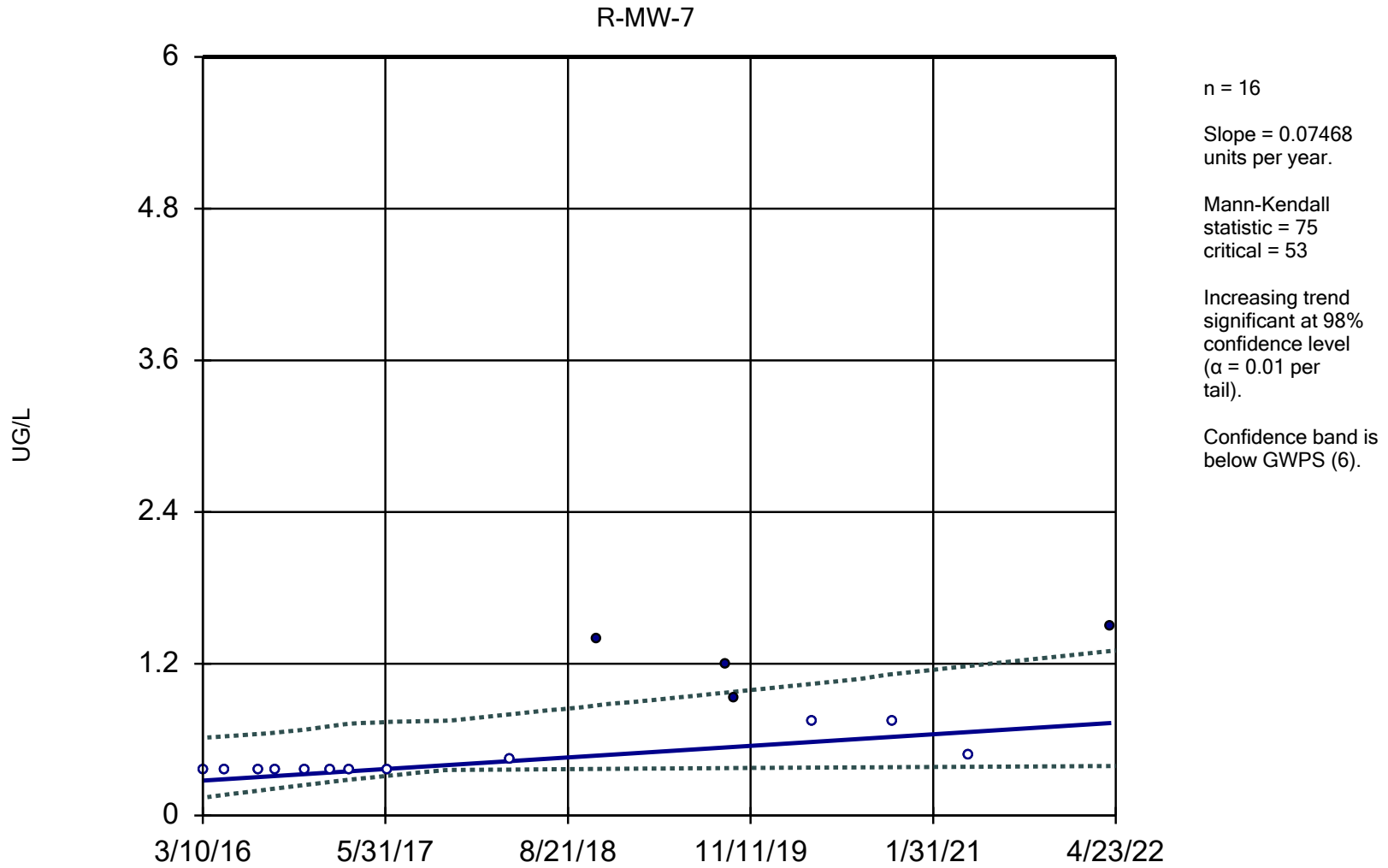
### Sen's Slope and 95% Confidence Band



Constituent: COBALT, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

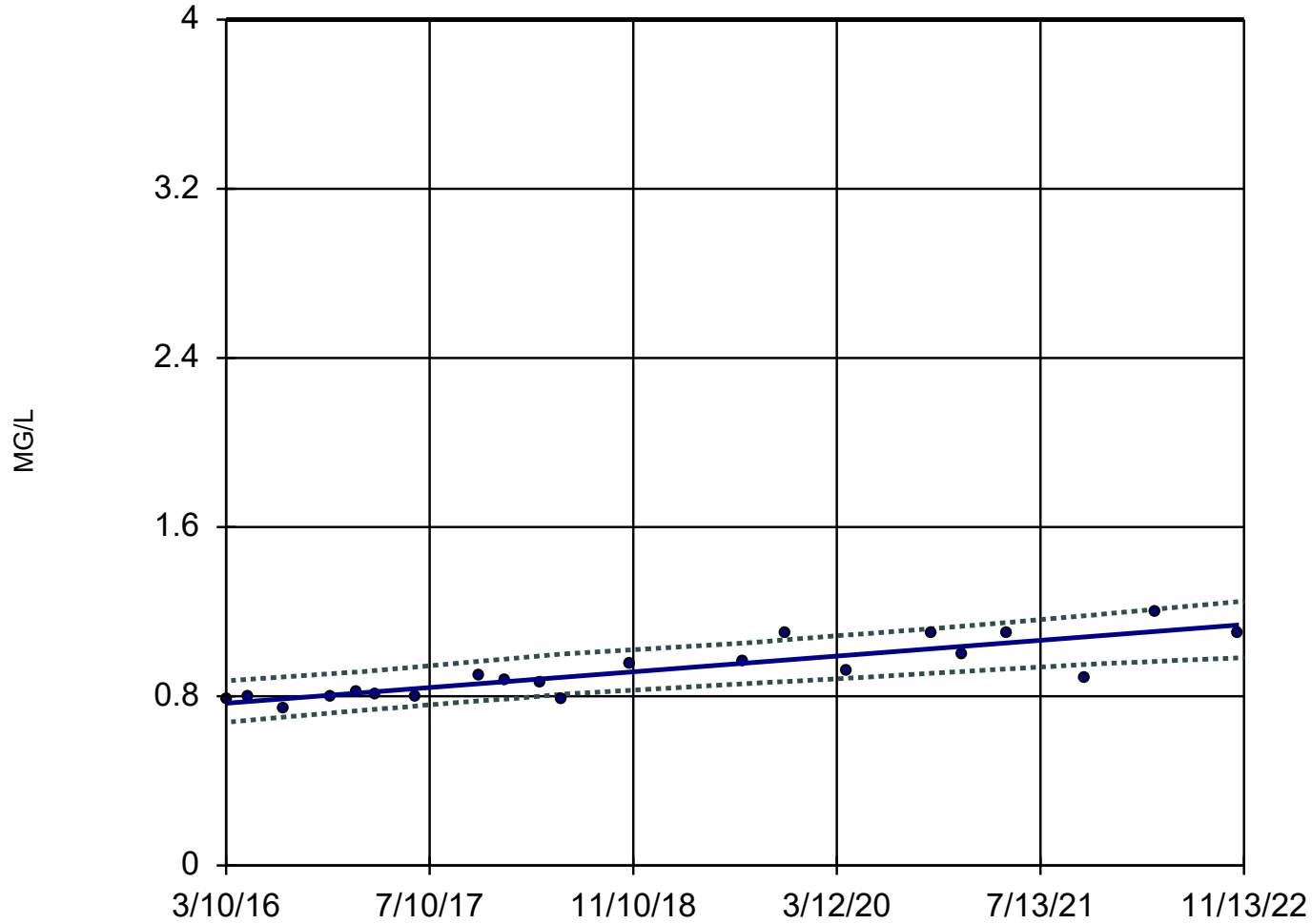


Constituent: COBALT, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring

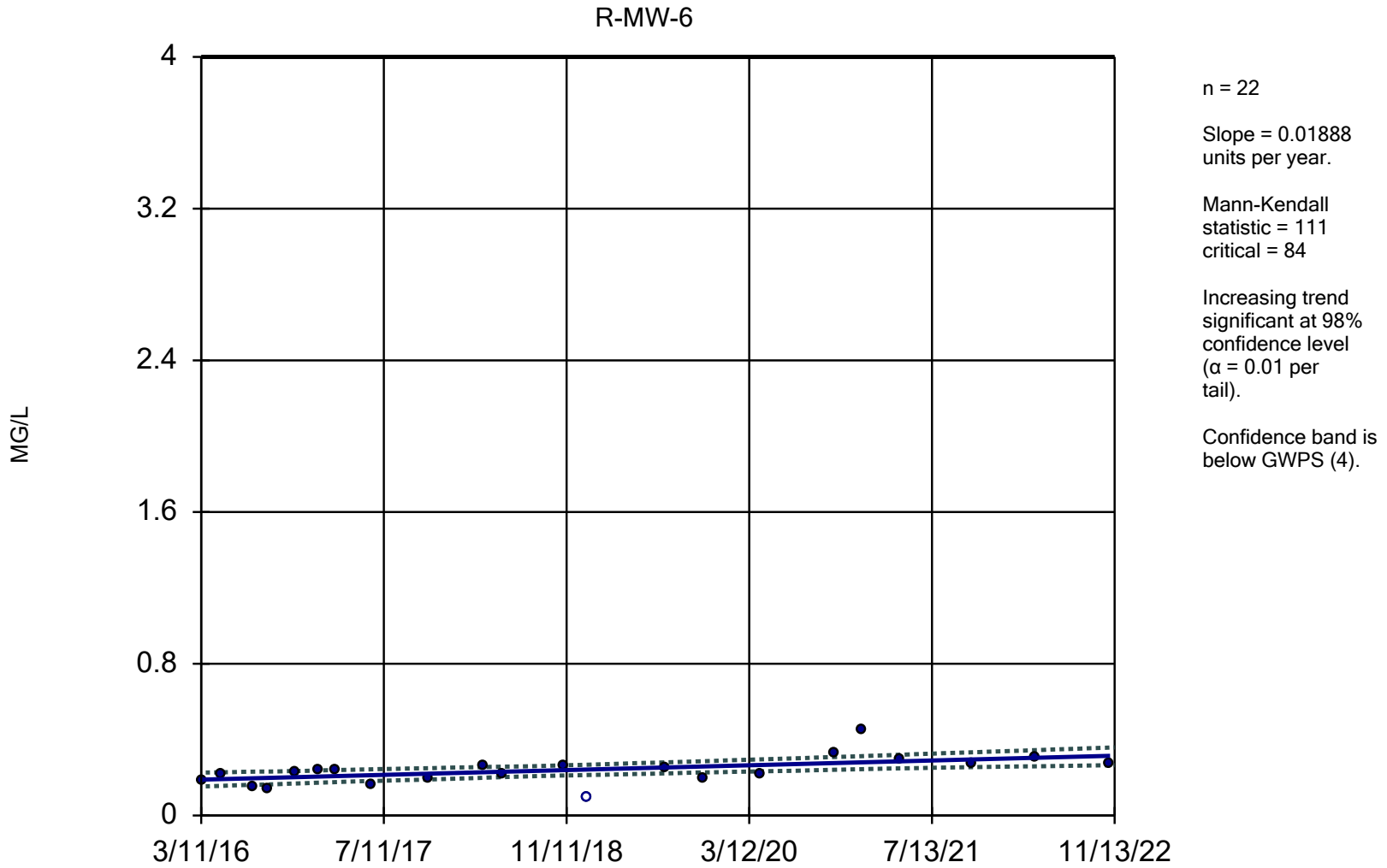
Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

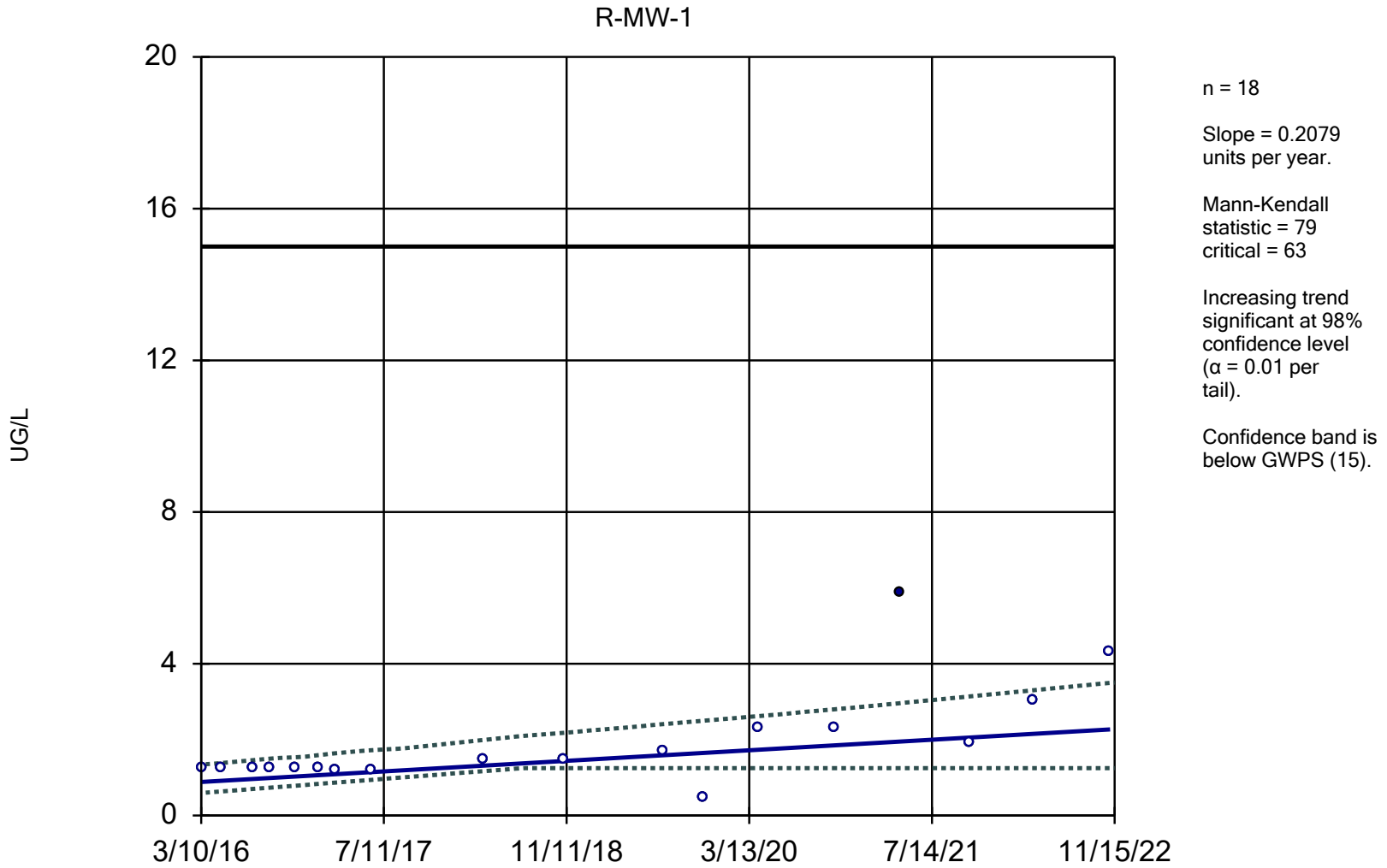
R-MW-3



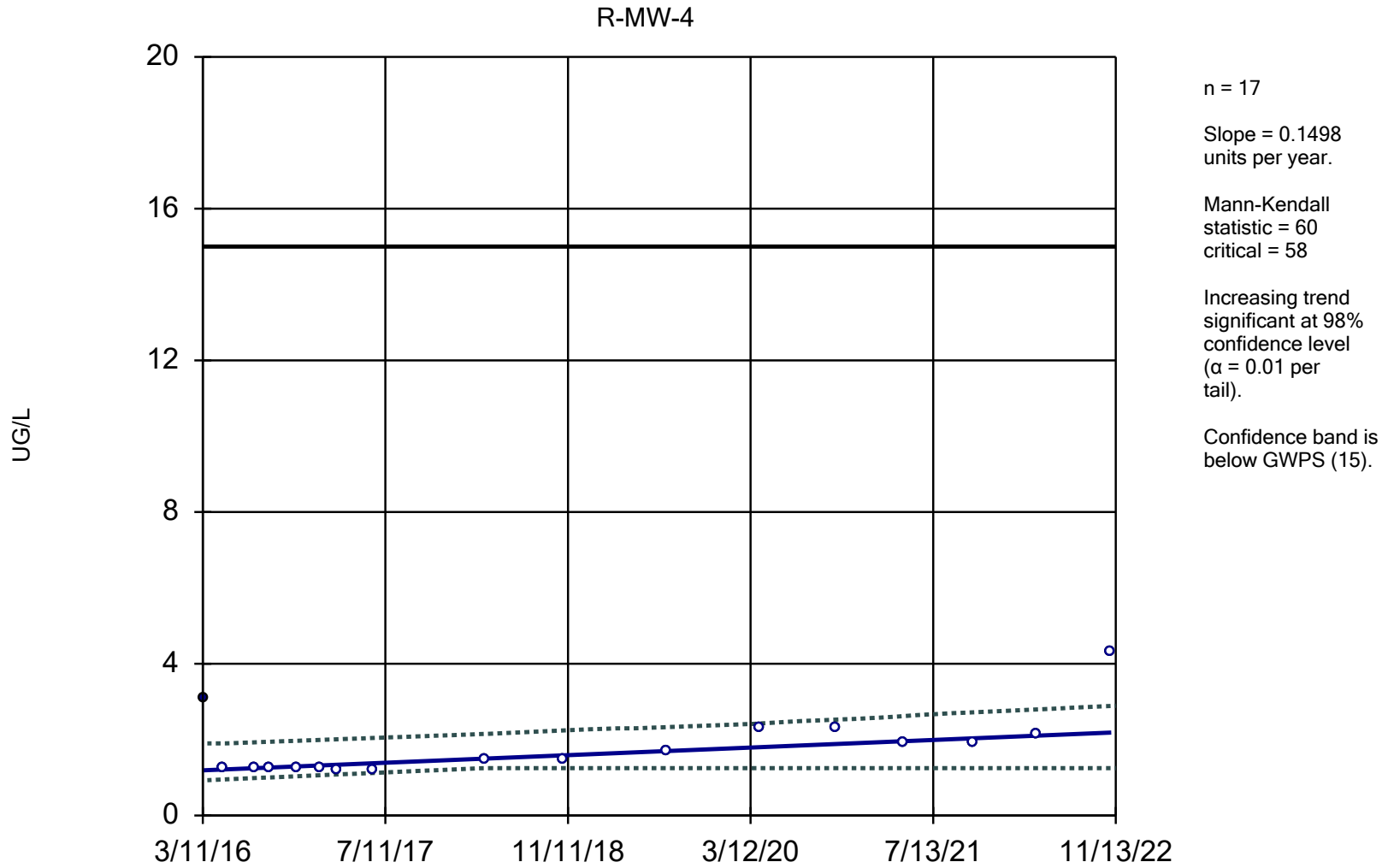
### Sen's Slope and 95% Confidence Band



### Sen's Slope and 95% Confidence Band



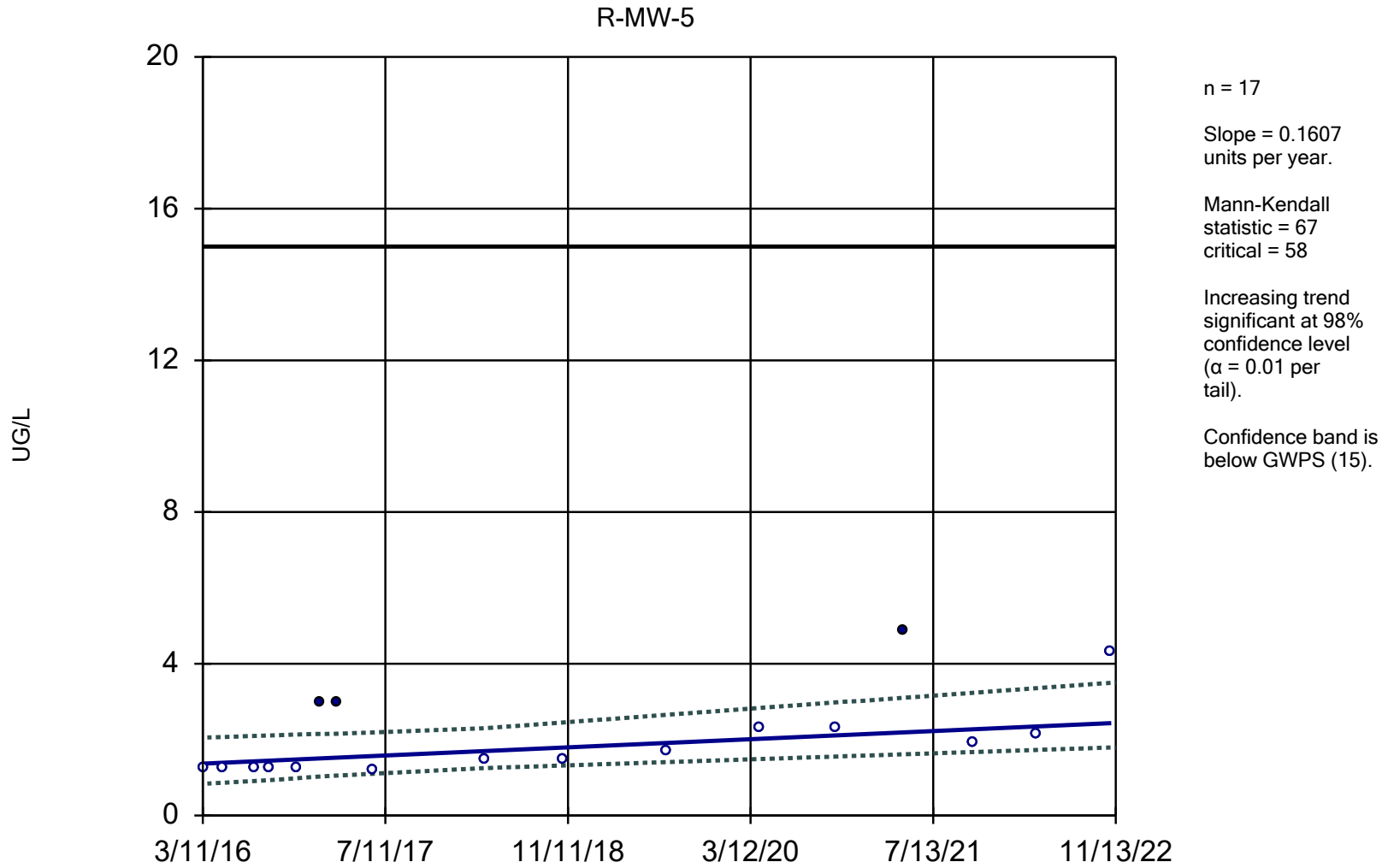
### Sen's Slope and 95% Confidence Band



Constituent: LEAD, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band



Constituent: LEAD, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring

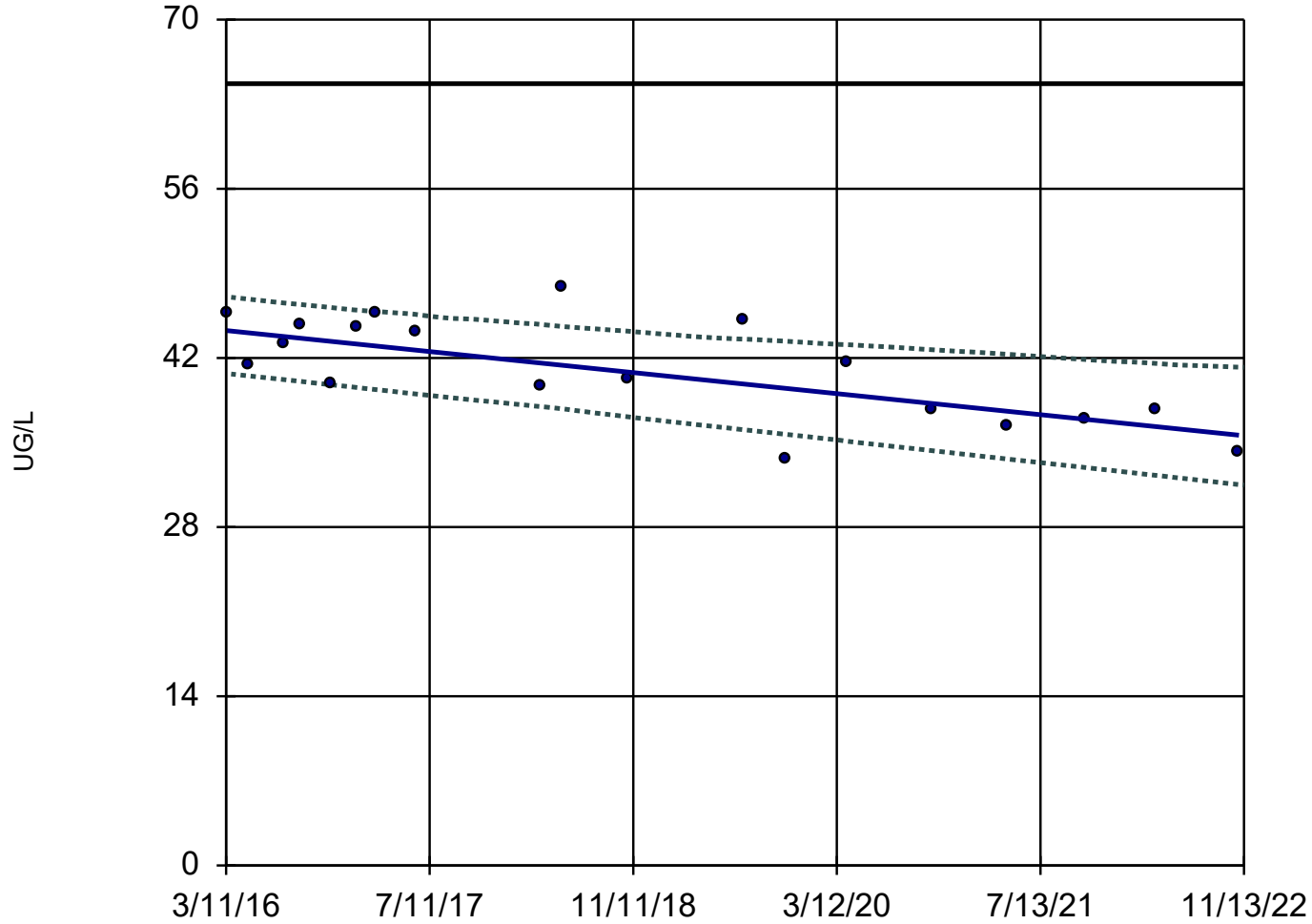
Rush Island E.C. Client: Ameren Data: RIEC Data





### Sen's Slope and 95% Confidence Band

R-MW-4



n = 19

Slope = -1.304  
units per year.

Mann-Kendall  
statistic = -79  
critical = -68

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

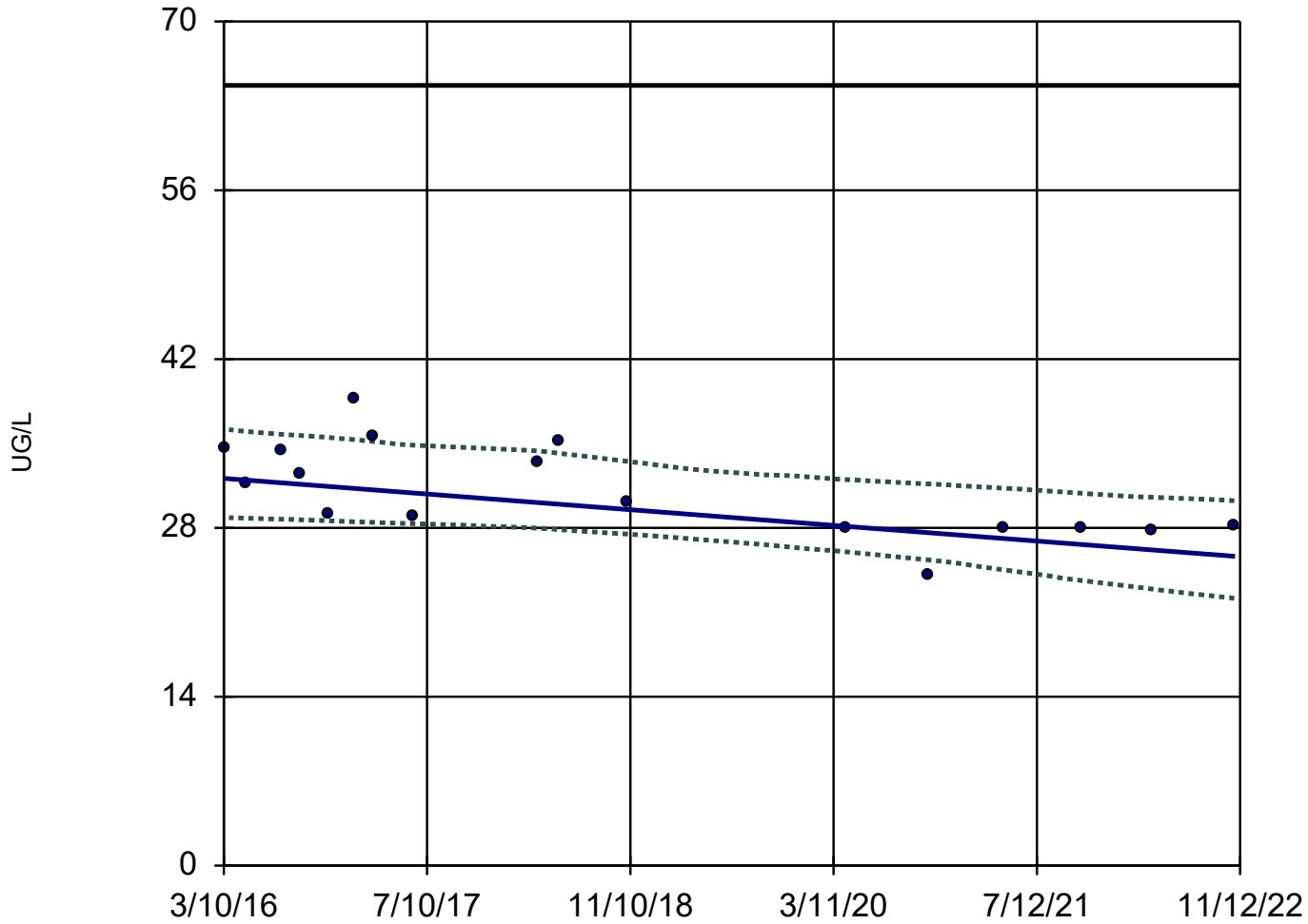
Confidence band is  
below GWPS (64.7).

Constituent: LITHIUM, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-7



n = 17

Slope = -0.9711 units per year.

Mann-Kendall statistic = -67  
critical = -58

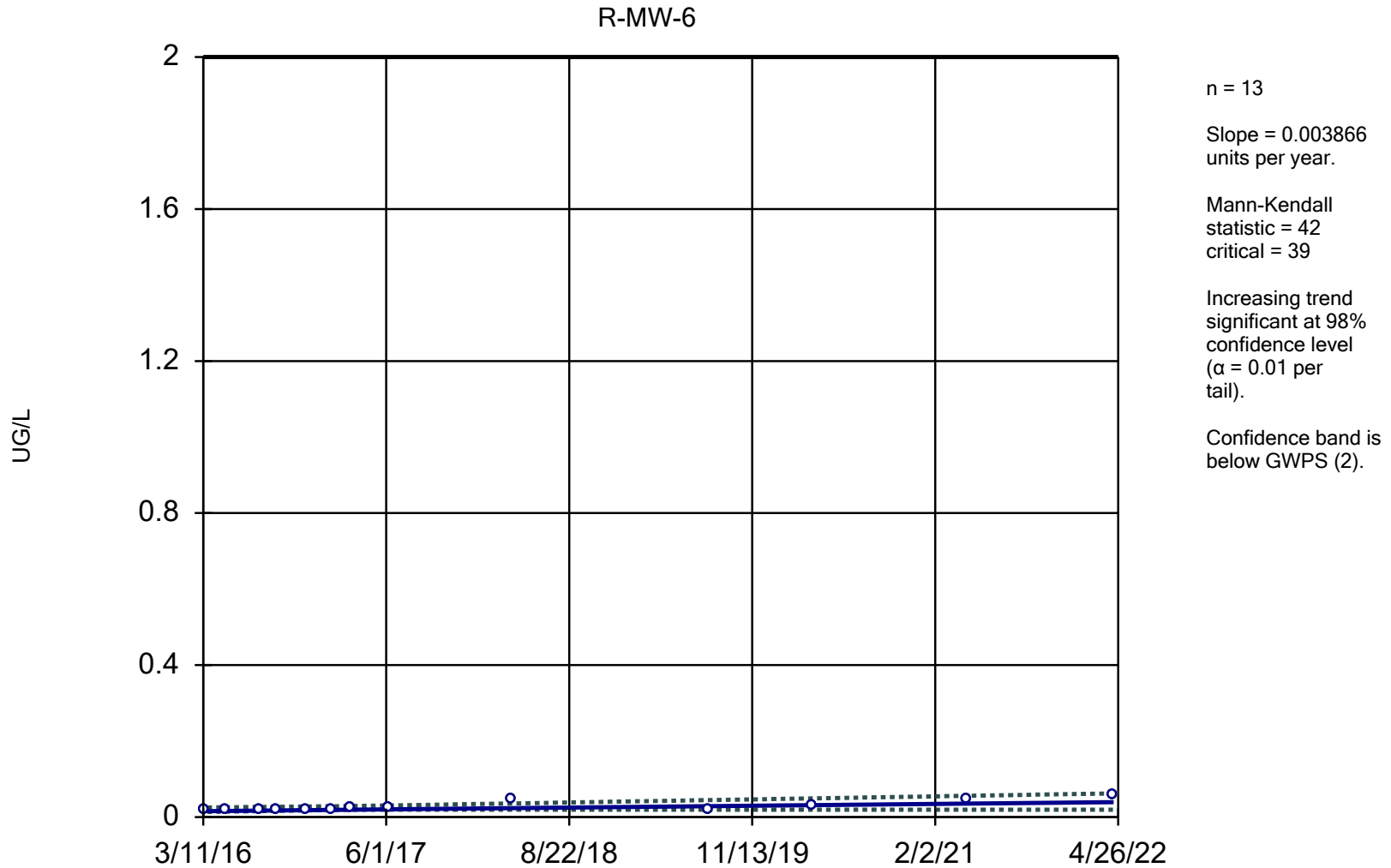
Decreasing trend significant at 98% confidence level ( $\alpha = 0.01$  per tail).

Confidence band is below GWPS (64.7).

Constituent: LITHIUM, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

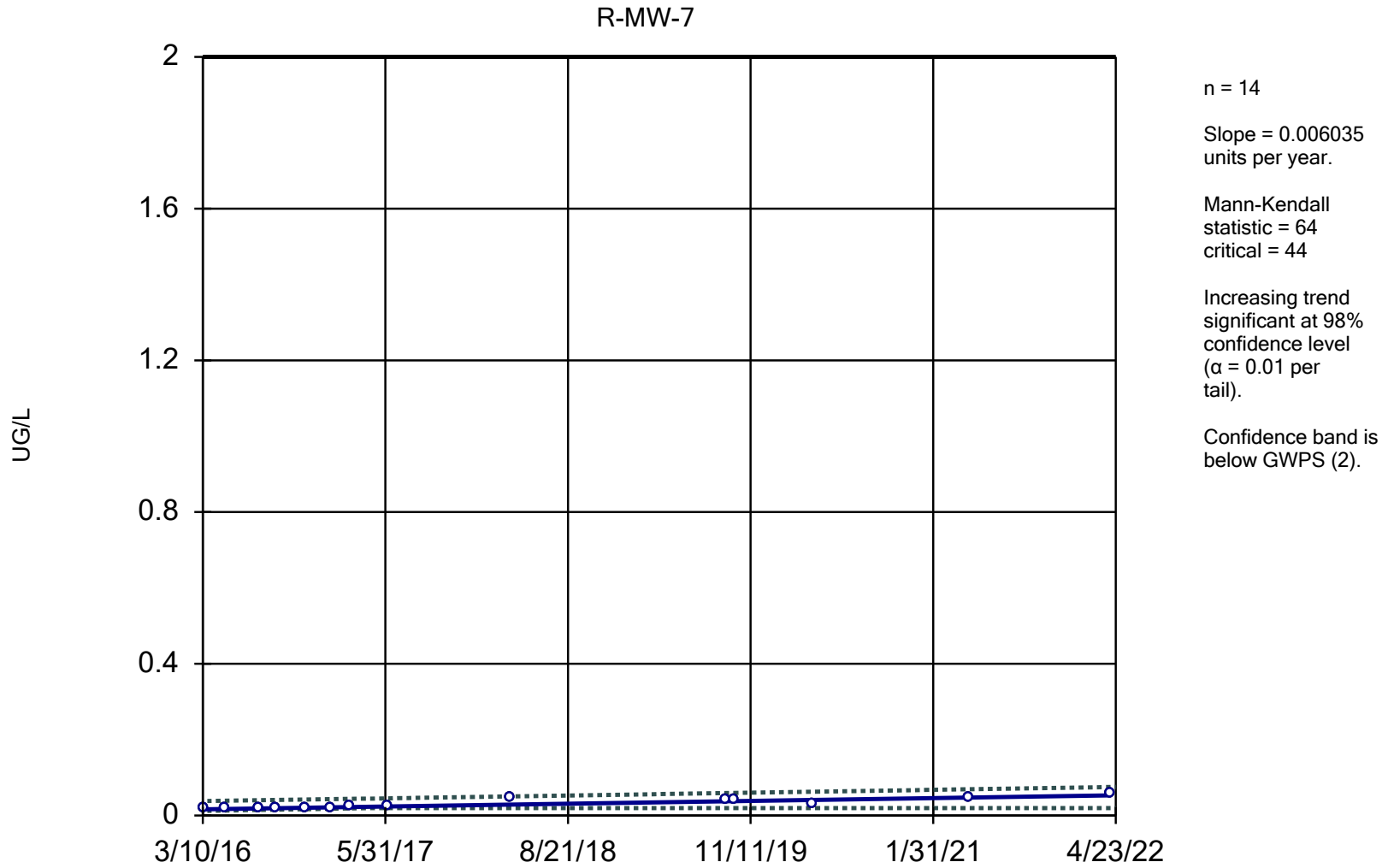
### Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

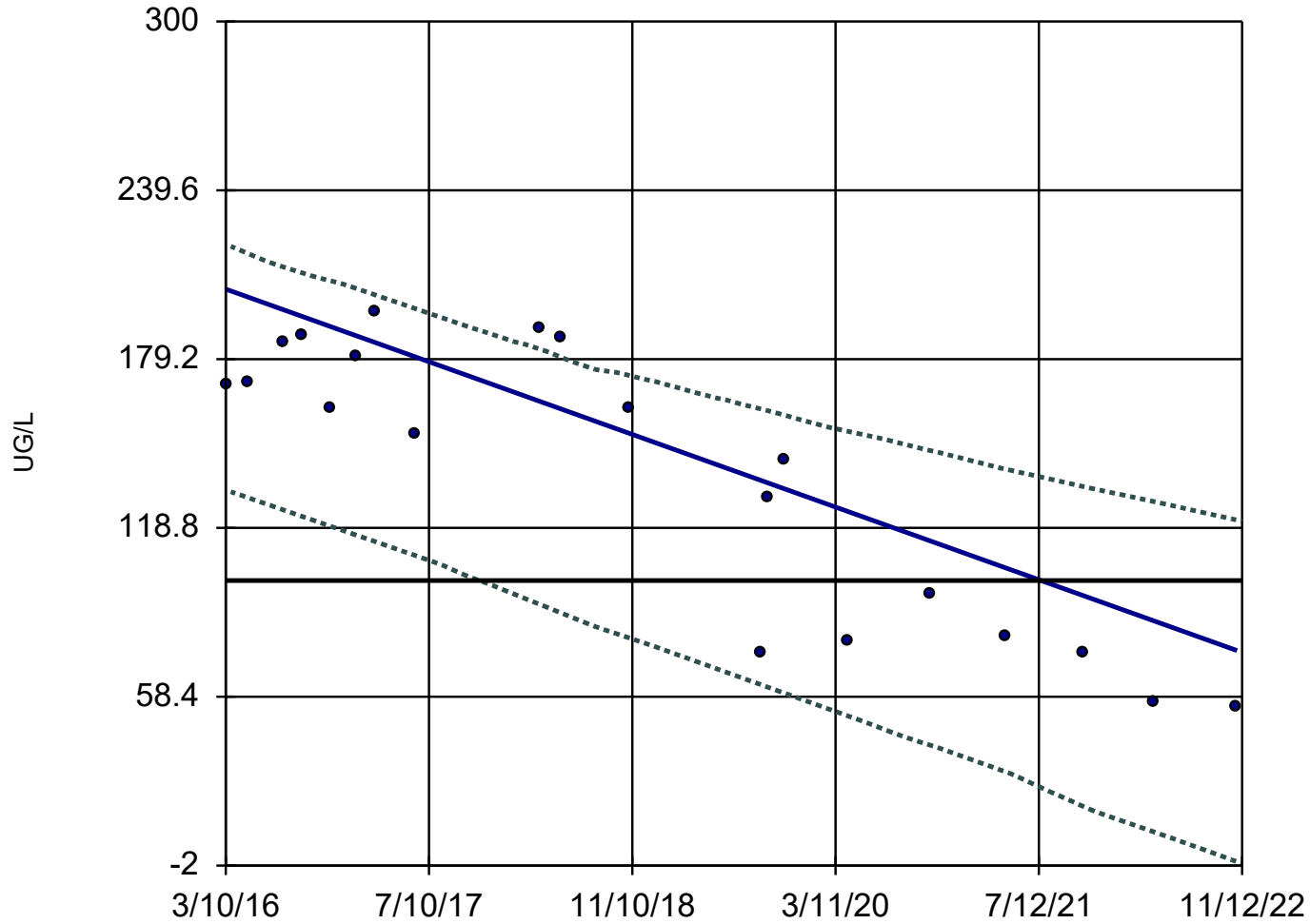
### Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring  
Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-7



n = 20

Slope = -19.46  
units per year.

Mann-Kendall  
statistic = -115  
critical = -73

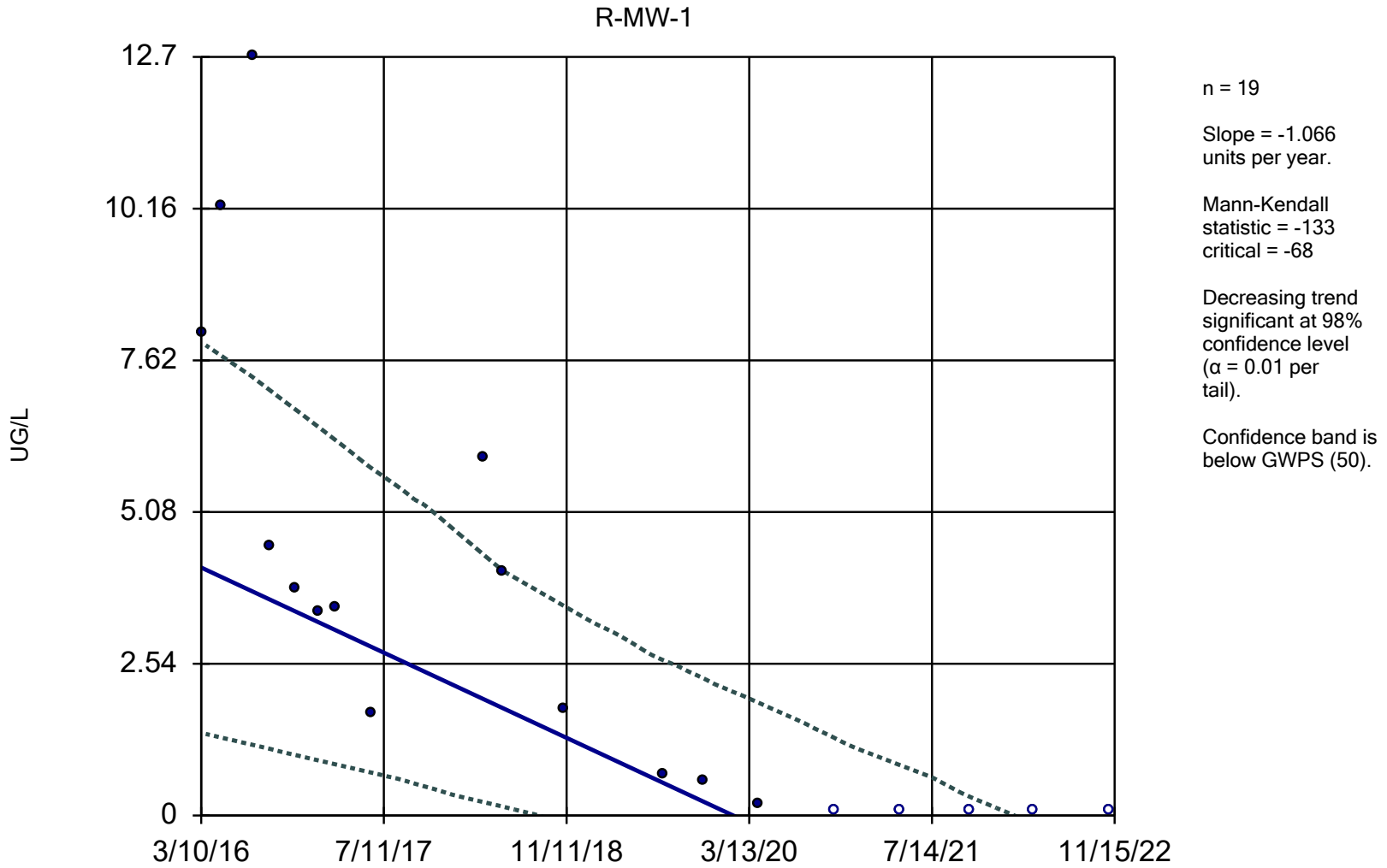
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band intersects  
GWPS (100) on 11/18/17.

Constituent: MOLYBDENUM, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band



Constituent: SELENIUM, TOTAL Analysis Run 2/7/2023 8:39 AM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

# Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/7/2023, 8:40 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
ANTIMONY, TOTAL (UG/L)	R-MW-1	-0.1093	-67	-68	No	19	15.79	n/a	n/a	0.02	NP
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-MW-2</b>	<b>-0.4424</b>	<b>-113</b>	<b>-68</b>	<b>Yes</b>	<b>19</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ANTIMONY, TOTAL (UG/L)	R-MW-3	-0.00...	-30	-68	No	19	47.37	n/a	n/a	0.02	NP
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-MW-4</b>	<b>0.00448</b>	<b>83</b>	<b>63</b>	<b>Yes</b>	<b>18</b>	<b>83.33</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-MW-5</b>	<b>0.004548</b>	<b>94</b>	<b>63</b>	<b>Yes</b>	<b>18</b>	<b>94.44</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ANTIMONY, TOTAL (UG/L)	R-MW-6	0.004103	23	68	No	19	63.16	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-7	0.004406	47	73	No	20	80	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-1	-1.183	-64	-68	No	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-2	-0.6083	-8	-68	No	19	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-3	-4.517	-25	-68	No	19	0	n/a	n/a	0.02	NP
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-MW-4</b>	<b>0.9195</b>	<b>69</b>	<b>68</b>	<b>Yes</b>	<b>19</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-MW-5</b>	<b>-0.4493</b>	<b>-116</b>	<b>-68</b>	<b>Yes</b>	<b>19</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ARSENIC, TOTAL (UG/L)	R-MW-6	0.05882	18	53	No	16	18.75	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-7	4.581	50	73	No	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-1	2.574	56	63	No	18	0	n/a	n/a	0.02	NP
<b>BARIUM, TOTAL (UG/L)</b>	<b>R-MW-2</b>	<b>-0.9983</b>	<b>-86</b>	<b>-68</b>	<b>Yes</b>	<b>19</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
BARIUM, TOTAL (UG/L)	R-MW-3	-0.1325	-3	-68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-4	7.491	56	68	No	19	0	n/a	n/a	0.02	NP
<b>BARIUM, TOTAL (UG/L)</b>	<b>R-MW-5</b>	<b>-8.28</b>	<b>-78</b>	<b>-63</b>	<b>Yes</b>	<b>18</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
BARIUM, TOTAL (UG/L)	R-MW-6	1.076	10	63	No	18	0	n/a	n/a	0.02	NP
<b>BARIUM, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>-15.05</b>	<b>-93</b>	<b>-73</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
BERYLLIUM, TOTAL (UG/L)	R-MW-1	0	-10	-44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-2	0	4	44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-3	0	10	44	No	14	92.86	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-4	0	4	44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-5	0	4	44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-6	0	10	44	No	14	92.86	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-7	0	-10	-44	No	14	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-1	0.003314	40	58	No	17	76.47	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-2	0.03274	45	58	No	17	17.65	n/a	n/a	0.02	NP
<b>CADMIUM, TOTAL (UG/L)</b>	<b>R-MW-3</b>	<b>0.03102</b>	<b>64</b>	<b>58</b>	<b>Yes</b>	<b>17</b>	<b>47.06</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
CADMIUM, TOTAL (UG/L)	R-MW-4	0.003007	44	58	No	17	76.47	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-5	0.002178	58	58	No	17	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-6	0.001491	47	53	No	16	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-7	0.003007	56	63	No	18	77.78	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-1	-0.00...	-8	-58	No	17	58.82	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-2	-0.02926	-20	-58	No	17	29.41	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-3	-0.06691	-27	-58	No	17	29.41	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-4	-0.0505	-27	-53	No	16	37.5	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-5	-0.04863	-41	-58	No	17	29.41	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-6	-0.01523	-20	-48	No	15	66.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-7	0.001241	1	63	No	18	38.89	n/a	n/a	0.02	NP
<b>COBALT, TOTAL (UG/L)</b>	<b>R-MW-1</b>	<b>0.02701</b>	<b>55</b>	<b>48</b>	<b>Yes</b>	<b>15</b>	<b>86.67</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>COBALT, TOTAL (UG/L)</b>	<b>R-MW-2</b>	<b>0.02072</b>	<b>67</b>	<b>48</b>	<b>Yes</b>	<b>15</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>COBALT, TOTAL (UG/L)</b>	<b>R-MW-3</b>	<b>0.02995</b>	<b>79</b>	<b>48</b>	<b>Yes</b>	<b>15</b>	<b>93.33</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
COBALT, TOTAL (UG/L)	R-MW-4	0.0207	41	48	No	15	80	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-5	0.006636	26	48	No	15	86.67	n/a	n/a	0.02	NP
<b>COBALT, TOTAL (UG/L)</b>	<b>R-MW-6</b>	<b>0.02311</b>	<b>48</b>	<b>44</b>	<b>Yes</b>	<b>14</b>	<b>92.86</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>COBALT, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>0.07468</b>	<b>75</b>	<b>53</b>	<b>Yes</b>	<b>16</b>	<b>75</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
FLUORIDE, TOTAL (MG/L)	R-MW-1	-0.00587	-12	-95	No	24	12.5	n/a	n/a	0.02	NP

## Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/7/2023, 8:40 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-MW-2	0.04563	71	84	No	22	0	n/a	n/a	0.02	NP
<b>FLUORIDE, TOTAL (MG/L)</b>	<b>R-MW-3</b>	<b>0.05565</b>	<b>140</b>	<b>78</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
FLUORIDE, TOTAL (MG/L)	R-MW-4	-0.01312	-50	-84	No	22	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-5	0.008119	60	78	No	21	4.762	n/a	n/a	0.02	NP
<b>FLUORIDE, TOTAL (MG/L)</b>	<b>R-MW-6</b>	<b>0.01888</b>	<b>111</b>	<b>84</b>	<b>Yes</b>	<b>22</b>	<b>4.545</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
FLUORIDE, TOTAL (MG/L)	R-MW-7	-0.00...	-30	-95	No	24	8.333	n/a	n/a	0.02	NP
<b>LEAD, TOTAL (UG/L)</b>	<b>R-MW-1</b>	<b>0.2079</b>	<b>79</b>	<b>63</b>	<b>Yes</b>	<b>18</b>	<b>94.44</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
LEAD, TOTAL (UG/L)	R-MW-2	0.523	31	63	No	18	5.556	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-3	-0.257	-30	-63	No	18	33.33	n/a	n/a	0.02	NP
<b>LEAD, TOTAL (UG/L)</b>	<b>R-MW-4</b>	<b>0.1498</b>	<b>60</b>	<b>58</b>	<b>Yes</b>	<b>17</b>	<b>94.12</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>LEAD, TOTAL (UG/L)</b>	<b>R-MW-5</b>	<b>0.1607</b>	<b>67</b>	<b>58</b>	<b>Yes</b>	<b>17</b>	<b>82.35</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
LEAD, TOTAL (UG/L)	R-MW-6	0.2019	57	58	No	17	76.47	n/a	n/a	0.02	NP
<b>LEAD, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>0.1595</b>	<b>73</b>	<b>68</b>	<b>Yes</b>	<b>19</b>	<b>89.47</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
LITHIUM, TOTAL (UG/L)	R-MW-1	0.05865	37	68	No	19	94.74	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-2	0.06046	39	68	No	19	84.21	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-3	0.1572	53	68	No	19	89.47	n/a	n/a	0.02	NP
<b>LITHIUM, TOTAL (UG/L)</b>	<b>R-MW-4</b>	<b>-1.304</b>	<b>-79</b>	<b>-68</b>	<b>Yes</b>	<b>19</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
LITHIUM, TOTAL (UG/L)	R-MW-5	0	3	68	No	19	52.63	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-6	0.1362	29	63	No	18	72.22	n/a	n/a	0.02	NP
<b>LITHIUM, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>-0.9711</b>	<b>-67</b>	<b>-58</b>	<b>Yes</b>	<b>17</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
MERCURY, TOTAL (UG/L)	R-MW-1	0.003936	37	39	No	13	92.31	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-2	0.003932	37	39	No	13	92.31	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-3	0.003932	37	39	No	13	92.31	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-4	0.003938	37	39	No	13	92.31	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-5	0.003938	37	39	No	13	92.31	n/a	n/a	0.02	NP
<b>MERCURY, TOTAL (UG/L)</b>	<b>R-MW-6</b>	<b>0.003866</b>	<b>42</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>MERCURY, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>0.006035</b>	<b>64</b>	<b>44</b>	<b>Yes</b>	<b>14</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
MOLYBDENUM, TOTAL (UG/L)	R-MW-1	2.072	17	68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-2	-6.006	-35	-63	No	18	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-3	11.41	27	68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-4	-4.219	-51	-68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-5	0.03028	23	68	No	19	78.95	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-6	0.08315	12	68	No	19	42.11	n/a	n/a	0.02	NP
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>-19.46</b>	<b>-115</b>	<b>-73</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
RADIUM [226 + 228] (PCI/L)	R-MW-1	0.005353	4	68	No	19	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-2	0.08675	55	63	No	18	94.44	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-3	0.02101	43	68	No	19	94.74	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-4	0.008209	10	68	No	19	84.21	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-5	0.01074	13	68	No	19	78.95	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-6	0.009897	7	68	No	19	73.68	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-7	0.02513	42	73	No	20	90	n/a	n/a	0.02	NP
<b>SELENIUM, TOTAL (UG/L)</b>	<b>R-MW-1</b>	<b>-1.066</b>	<b>-133</b>	<b>-68</b>	<b>Yes</b>	<b>19</b>	<b>26.32</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
SELENIUM, TOTAL (UG/L)	R-MW-2	0.03568	14	68	No	19	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-3	-0.01117	-18	-63	No	18	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-4	0	-15	-68	No	19	63.16	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-5	0	-8	-68	No	19	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-6	-0.00...	-12	-63	No	18	16.67	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-7	0	6	73	No	20	80	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-1	-0.03127	-37	-44	No	14	92.86	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-2	-0.0073	-29	-48	No	15	100	n/a	n/a	0.02	NP



# Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/7/2023, 8:40 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
THALLIUM, TOTAL (UG/L)	R-MW-3	-0.02869	-27	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-4	-0.02869	-27	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-5	-0.02869	-27	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-6	-0.03056	-37	-44	No	14	92.86	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-7	-0.02872	-39	-48	No	15	93.33	n/a	n/a	0.02	NP

# Appendix C

## April 2023 Assessment Monitoring Statistical Evaluation



# Memorandum

August 22, 2023

---

**To:** Lisa Meyer – Ameren Missouri **Project Number:** 23008

**CC:** Ameren Missouri - Susan Knowles, Craig Giesmann, Charlie Henderson, Bill Kutosky

**From:** Rocksmith Geoengineering - Mark Haddock, P.E., Jeff Ingram, R.G., Grant Morey **Email:** Jeff.Ingram@Rocksmithgeo.com

**RE:** **Assessment Monitoring Statistical Evaluation, RCPA Surface Impoundment Rush Island Energy Center, Jefferson County, Missouri**

---

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation for the April 2023 sampling event at the RCPA Surface Impoundment at the Rush Island Energy Center located in Jefferson County, Missouri. Included in the memorandum is a brief summary of constituents that are present at a Statistically Significant Level (SSL), a list of site-specific Groundwater Protection Standards (**Table 1**), and the Sanitas Technologies™ (Sanitas) statistical software output for each of the Appendix IV parameters (**Appendix A and Appendix B**).

The Appendix IV constituents were evaluated for SSLs using the methods and procedures outlined in the Statistical Analysis Plan (SAP). In addition to outliers noted in previous statistical evaluations, the following outliers were removed prior to the calculation of confidence limits:

- Cadmium
  - R-MW-1 at 0.24 J micrograms per liter ( $\mu\text{g/L}$ ) on 10/26/2020: Result is statistically higher than other results at the same well. The high result is not consistent with previous or subsequent cadmium results at the well and is an outlier.
- Fluoride
  - R-MW-6 at 0.45 milligrams per liter ( $\text{mg/L}$ ) on 1/7/2021: Result is statistically higher than other results at the same well. The high result is not consistent with previous or subsequent fluoride results at the well and is an outlier.
- Lead
  - R-MW-7 at Non-Detect ( $<0.13 \mu\text{g/L}$ ) on 11/11/2019: Result is statistically lower than other results at the same well. The result has a lower method detection limit (MDL) than other non-detect lead results at the well and is an outlier.

An analysis of the outliers removed from the dataset to-date was completed. No previously identified outliers were added back into the dataset prior to the calculation of confidence limits in **Appendix A and Appendix B**.

Based on the results from the confidence interval and trend analysis, no new SSLs were noted. SSLs at the RCPA Surface Impoundment as of April 2023 continue to be:

- Arsenic at R-MW-2, R-MW-3, and R-MW-7/R-MW-7(R)
- Molybdenum at R-MW-2 and R-MW-3

## Closing

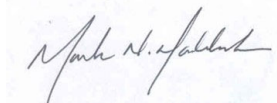
Rocksmith Appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please contact the undersigned.

Sincerely,

**Rocksmith Geoengineering, LLC**



Jeff Ingram, R.G.  
*Senior Geologist, Partner*



Mark Haddock, P.E., R.G.  
*Principal Engineer, Senior Partner*

## Attachments

### Tables

Table 1 – RCPA Groundwater Protection Standards

### Appendices

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

## Tables

**Table 1 - RCPA Groundwater Protection Standards  
RCPA Surface Impoundment  
Rush Island Energy Center**

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring <sup>6</sup>
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	30	30
Barium	µg/L	2000	2000	548.6
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	2.363
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.2896
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	64.7	64.7
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.297
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:

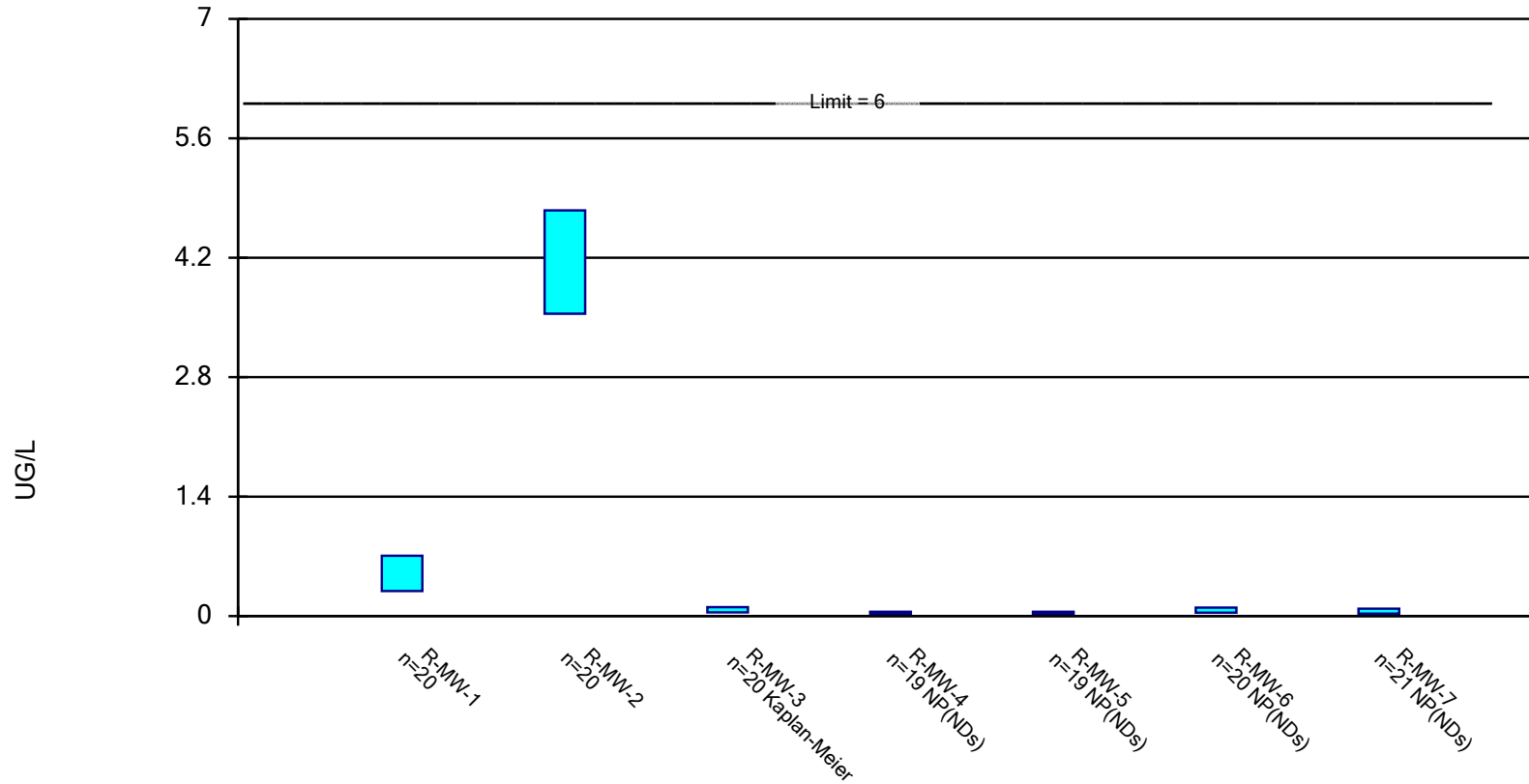
1. µg/L - micrograms per liter
2. mg/L - milligrams per liter
3. pCi/L - picocuries per liter
4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) 2012 Edition of the Drinking Water Standards and Health Advisories. Updated January 9, 2023 at <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>.
5. Health Based Groundwater Protection Standards (GWPS) were adopted for Appendix IV parameters without an MCL (i.e. cobalt, lithium, molybdenum, and lead). Information available at <https://www.epa.gov/coalash/coal-ash-rule>.
6. Values were calculated using statistical methods outlined for Detection Monitoring and are used for returning to Detection Monitoring based on available data to date.
7. DQR - Double Quantification Rule. If all baseline data are less than the Practical Quantitation Limit (PQL), then the DQR will be used. More information on the DQR is provided in the Statistical Analysis Plan.
8. Site GWPS is either the MCL/Health Based GWPS or based on background levels (calculated as described in the Statistical Analysis Plan for Assessment Monitoring), whichever is higher.
9. GWPS and background values calculated using results up through April 2023 from monitoring wells MW-B1 and MW-B2.

# Appendix A

## Sanitas Confidence Interval Statistical Output

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



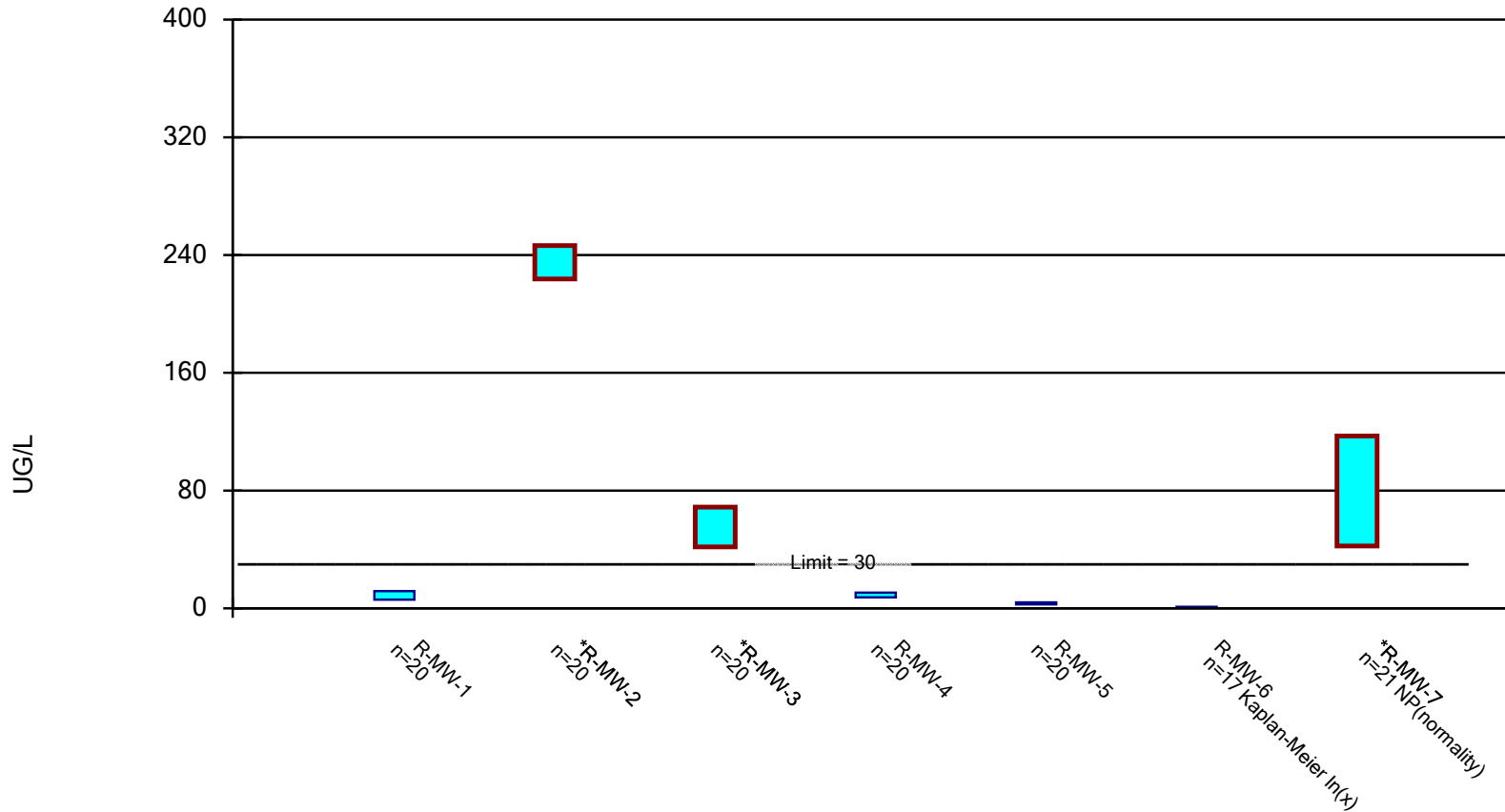
Constituent: ANTIMONY, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



## Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

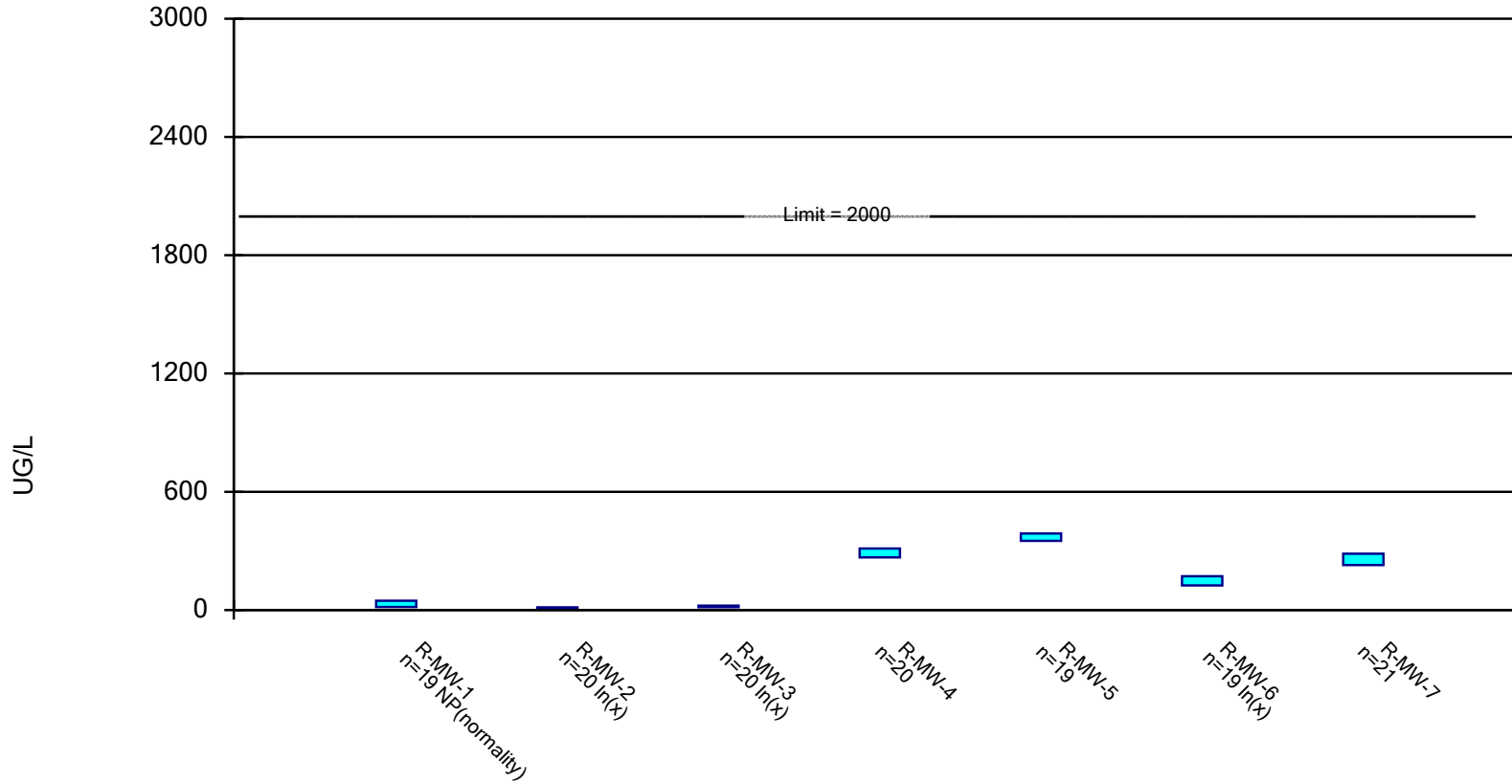


Constituent: ARSENIC, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

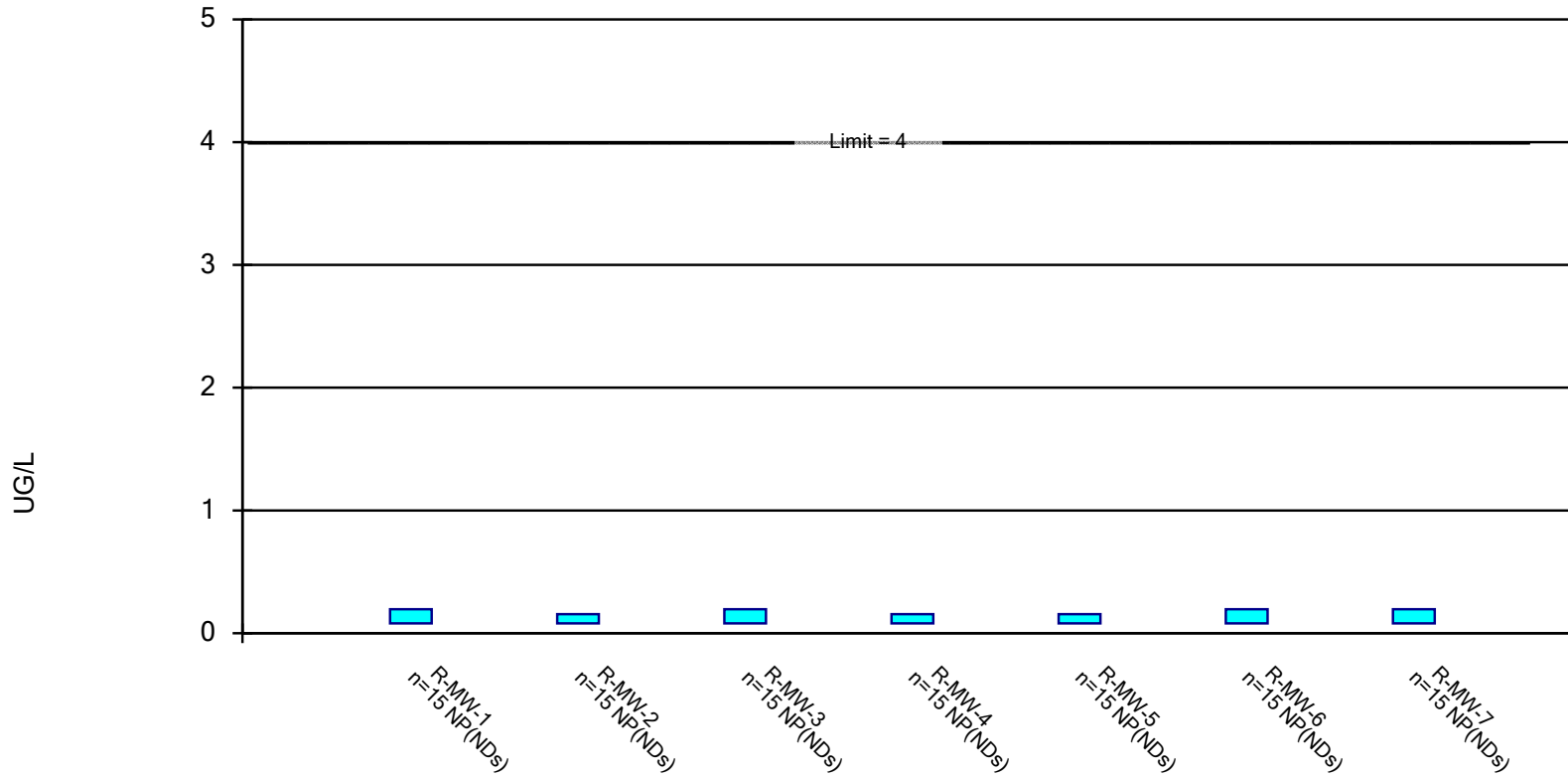


Constituent: BARIUM, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

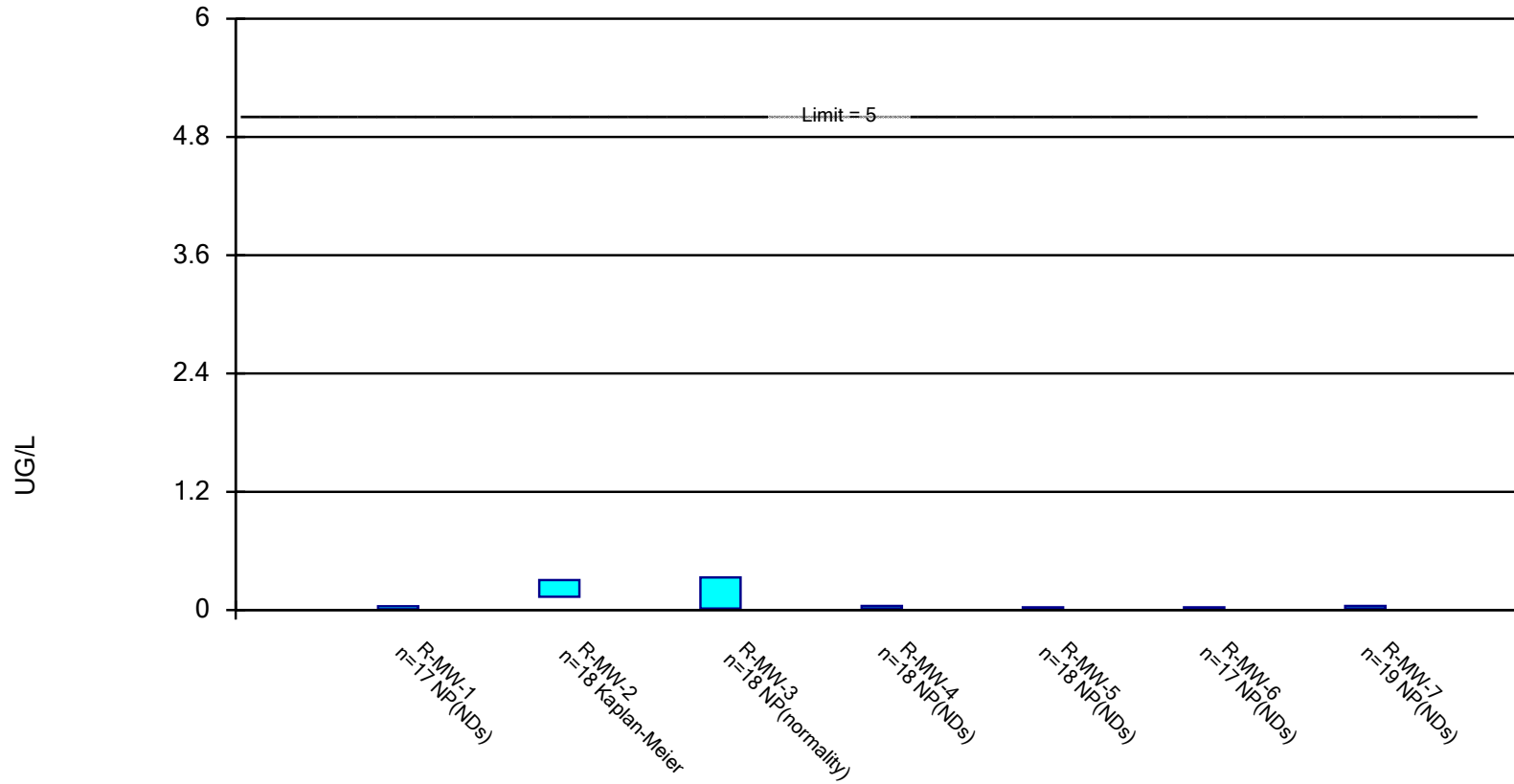


Constituent: BERYLLIUM, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

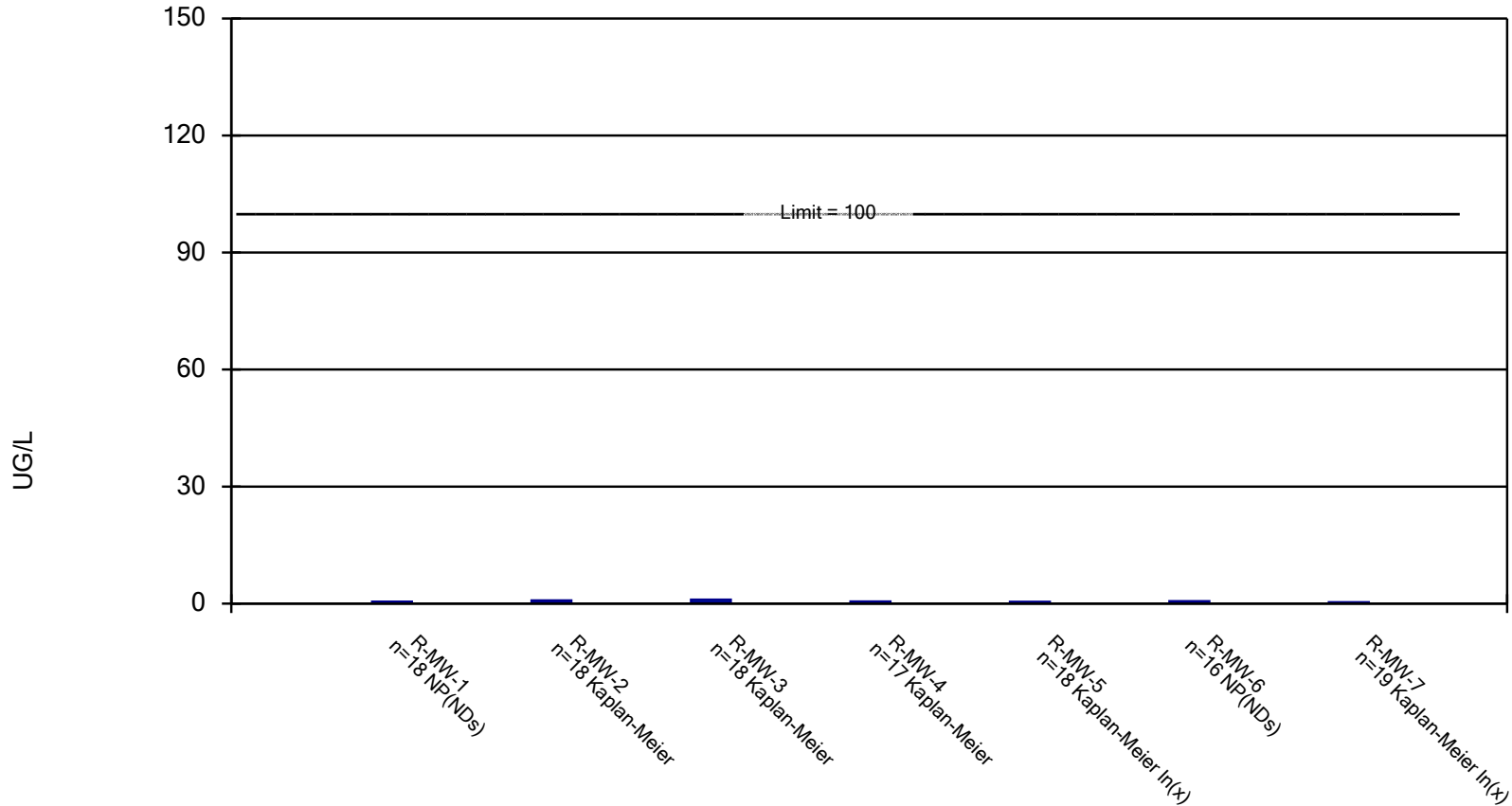


Constituent: CADMIUM, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

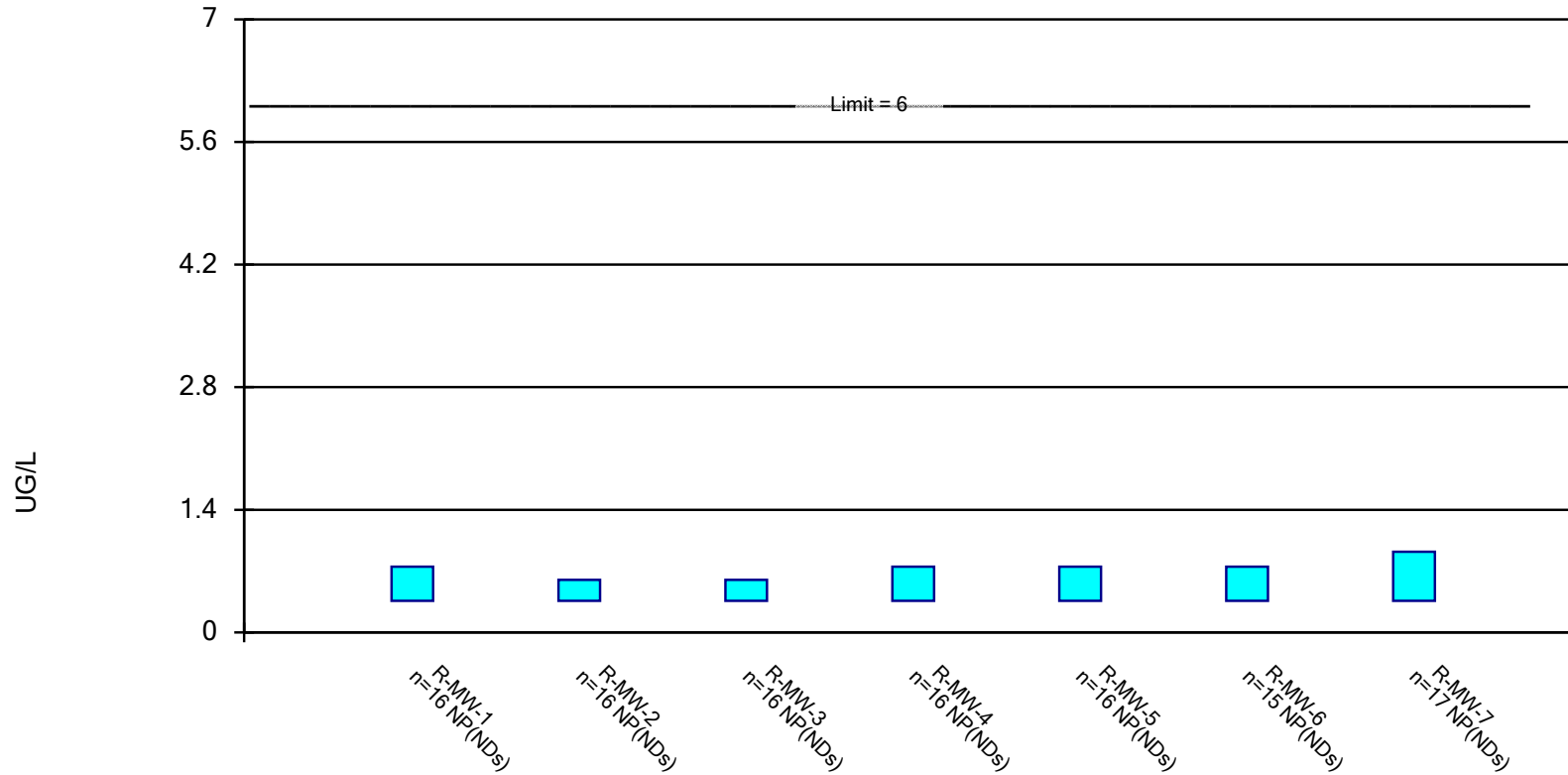


Constituent: CHROMIUM, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

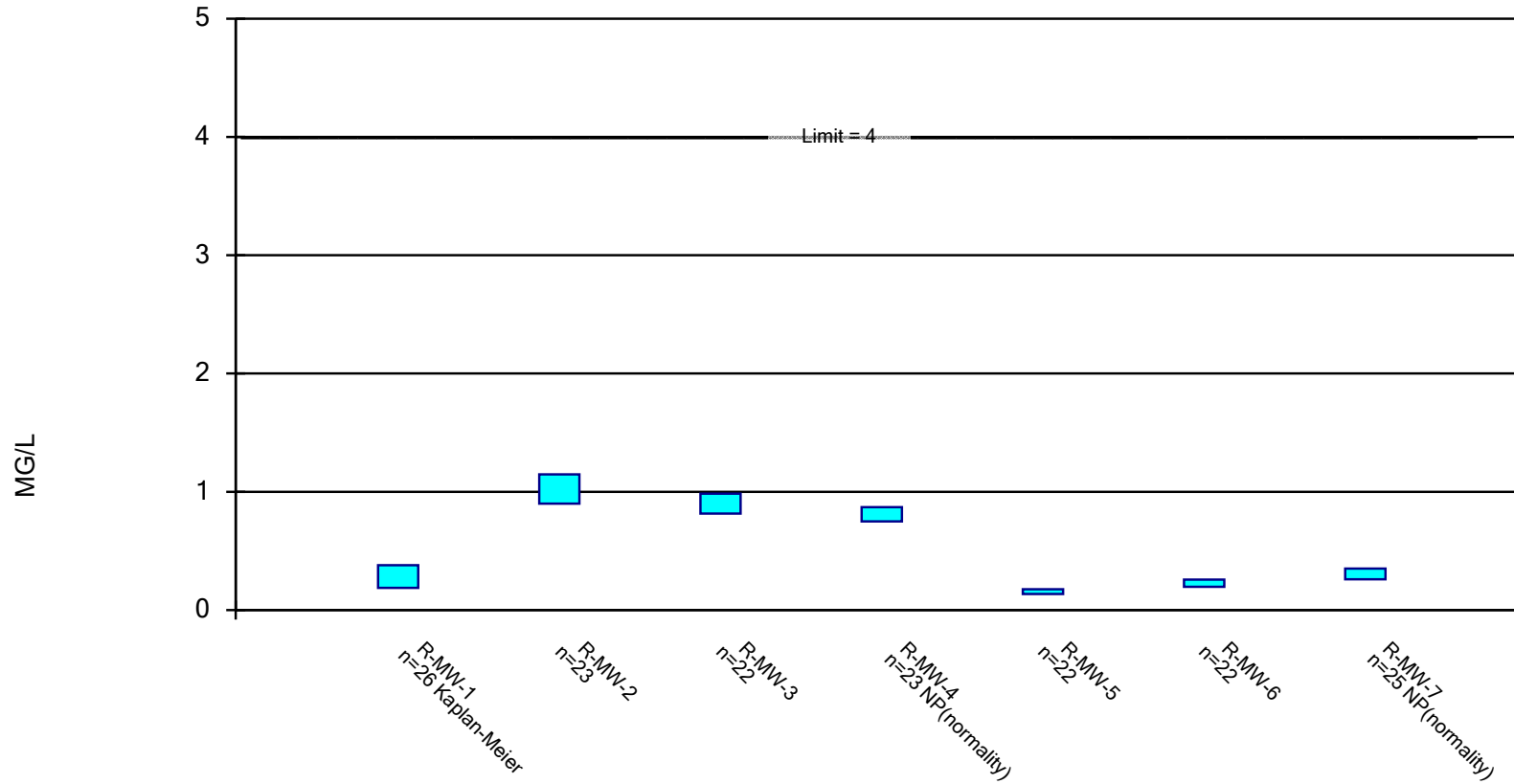


Constituent: COBALT, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

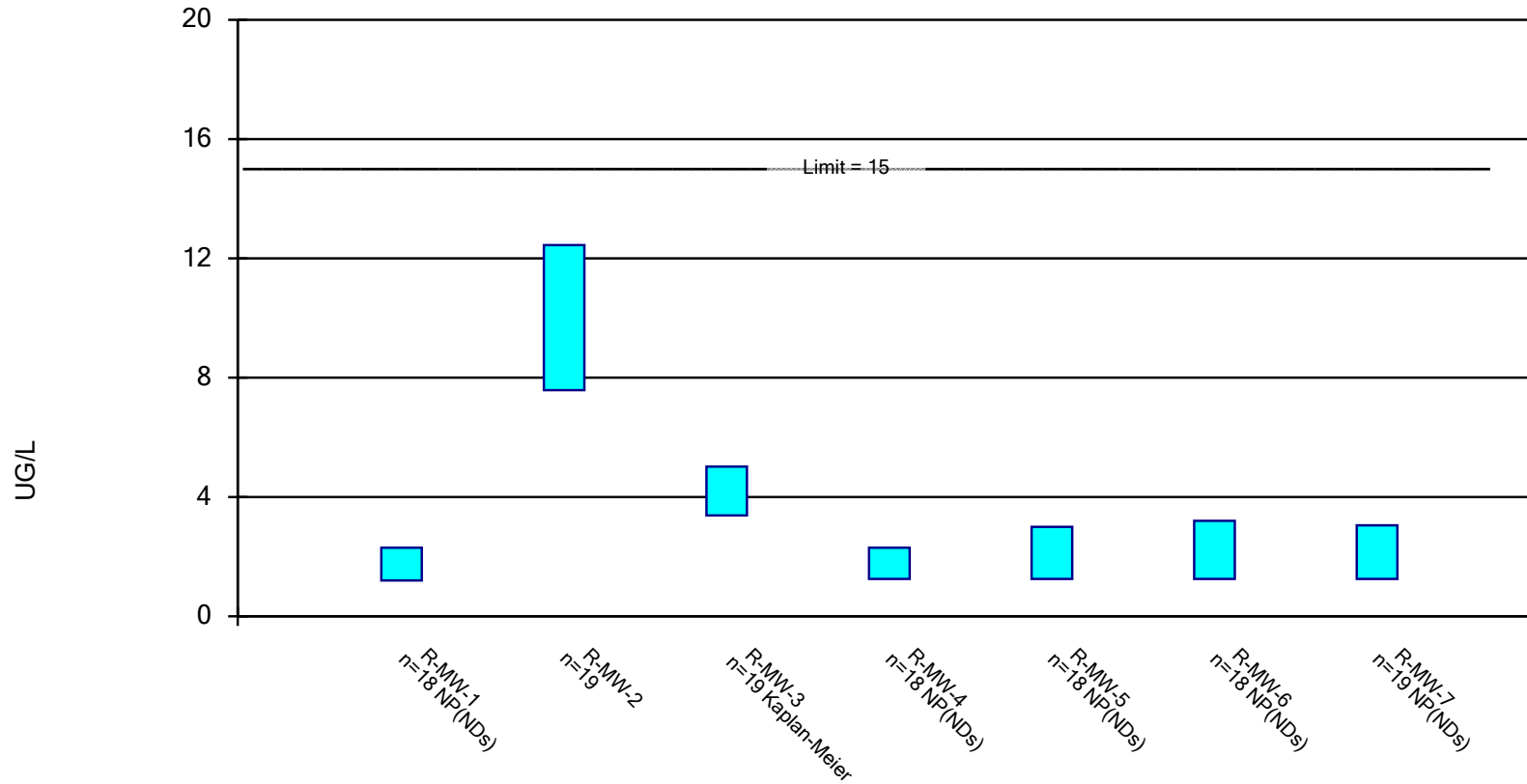


Constituent: FLUORIDE, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



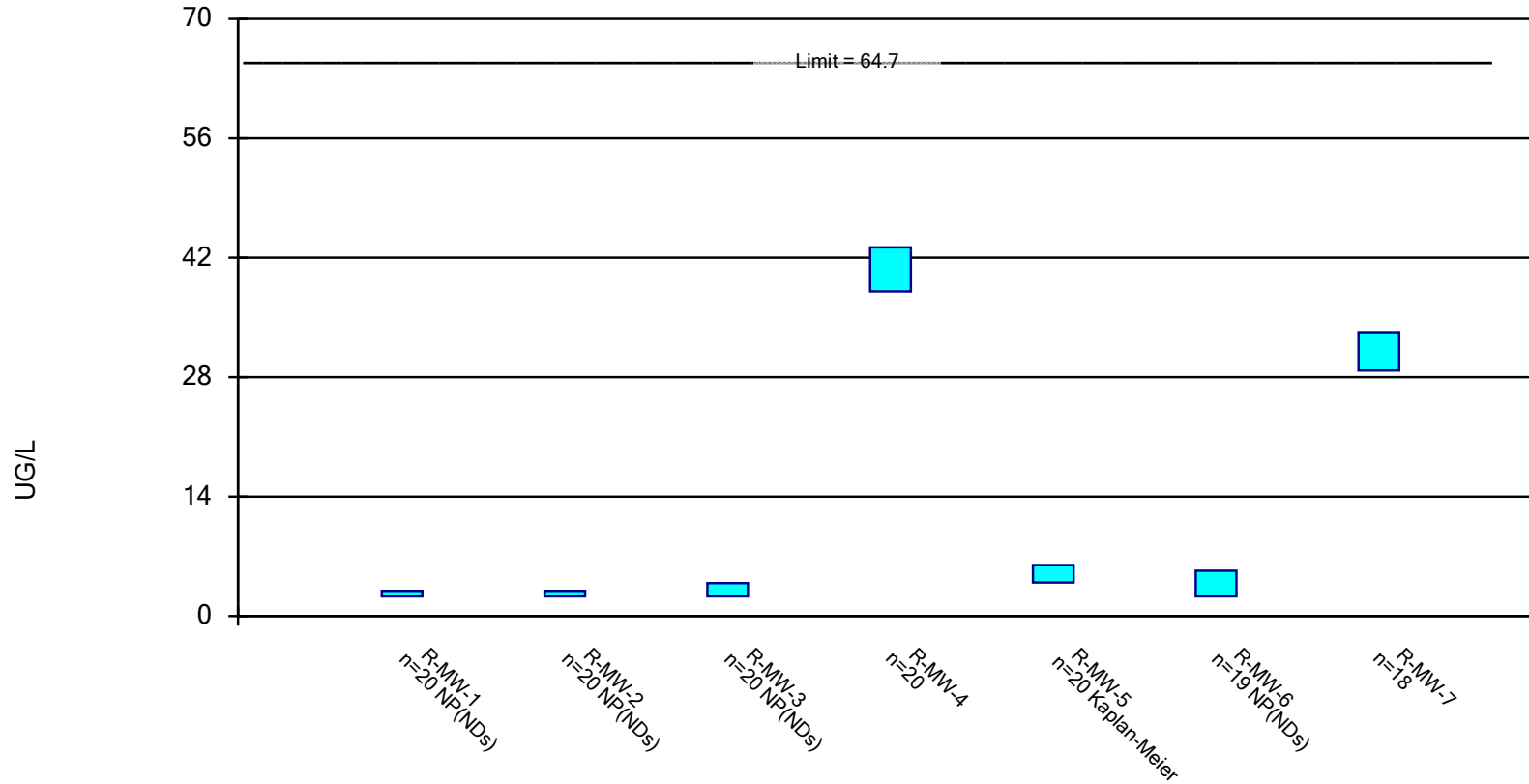
Constituent: LEAD, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

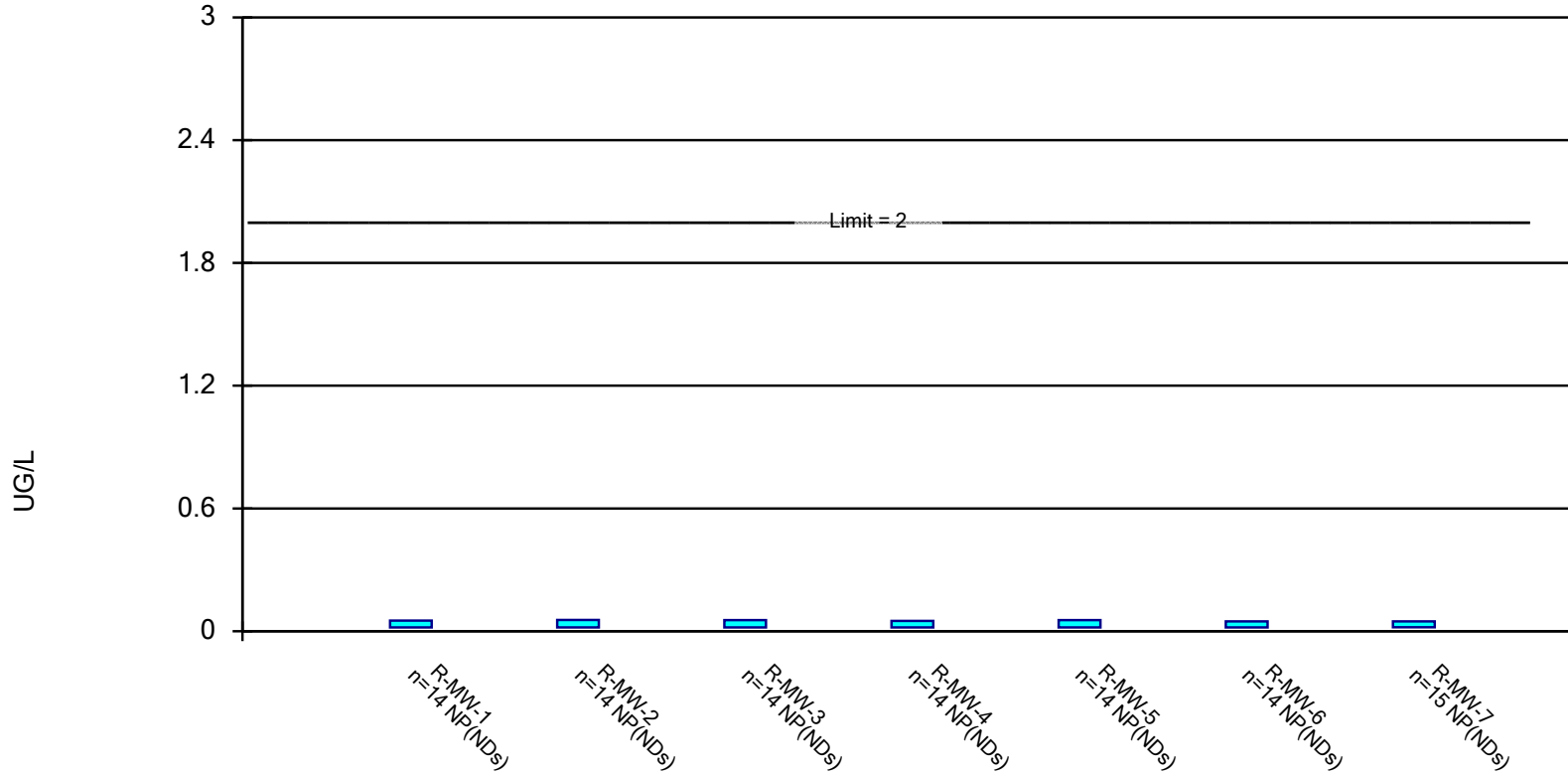


Constituent: LITHIUM, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

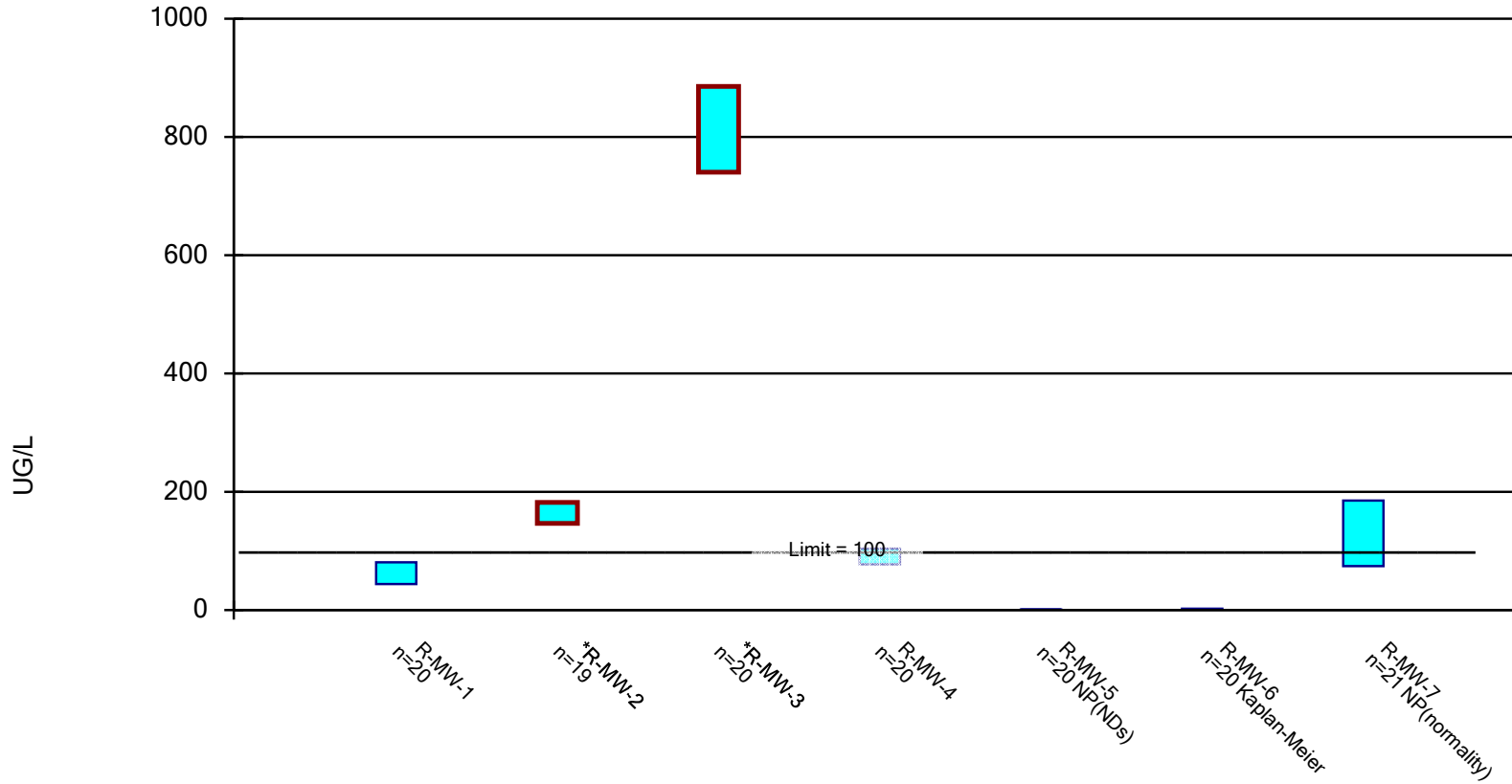


Constituent: MERCURY, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

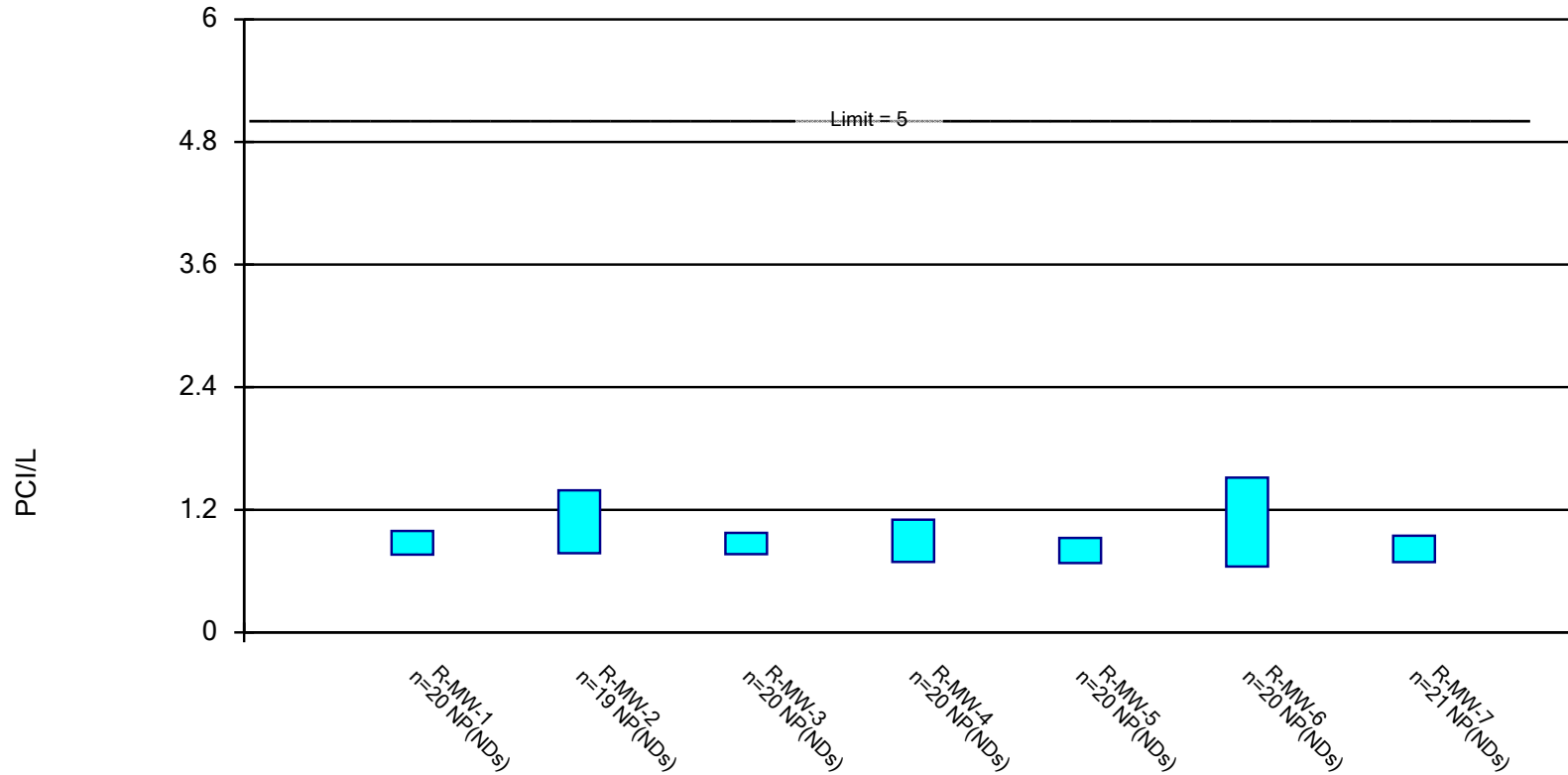


Constituent: MOLYBDENUM, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

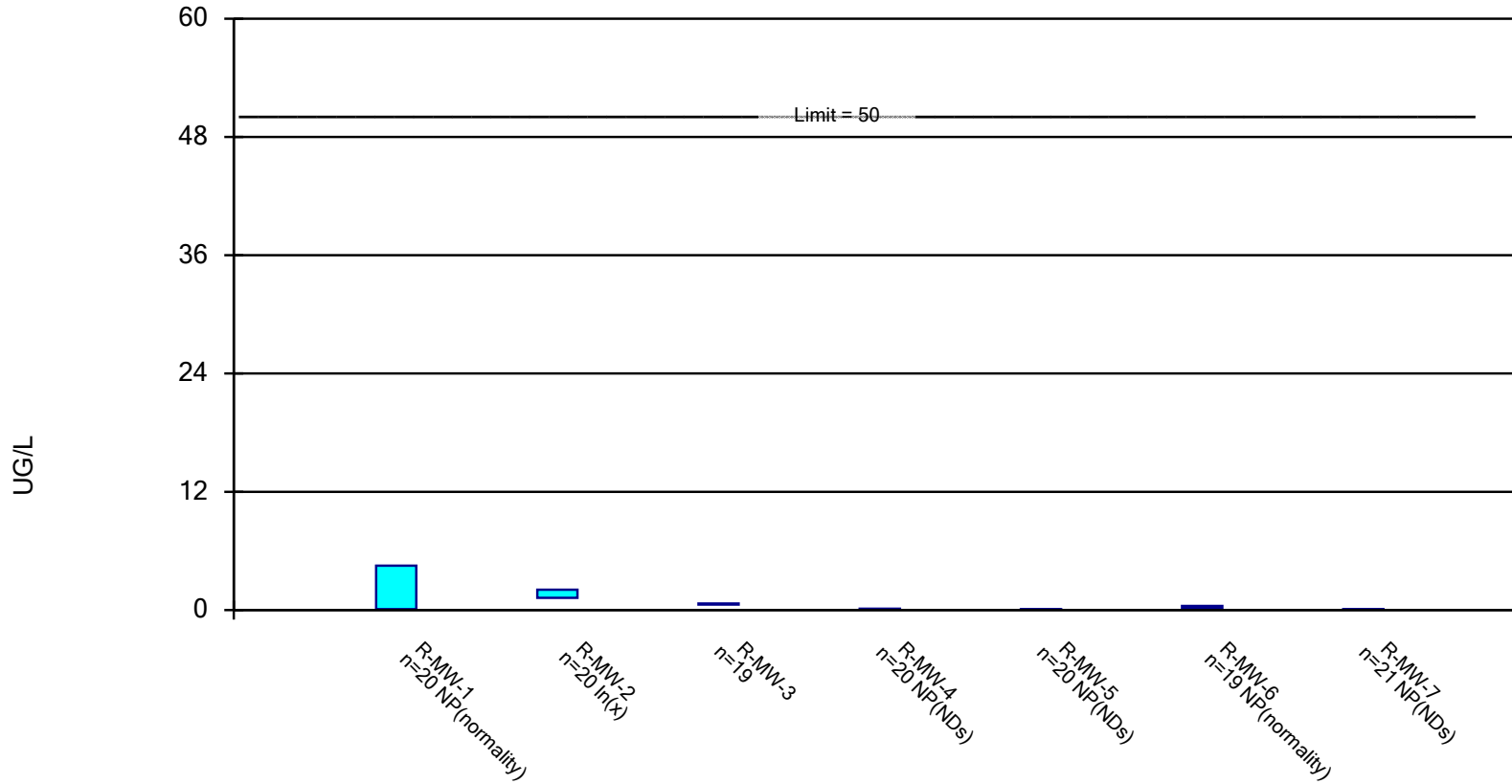


Constituent: RADIUM [226 + 228] Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

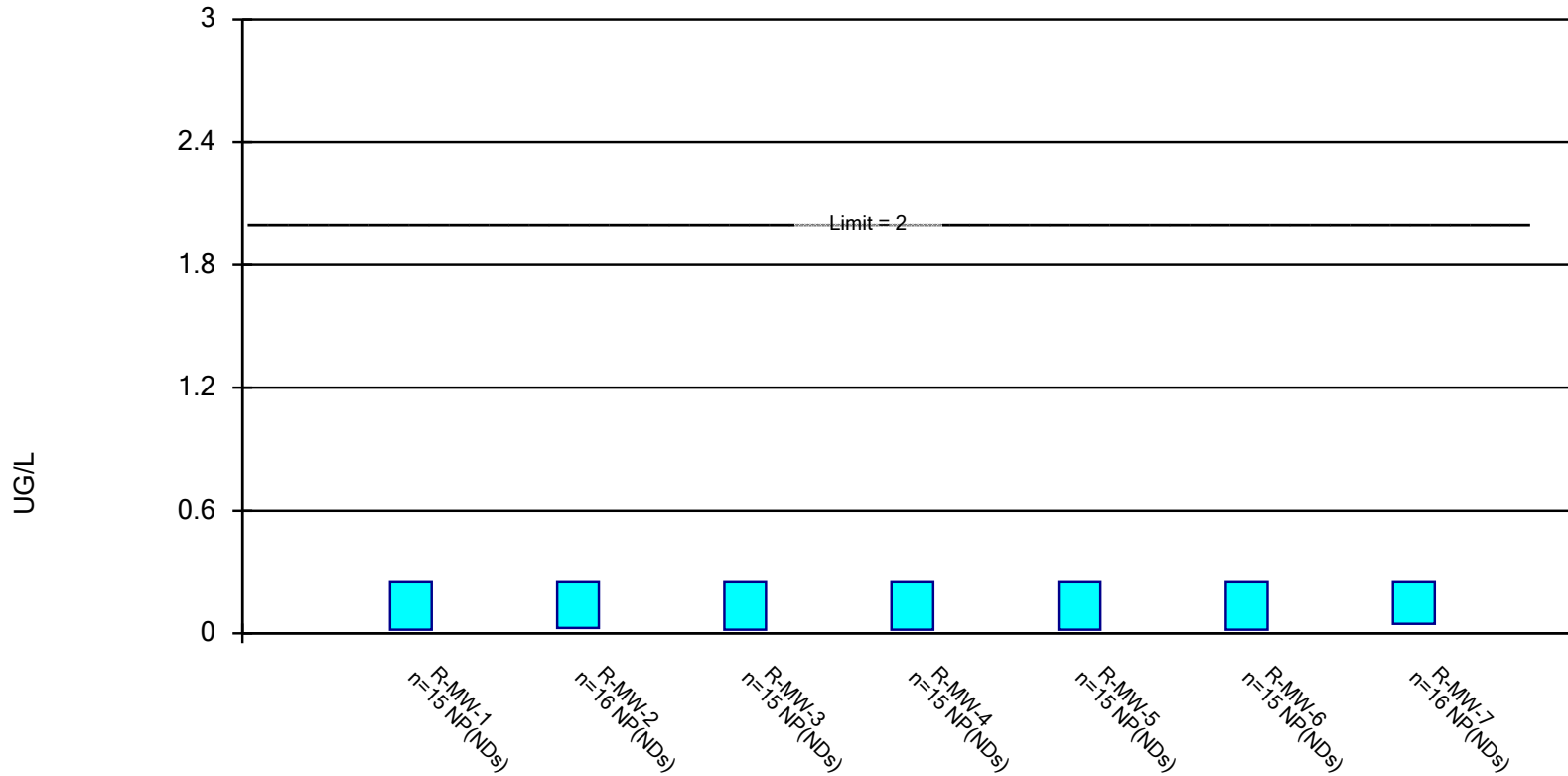


Constituent: SELENIUM, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: THALLIUM, TOTAL Analysis Run 7/19/2023 1:13 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

# Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/19/2023, 1:16 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	R-MW-1	0.7059	0.2927	6	No	20	15	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-2	4.756	3.544	6	No	20	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-3	0.1048	0.04265	6	No	20	50	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-4	0.05	0.029	6	No	19	84.21	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-5	0.05	0.0275	6	No	19	94.74	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-6	0.1	0.039	6	No	20	65	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-7	0.086	0.029	6	No	21	80.95	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	R-MW-1	11.73	5.911	30	No	20	0	No	0.01	Param.
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-MW-2</b>	<b>246.4</b>	<b>223.8</b>	<b>30</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-MW-3</b>	<b>68.79</b>	<b>41.77</b>	<b>30</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
ARSENIC, TOTAL (UG/L)	R-MW-4	10.63	7.472	30	No	20	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-5	3.99	2.65	30	No	20	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-6	1.018	0.2309	30	No	17	17.65	ln(x)	0.01	Param.
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>117</b>	<b>42.3</b>	<b>30</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>NP (normality)</b>
BARIUM, TOTAL (UG/L)	R-MW-1	47.3	15.5	2000	No	19	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-2	13.68	9.91	2000	No	20	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-3	22.21	14.62	2000	No	20	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-4	312.1	266.9	2000	No	20	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-5	388.5	351.1	2000	No	19	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-6	171.3	124.5	2000	No	19	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-7	285.8	228.1	2000	No	21	0	No	0.01	Param.
BERYLLIUM, TOTAL (UG/L)	R-MW-1	0.195	0.08	4	No	15	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-2	0.155	0.08	4	No	15	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-3	0.195	0.08	4	No	15	93.33	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-4	0.155	0.08	4	No	15	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-5	0.155	0.08	4	No	15	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-6	0.195	0.08	4	No	15	93.33	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-7	0.195	0.08	4	No	15	93.33	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-1	0.039	0.009	5	No	17	82.35	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-2	0.304	0.1345	5	No	18	16.67	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-MW-3	0.33	0.0145	5	No	18	44.44	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	R-MW-4	0.041	0.0145	5	No	18	77.78	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-5	0.028	0.0145	5	No	18	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-6	0.028	0.009	5	No	17	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-7	0.041	0.0145	5	No	19	78.95	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-1	0.5	0.08	100	No	18	55.56	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-2	0.8081	0.3764	100	No	18	27.78	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-3	0.9859	0.3717	100	No	18	27.78	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-4	0.5444	0.2043	100	No	17	35.29	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-5	0.4637	0.1546	100	No	18	27.78	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-6	0.6	0.039	100	No	16	62.5	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-7	0.3504	0.1234	100	No	19	42.11	ln(x)	0.01	Param.
COBALT, TOTAL (UG/L)	R-MW-1	0.75	0.36	6	No	16	87.5	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-2	0.6	0.36	6	No	16	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-3	0.6	0.36	6	No	16	93.75	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-4	0.75	0.36	6	No	16	81.25	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-5	0.75	0.36	6	No	16	87.5	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-6	0.75	0.36	6	No	15	93.33	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-7	0.92	0.36	6	No	17	76.47	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	R-MW-1	0.3797	0.1868	4	No	26	15.38	No	0.01	Param.

## Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/19/2023, 1:16 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-MW-2	1.147	0.9002	4	No	23	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-3	0.9844	0.8156	4	No	22	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-4	0.87	0.75	4	No	23	0	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-MW-5	0.1753	0.1361	4	No	22	4.545	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-6	0.258	0.1961	4	No	22	4.545	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-7	0.35	0.26	4	No	25	12	No	0.01	NP (normality)
LEAD, TOTAL (UG/L)	R-MW-1	2.3	1.2	15	No	18	100	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-2	12.44	7.581	15	No	19	5.263	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-3	5.019	3.381	15	No	19	36.84	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-4	2.3	1.25	15	No	18	94.44	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-5	3	1.25	15	No	18	83.33	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-6	3.2	1.25	15	No	18	77.78	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-7	3.05	1.25	15	No	19	89.47	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-1	2.95	2.3	64.7	No	20	95	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-2	2.95	2.3	64.7	No	20	85	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-3	3.85	2.3	64.7	No	20	85	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-4	43.22	38.05	64.7	No	20	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-MW-5	5.98	3.929	64.7	No	20	50	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-MW-6	5.3	2.3	64.7	No	19	73.68	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-7	33.28	28.78	64.7	No	18	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	R-MW-1	0.052	0.0185	2	No	14	92.86	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-2	0.055	0.0185	2	No	14	92.86	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-3	0.054	0.0185	2	No	14	92.86	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-4	0.05	0.0185	2	No	14	92.86	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-5	0.054	0.0185	2	No	14	92.86	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-6	0.048	0.0185	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-7	0.048	0.0195	2	No	15	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-MW-1	80.77	44.02	100	No	20	0	No	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-MW-2</b>	<b>182.1</b>	<b>146.5</b>	<b>100</b>	<b>Yes</b>	<b>19</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-MW-3</b>	<b>885.6</b>	<b>740.5</b>	<b>100</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
MOLYBDENUM, TOTAL (UG/L)	R-MW-4	103.7	77.27	100	No	20	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-5	1.1	0.45	100	No	20	80	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-MW-6	2.226	0.8616	100	No	20	40	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-7	185	74.4	100	No	21	0	No	0.01	NP (normality)
RADIUM [226 + 228] (PCI/L)	R-MW-1	0.992	0.7615	5	No	20	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-2	1.39	0.7745	5	No	19	94.74	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-3	0.9735	0.765	5	No	20	95	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-4	1.103	0.689	5	No	20	85	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-5	0.925	0.679	5	No	20	80	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-6	1.515	0.645	5	No	20	75	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-7	0.9465	0.688	5	No	21	90.48	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-1	4.5	0.09	50	No	20	30	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	R-MW-2	2.067	1.233	50	No	20	0	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-3	0.6691	0.552	50	No	19	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-4	0.13	0.09	50	No	20	65	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-5	0.09	0.043	50	No	20	100	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-6	0.42	0.22	50	No	19	15.79	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	R-MW-7	0.097	0.06	50	No	21	80.95	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-1	0.25	0.018	2	No	15	93.33	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-2	0.25	0.026	2	No	16	100	No	0.01	NP (NDs)



# Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/19/2023, 1:16 PM

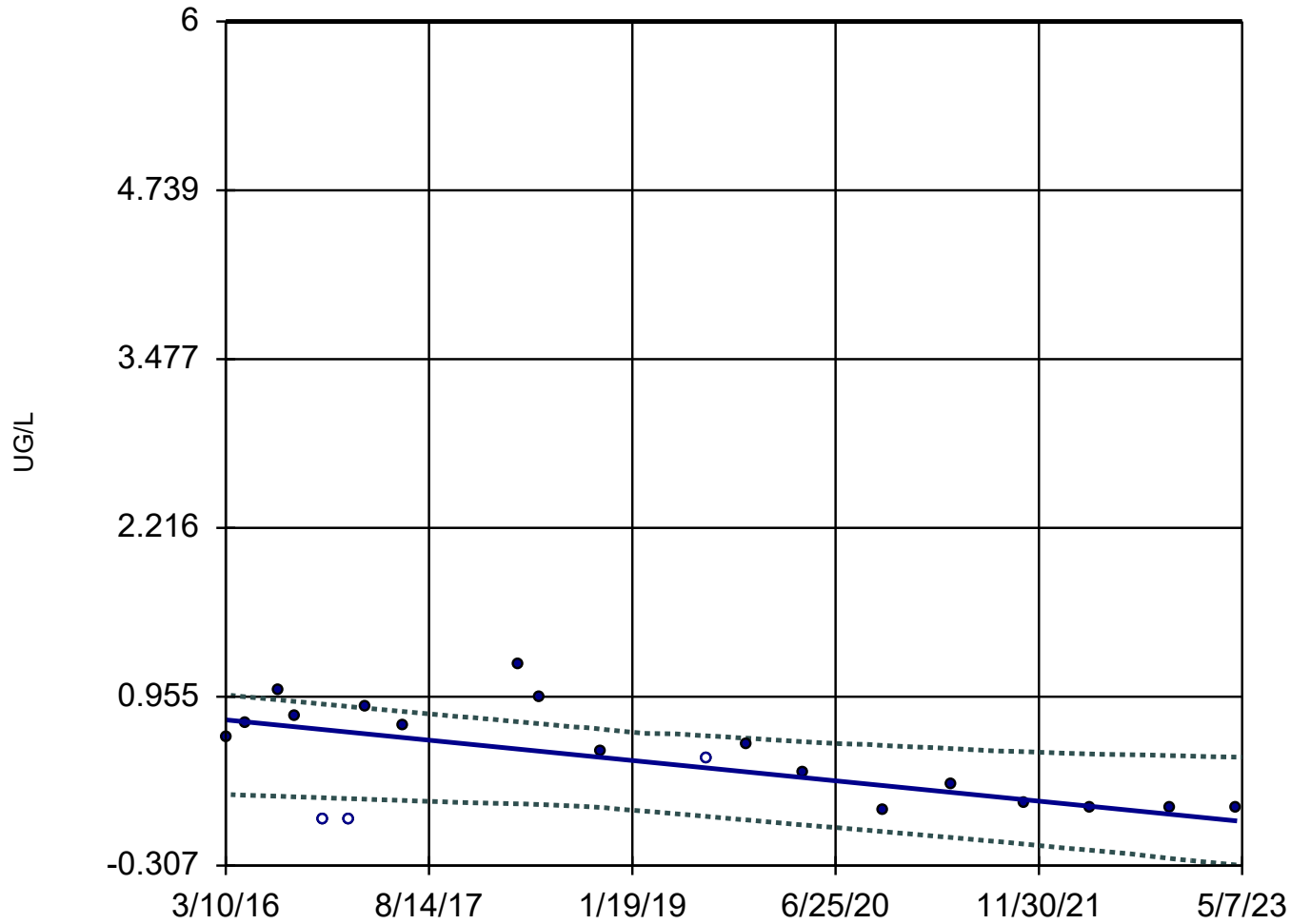
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
THALLIUM, TOTAL (UG/L)	R-MW-3	0.25	0.018	2	No	15	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-4	0.25	0.018	2	No	15	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-5	0.25	0.018	2	No	15	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-6	0.25	0.018	2	No	15	93.33	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-7	0.25	0.0465	2	No	16	93.75	No	0.01	NP (NDs)

## Appendix B

# Sanitas Trending Confidence Bands Statistical Output

### Sen's Slope and 95% Confidence Band

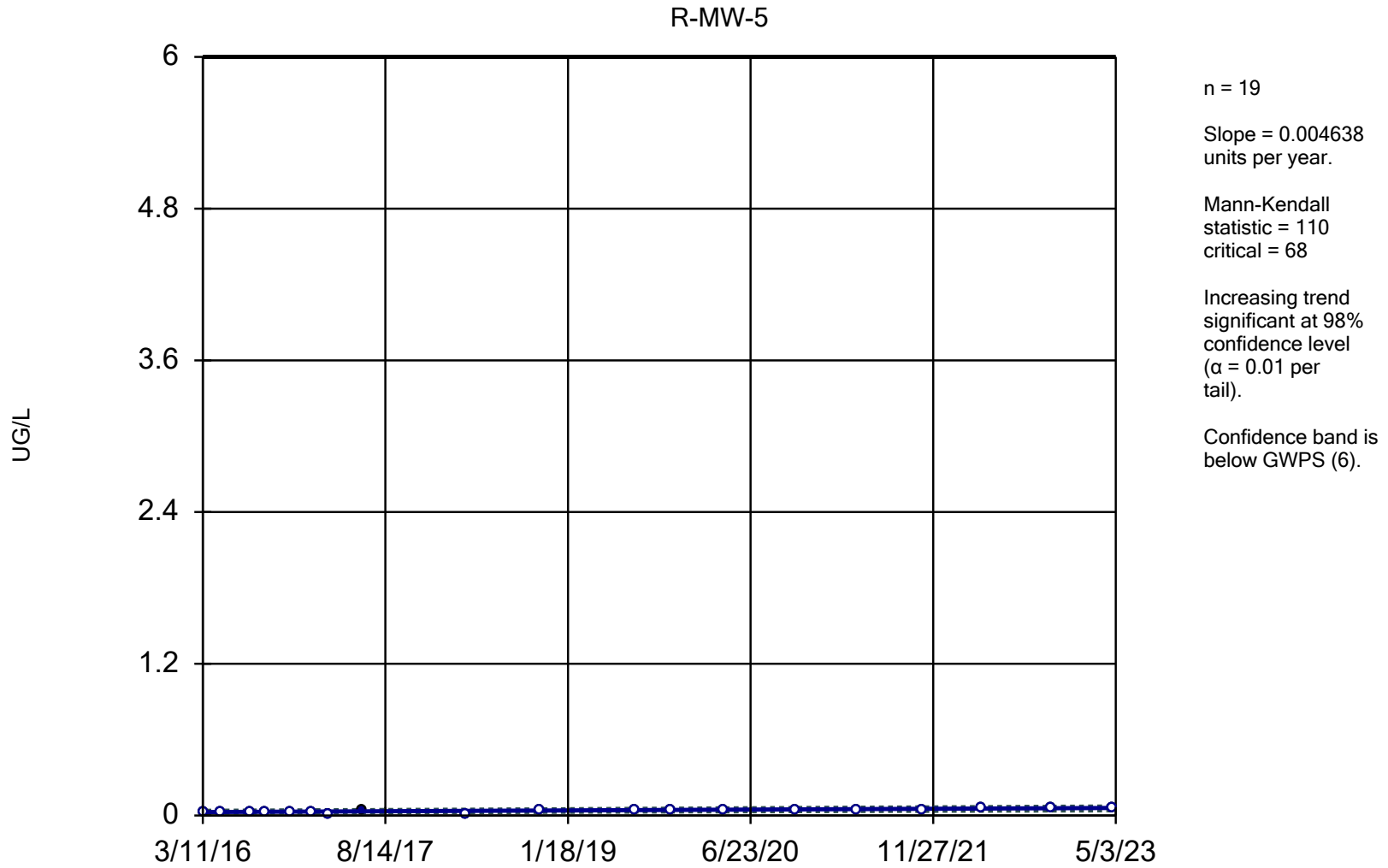
R-MW-1







### Sen's Slope and 95% Confidence Band

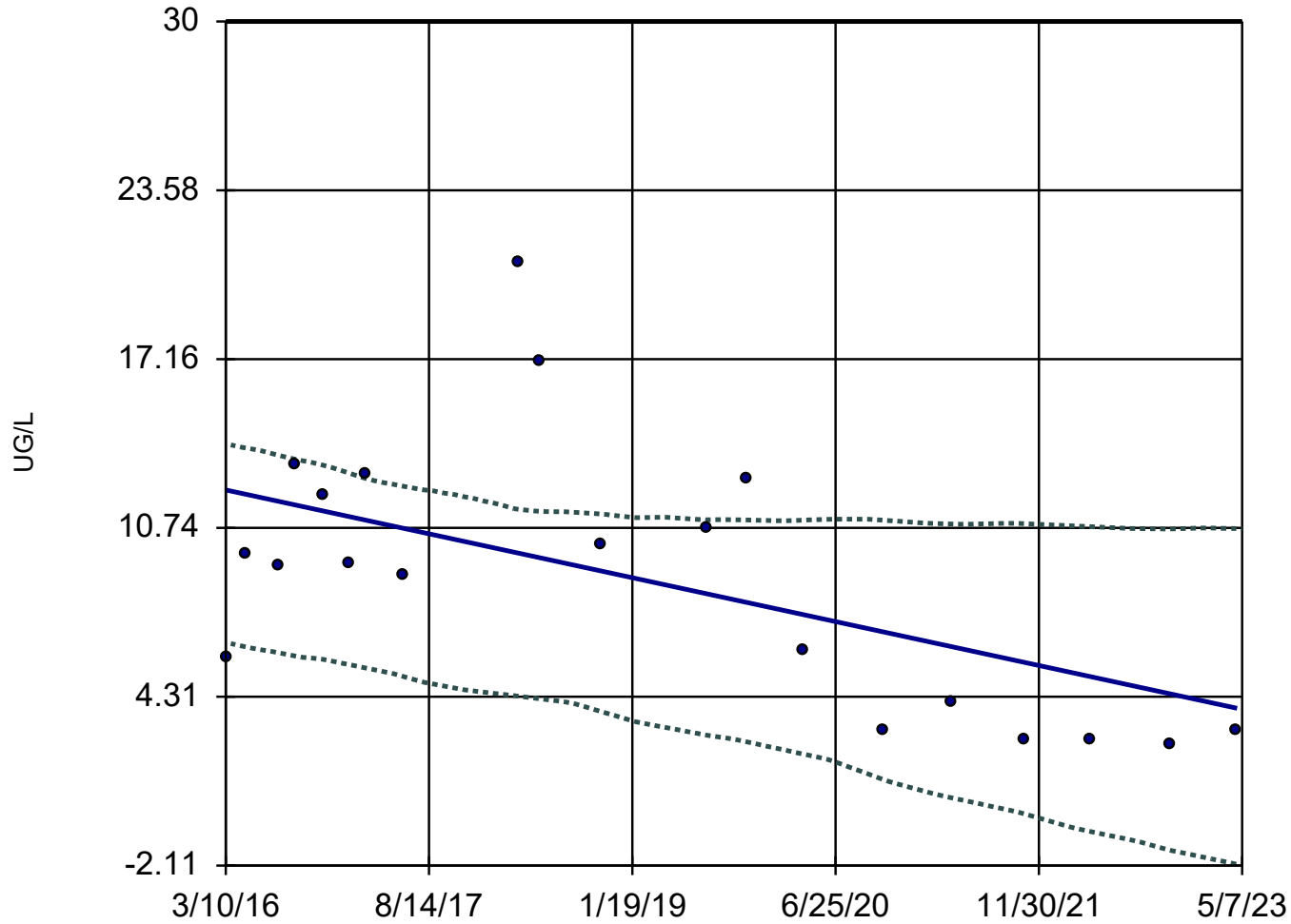


Constituent: ANTIMONY, TOTAL Analysis Run 7/19/2023 1:21 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-1



n = 20

Slope = -1.166  
units per year.

Mann-Kendall  
statistic = -76  
critical = -73

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

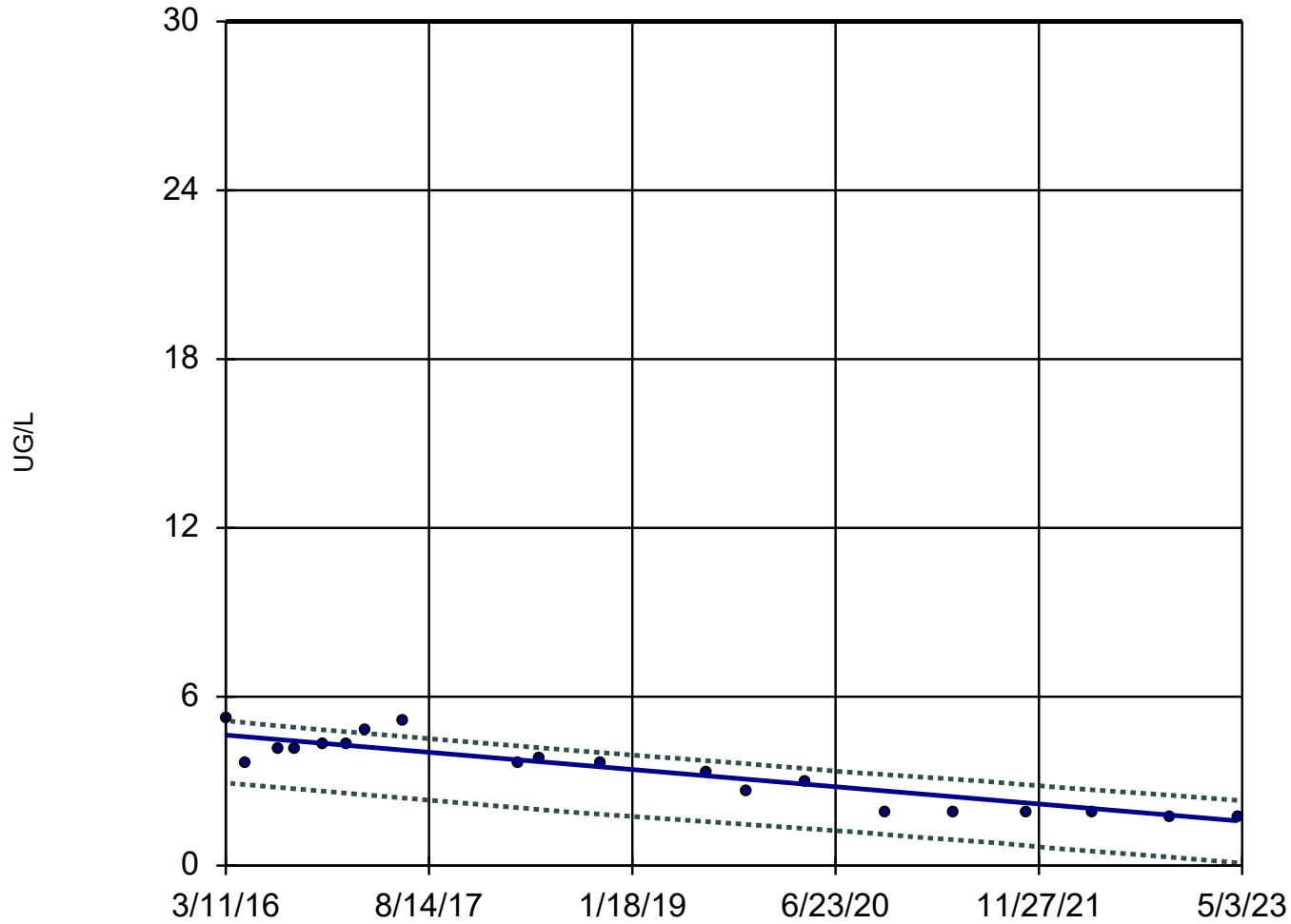
Confidence band is  
below GWPS (30).

Constituent: ARSENIC, TOTAL Analysis Run 7/19/2023 1:21 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-5



n = 20

Slope = -0.4277  
units per year.

Mann-Kendall  
statistic = -134  
critical = -73

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (30).

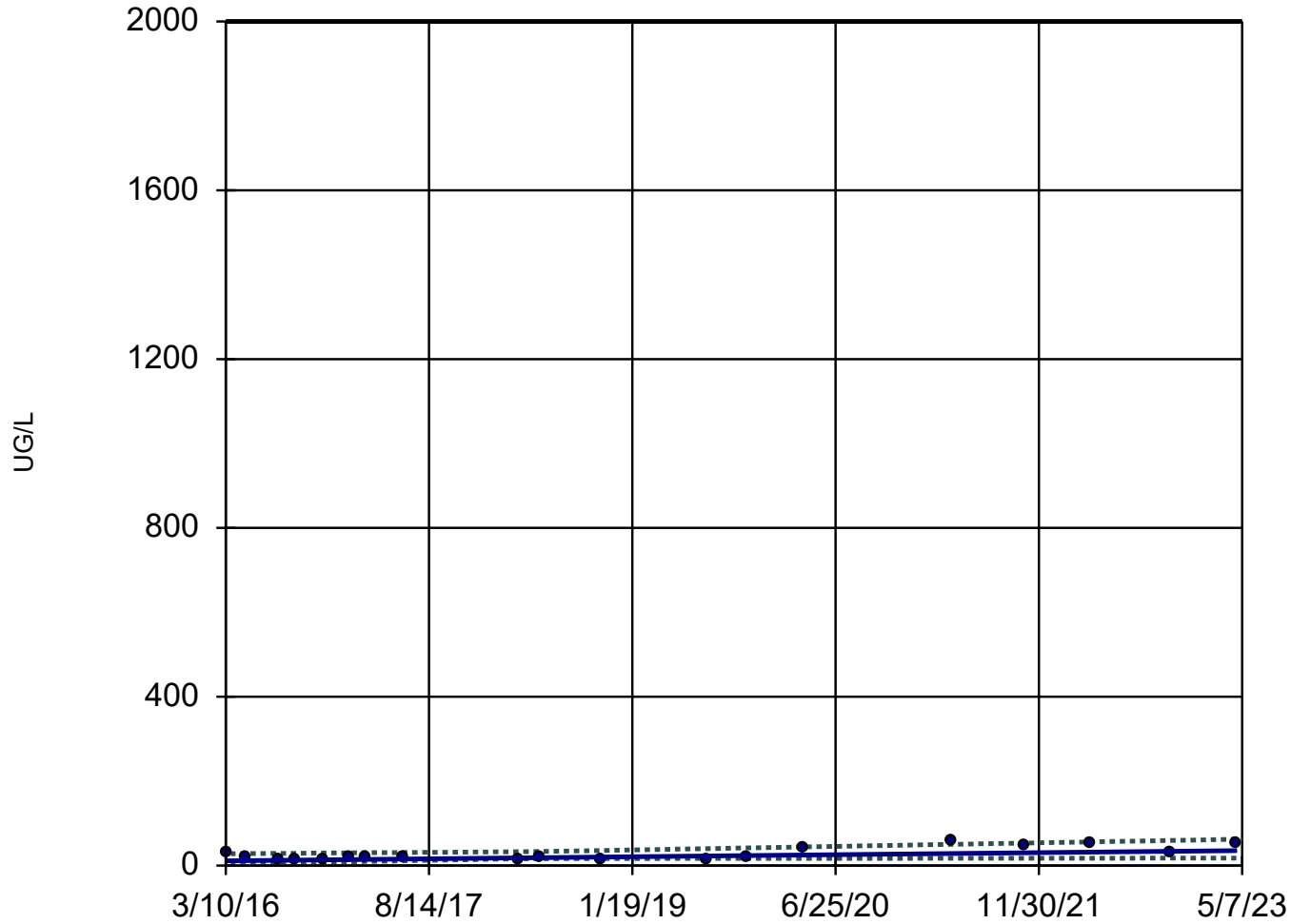
Constituent: ARSENIC, TOTAL Analysis Run 7/19/2023 1:21 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



### Sen's Slope and 95% Confidence Band

R-MW-1



n = 19

Slope = 3.377  
units per year.

Mann-Kendall  
statistic = 72  
critical = 68

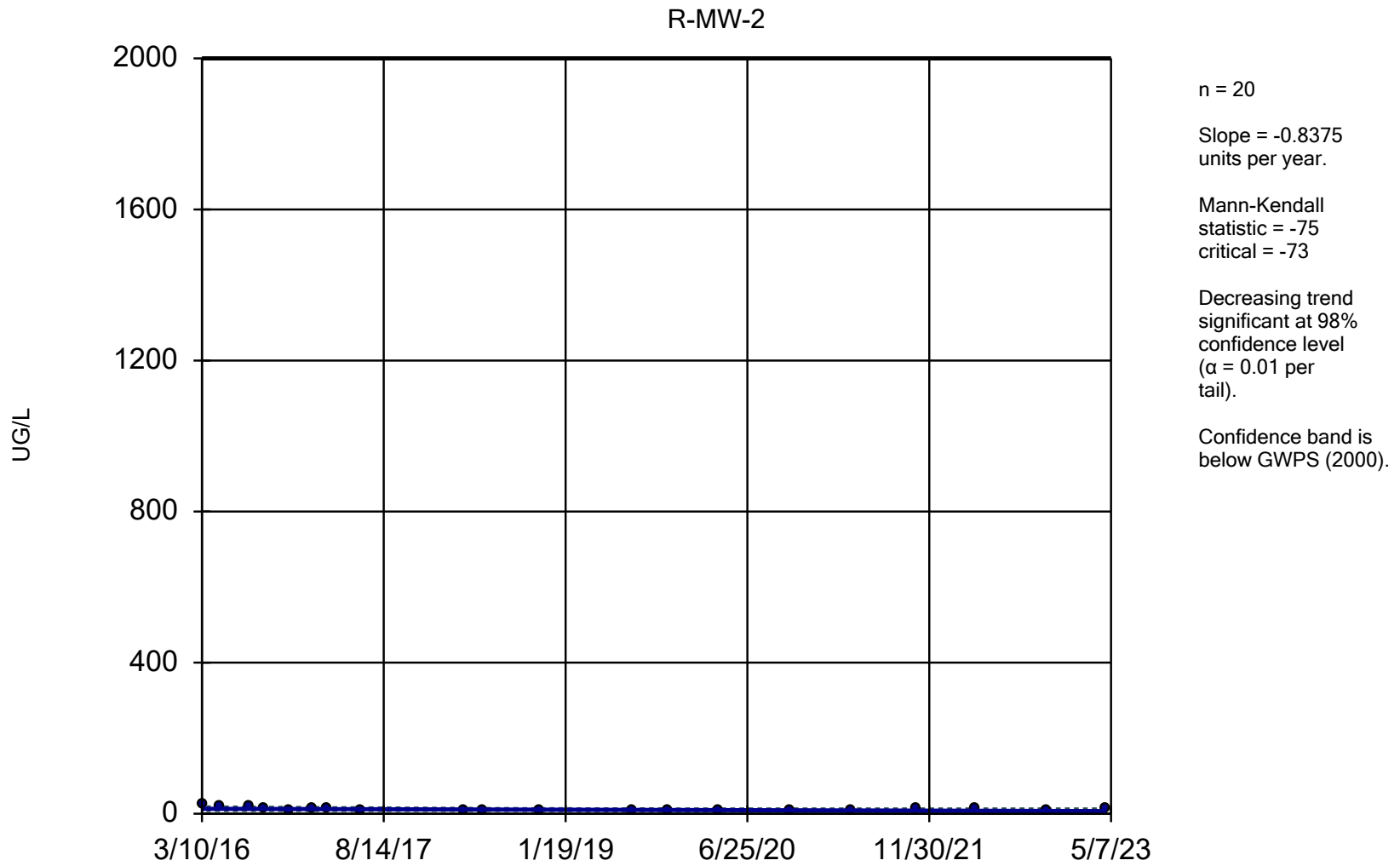
Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 7/19/2023 1:21 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

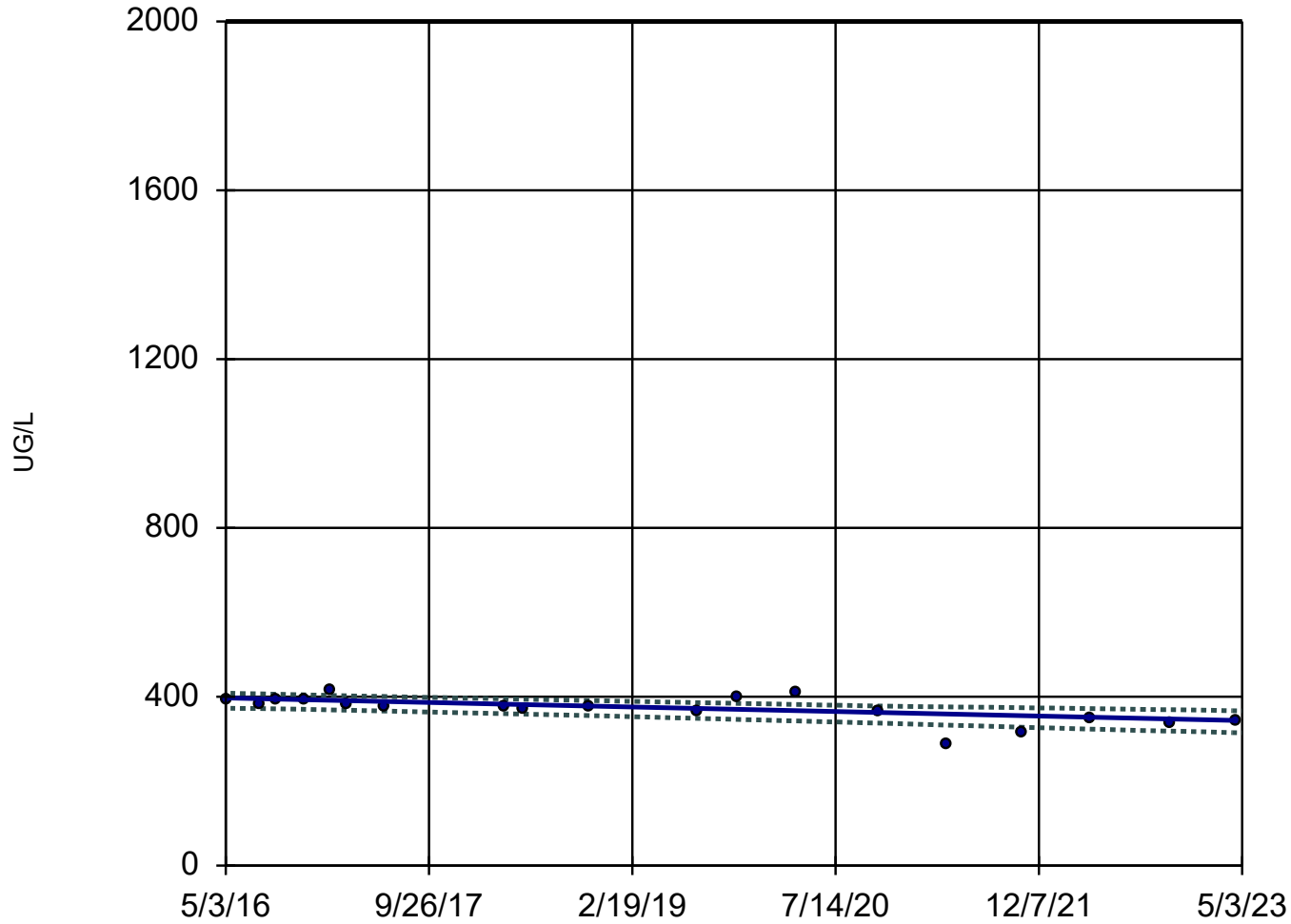


Constituent: BARIUM, TOTAL Analysis Run 7/19/2023 1:21 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-5



n = 19

Slope = -7.676  
units per year.

Mann-Kendall  
statistic = -90  
critical = -68

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

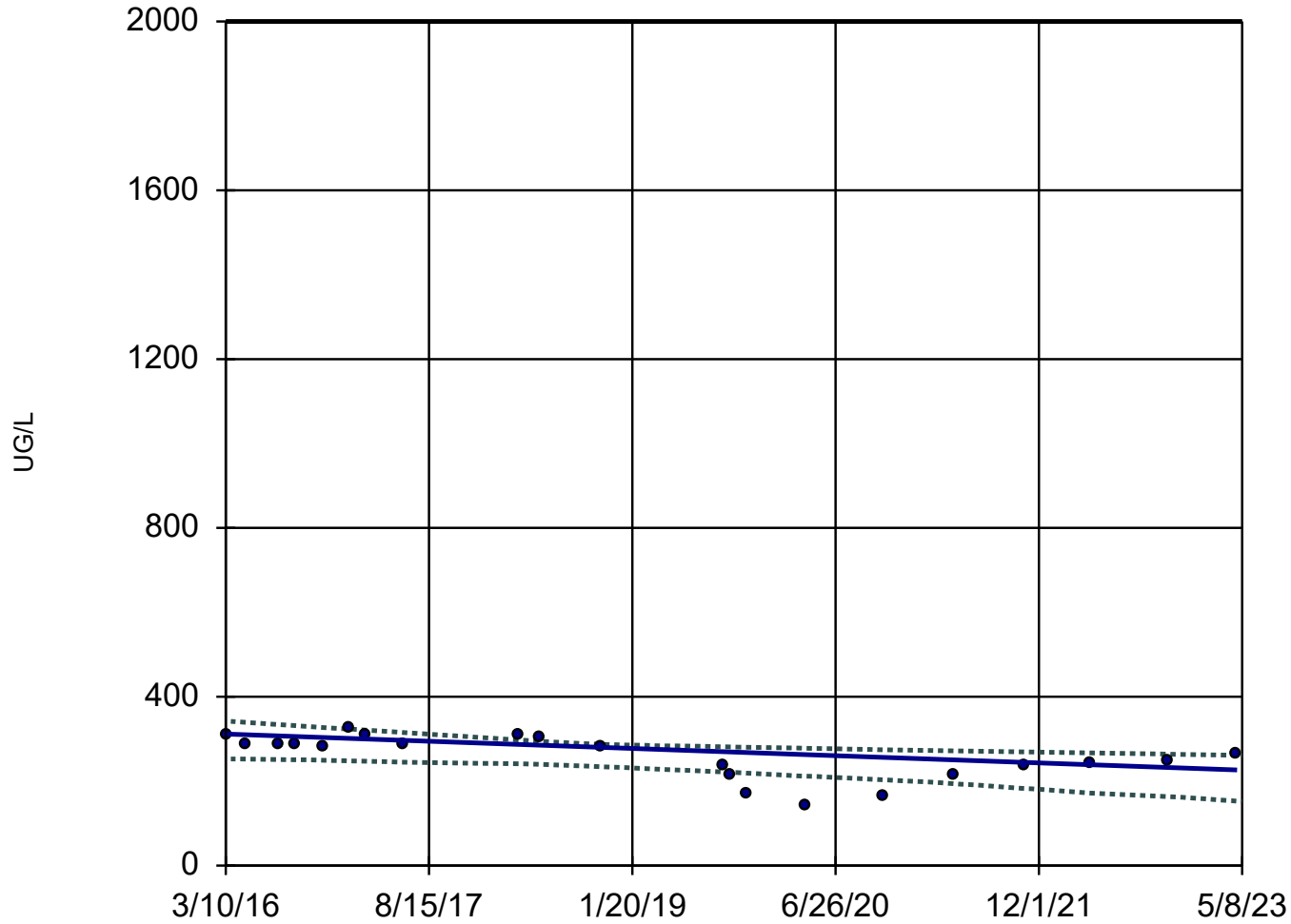
Confidence band is  
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 7/19/2023 1:21 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

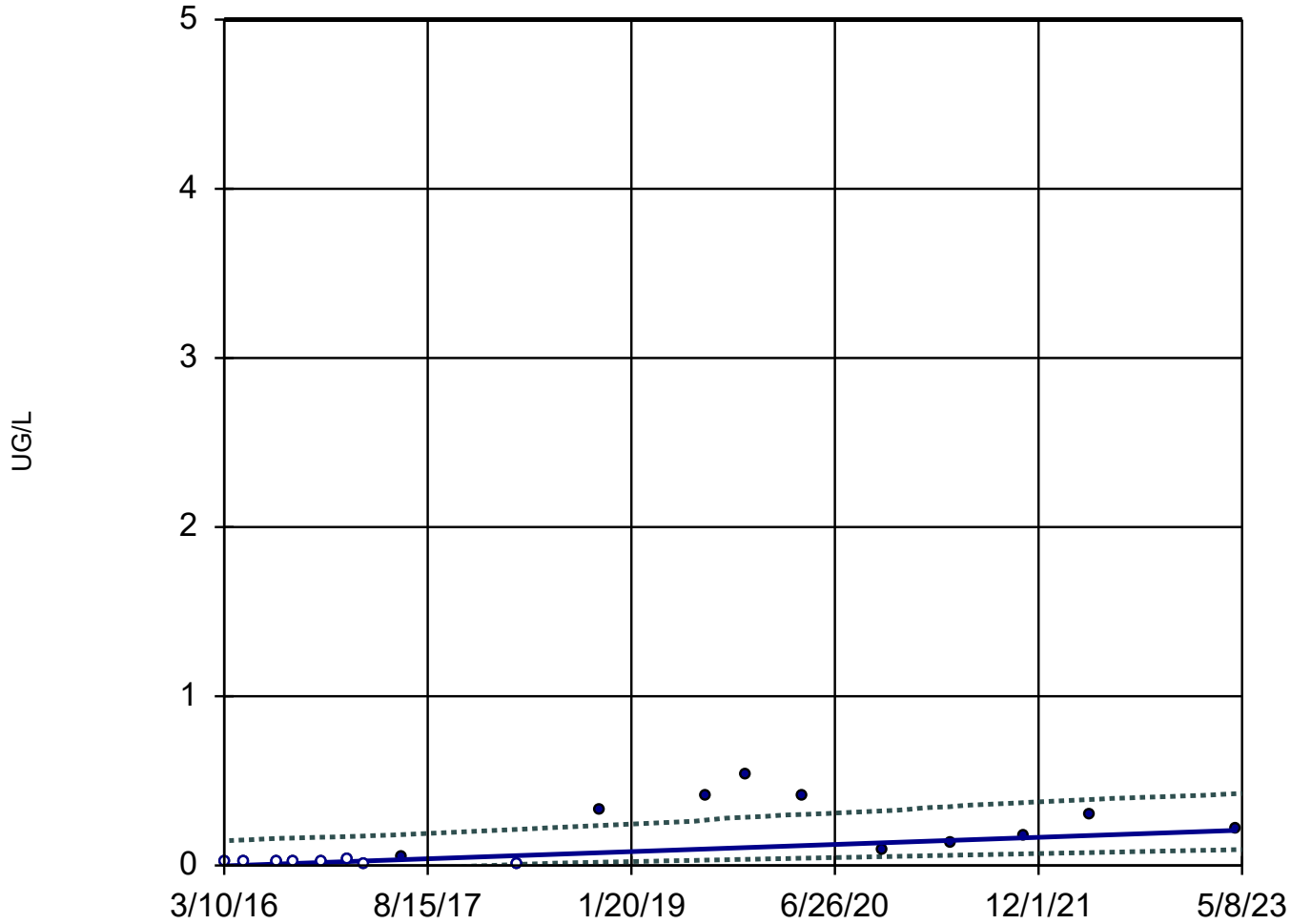
### Sen's Slope and 95% Confidence Band

R-MW-7



### Sen's Slope and 95% Confidence Band

R-MW-3



n = 18

Slope = 0.02954  
units per year.

Mann-Kendall  
statistic = 71  
critical = 63

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

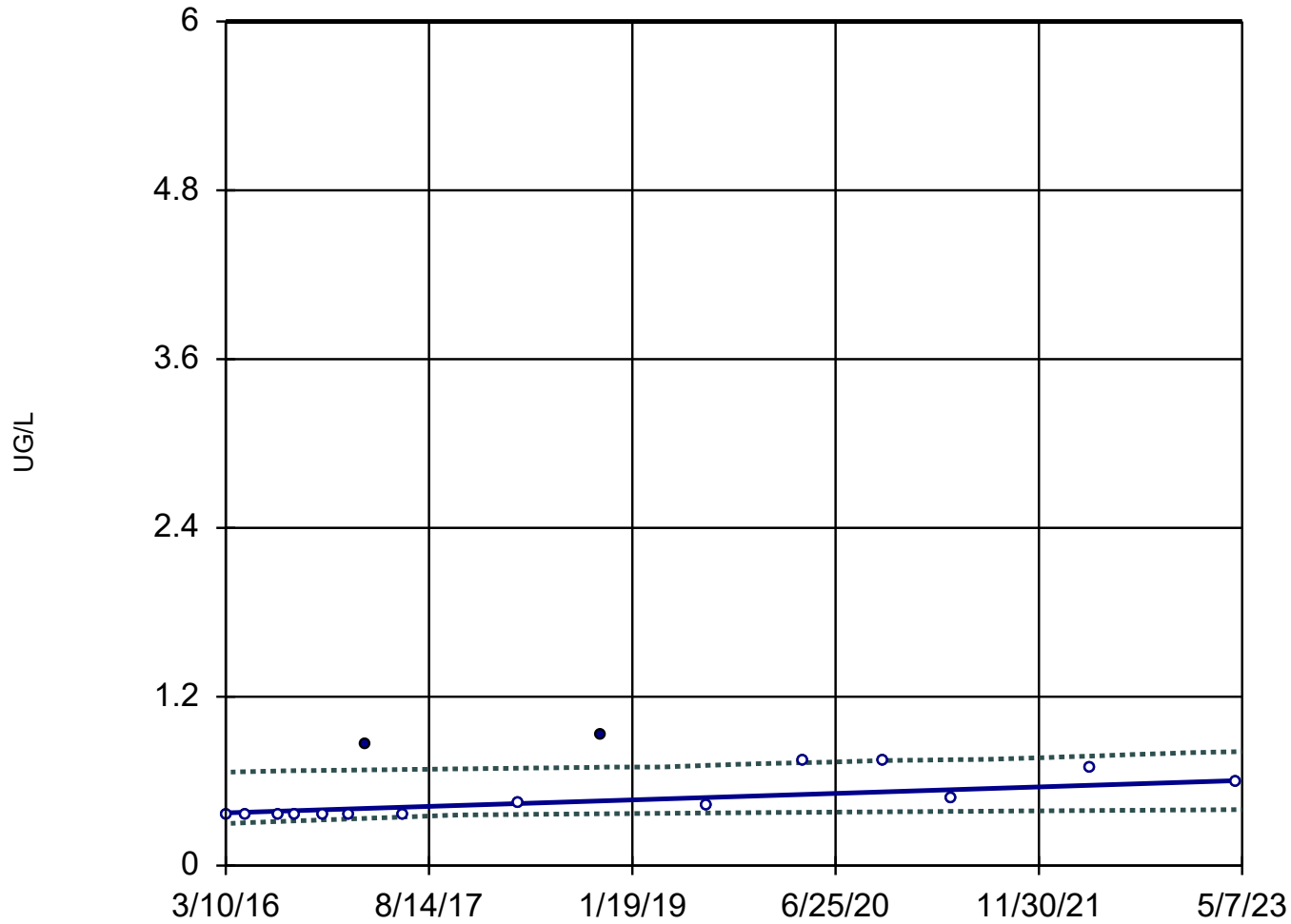
Confidence band is  
below GWPS (5).

Constituent: CADMIUM, TOTAL Analysis Run 7/19/2023 1:21 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-1



n = 16

Slope = 0.03219  
units per year.

Mann-Kendall  
statistic = 60  
critical = 53

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

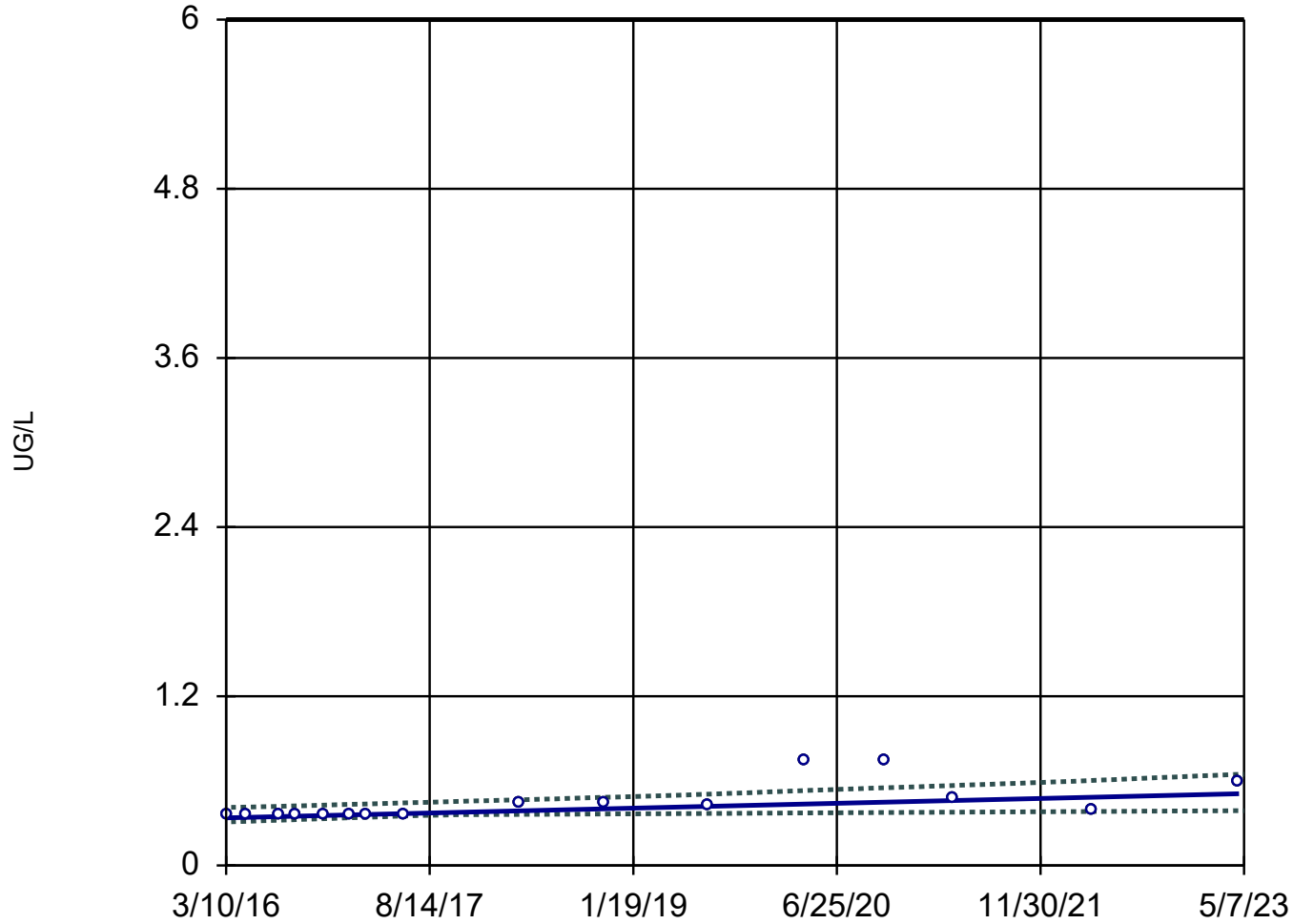
Confidence band is  
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-2



n = 16

Slope = 0.024  
units per year.

Mann-Kendall  
statistic = 78  
critical = 53

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

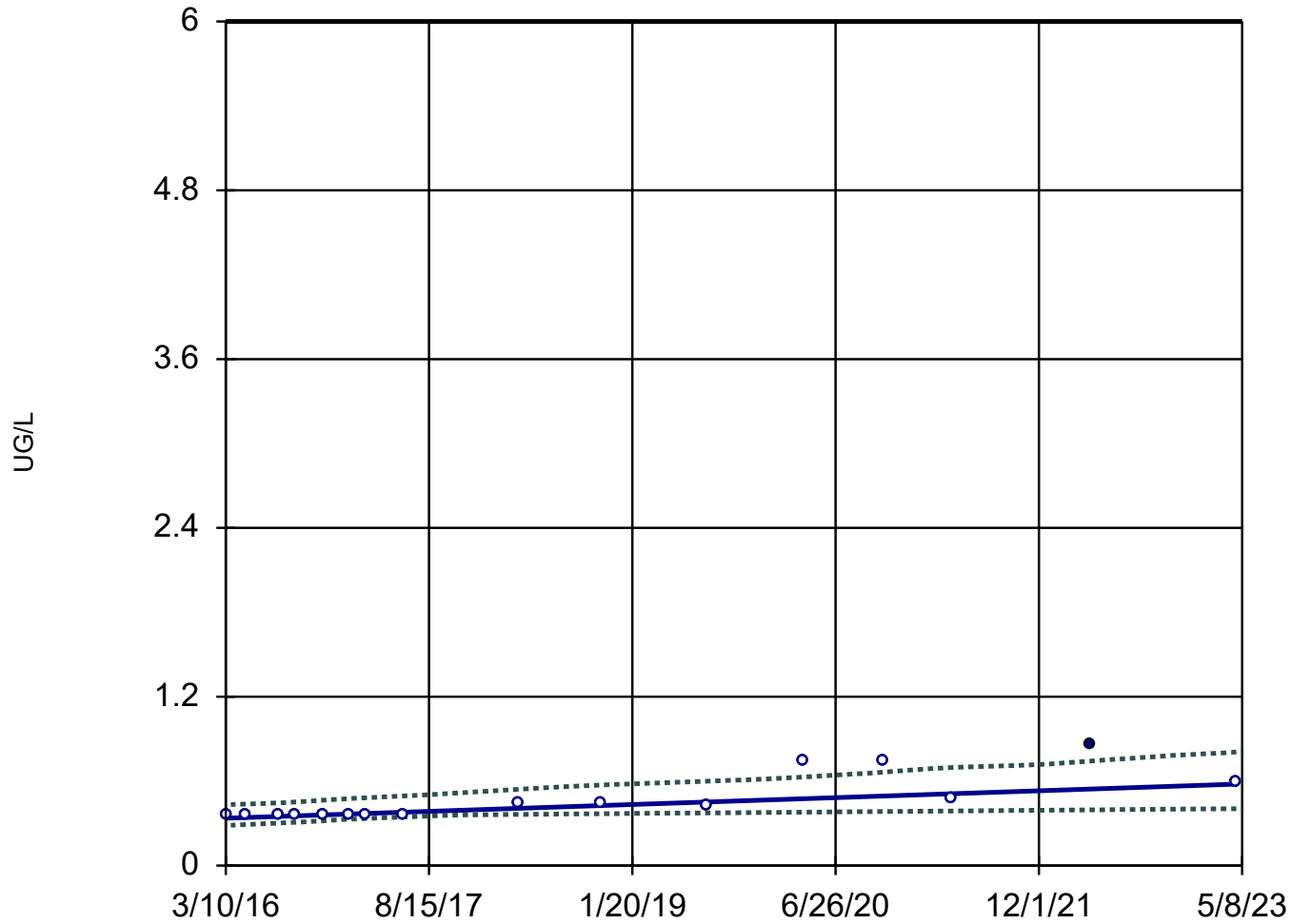
Confidence band is  
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-3



n = 16

Slope = 0.03402  
units per year.

Mann-Kendall  
statistic = 88  
critical = 53

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (6).

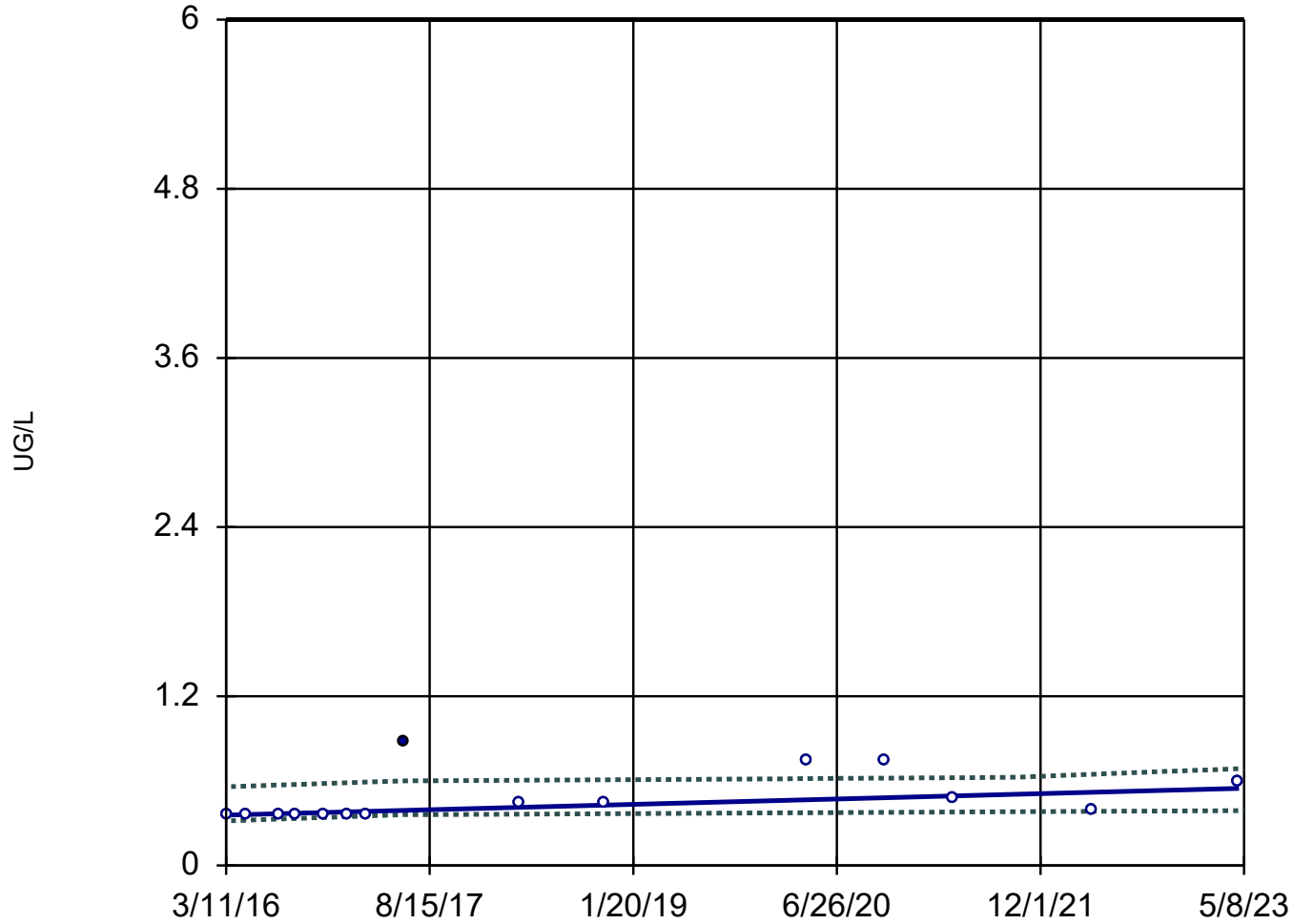
Constituent: COBALT, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



### Sen's Slope and 95% Confidence Band

R-MW-6



n = 15

Slope = 0.02662  
units per year.

Mann-Kendall  
statistic = 56  
critical = 48

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

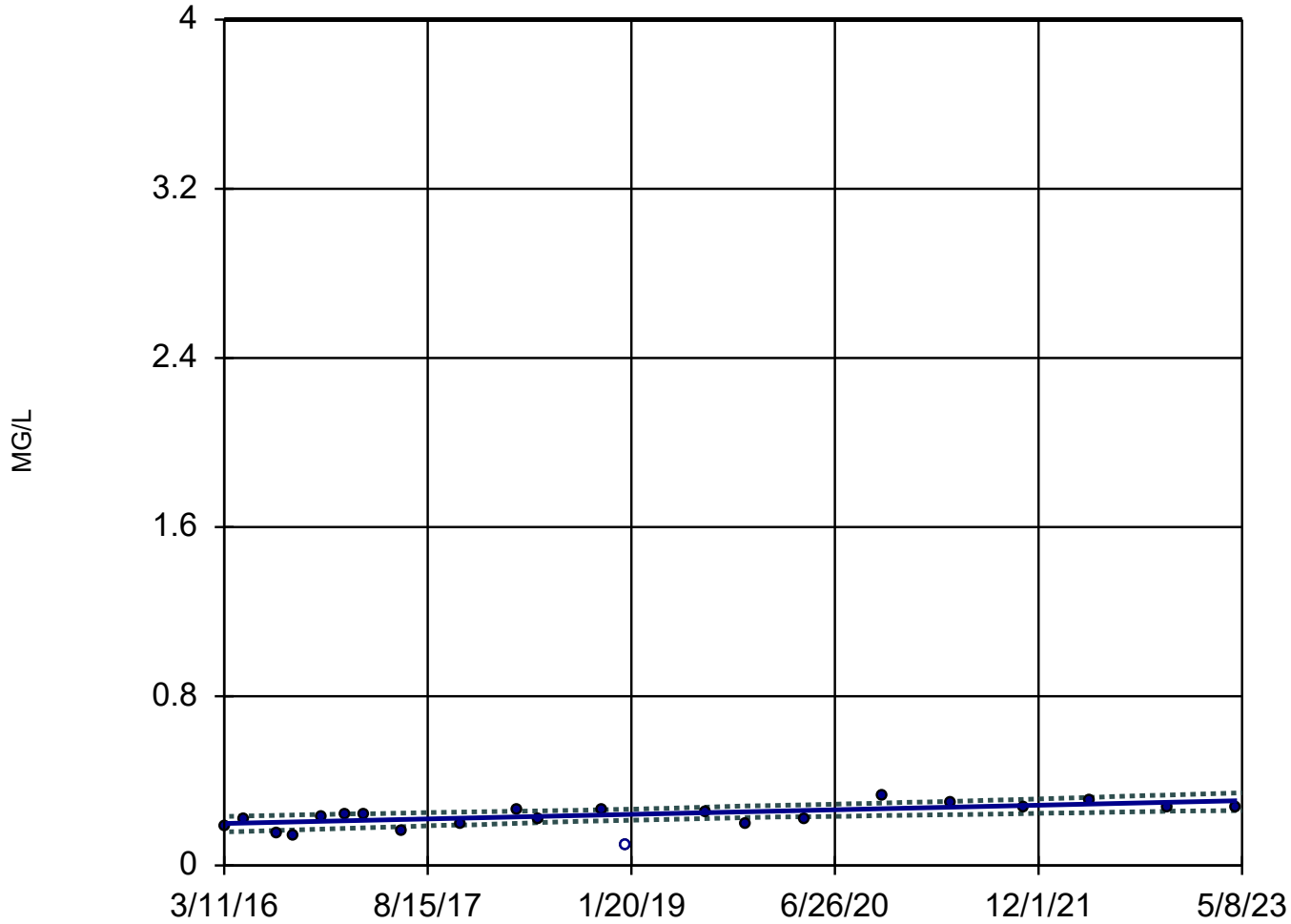
Rush Island E.C. Client: Ameren Data: RIEC Data





### Sen's Slope and 95% Confidence Band

R-MW-6



n = 22

Slope = 0.01516  
units per year.

Mann-Kendall  
statistic = 111  
critical = 84

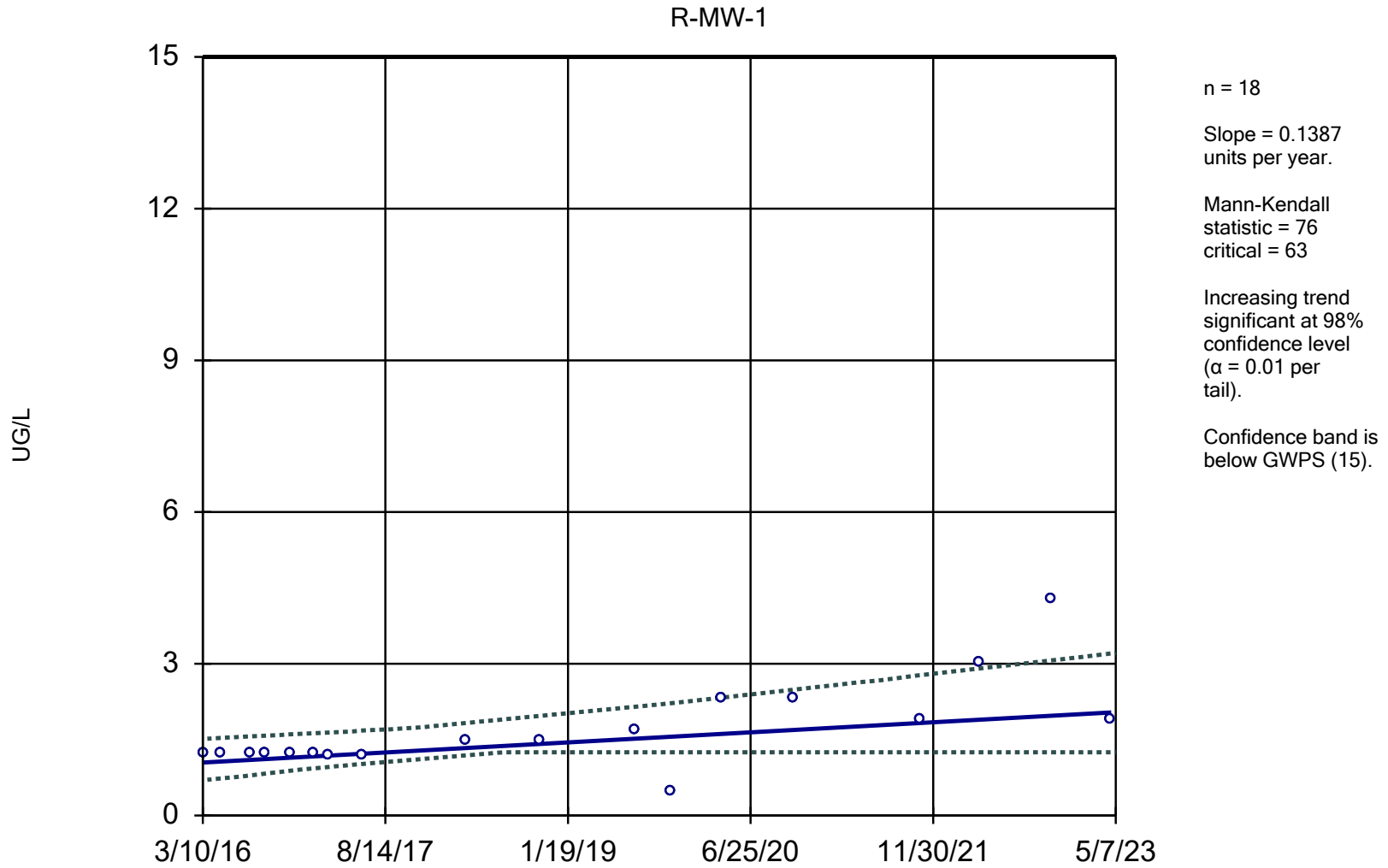
Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

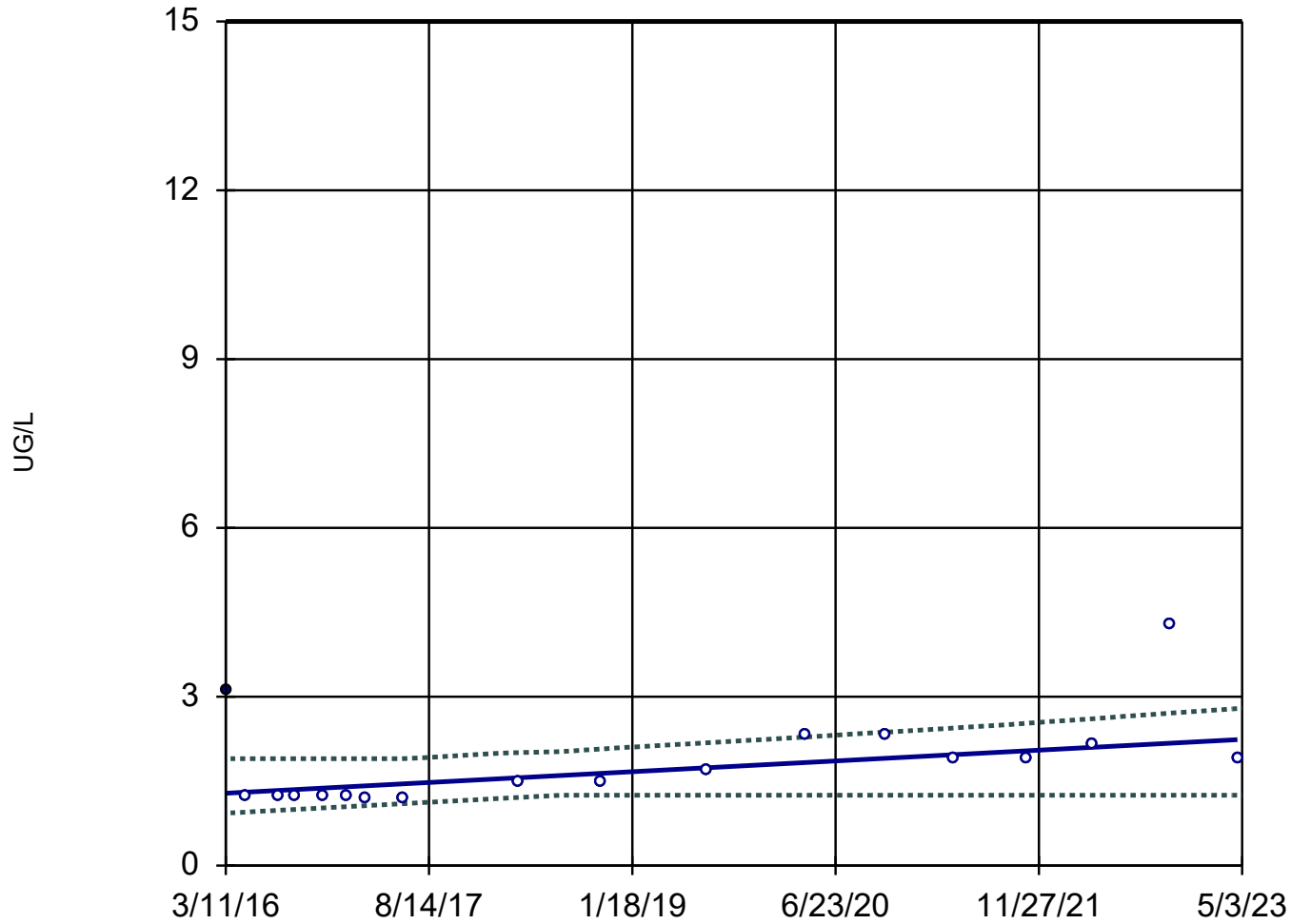


Constituent: LEAD, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-4



n = 18

Slope = 0.1338  
units per year.

Mann-Kendall  
statistic = 65  
critical = 63

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

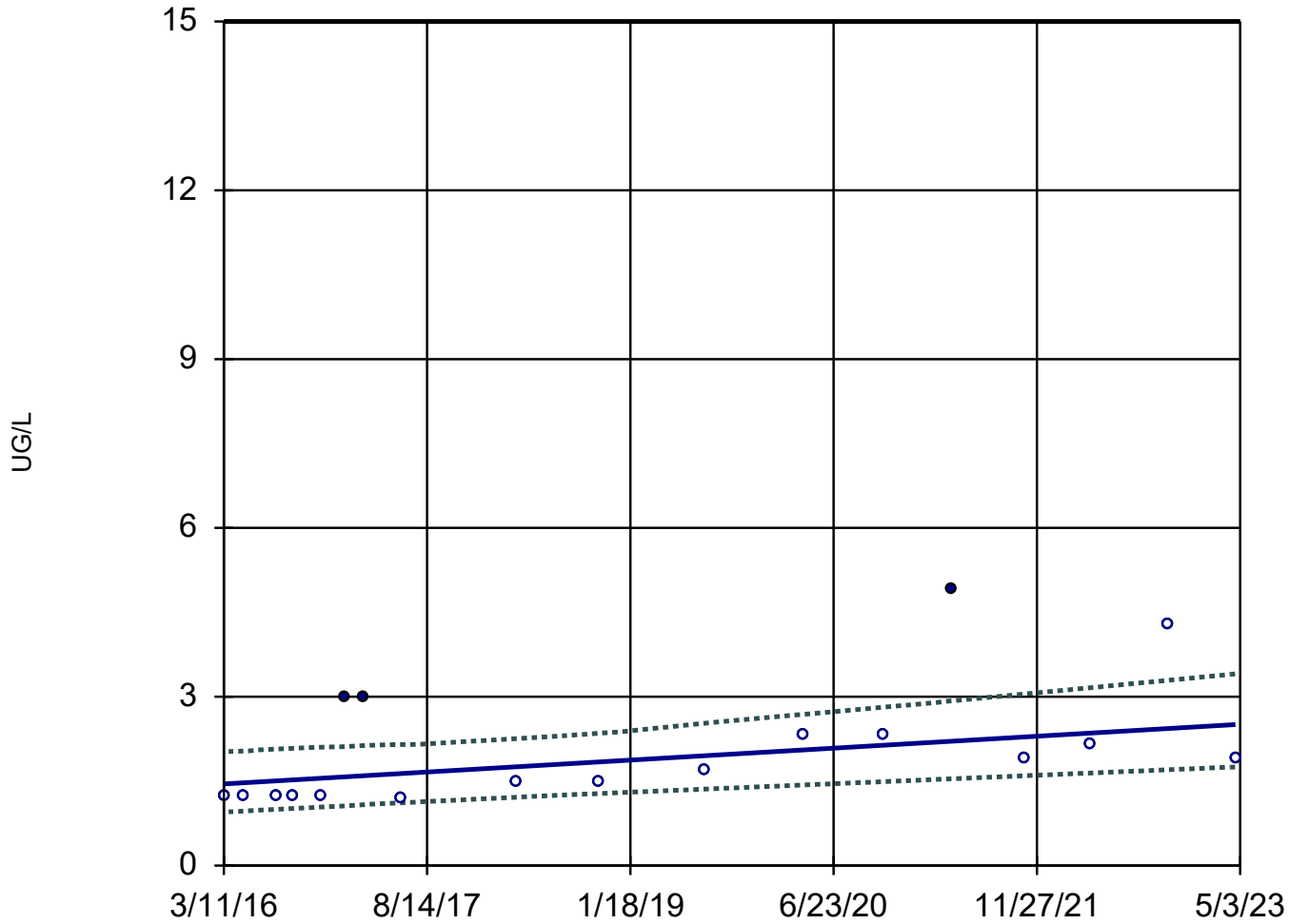
Confidence band is  
below GWPS (15).

Constituent: LEAD, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

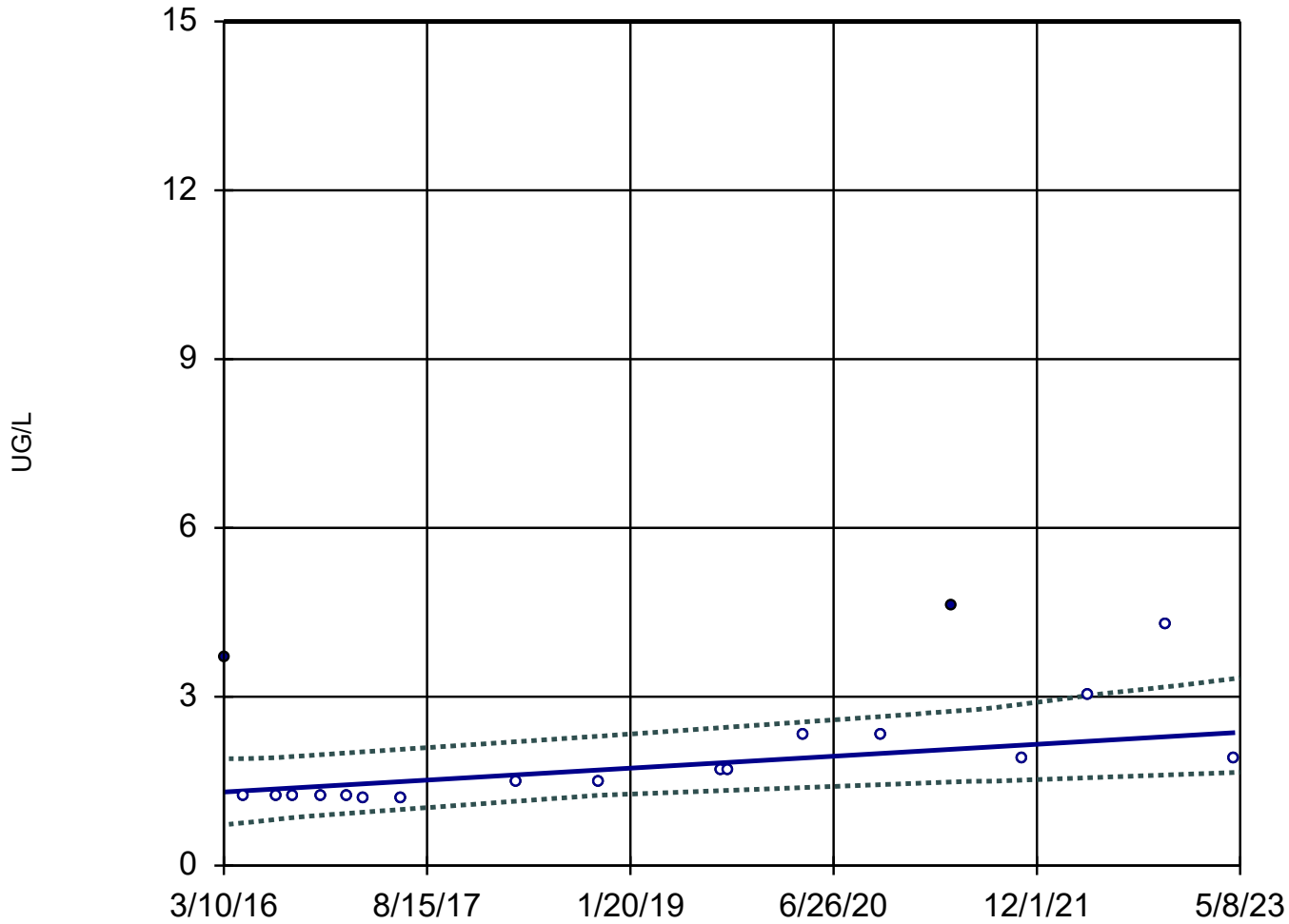
### Sen's Slope and 95% Confidence Band

R-MW-5



### Sen's Slope and 95% Confidence Band

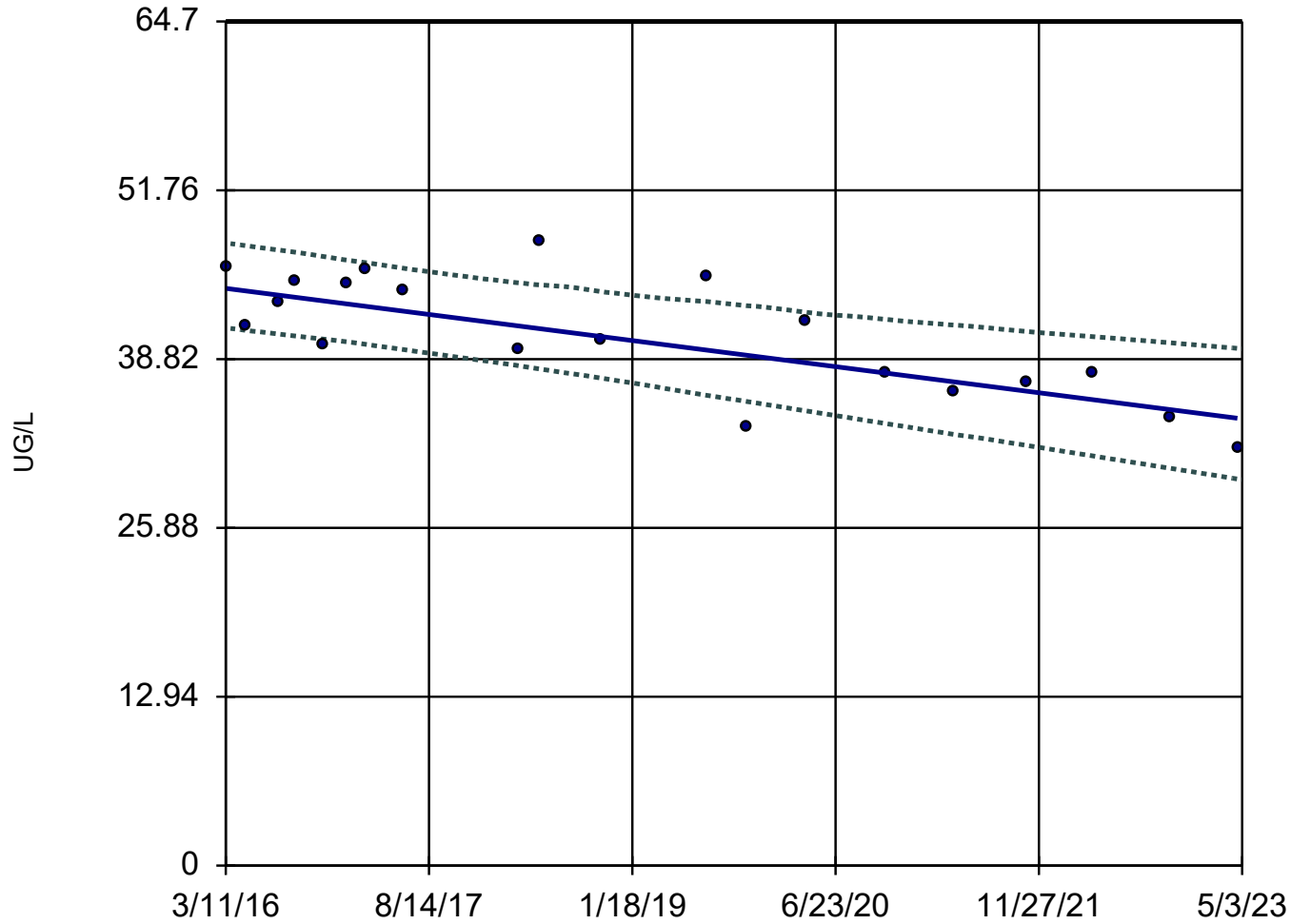
R-MW-7





### Sen's Slope and 95% Confidence Band

R-MW-4



n = 20

Slope = -1.399  
units per year.

Mann-Kendall  
statistic = -98  
critical = -73

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

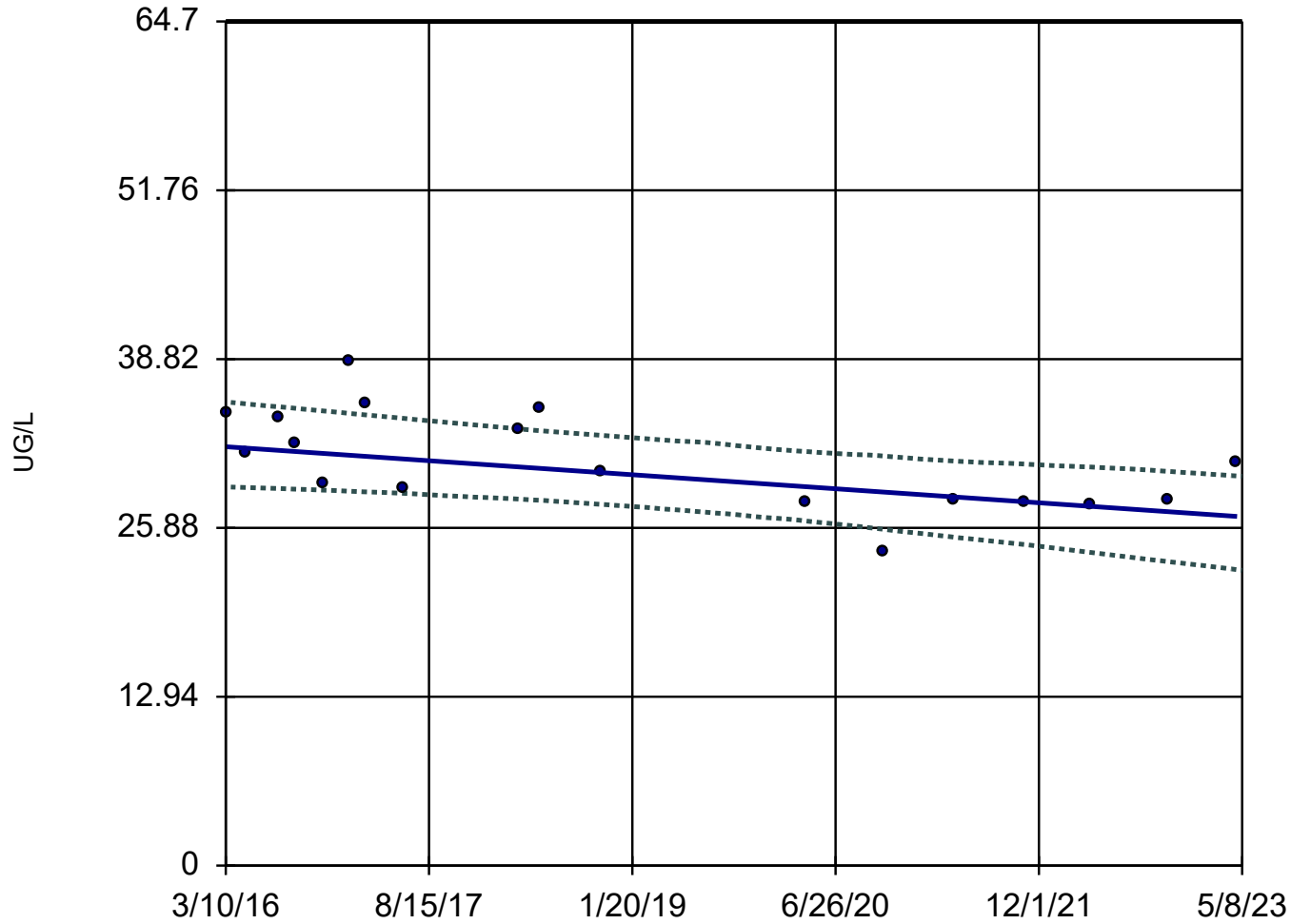
Confidence band is  
below GWPS (64.7).

Constituent: LITHIUM, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-7



n = 18

Slope = -0.7492  
units per year.

Mann-Kendall  
statistic = -66  
critical = -63

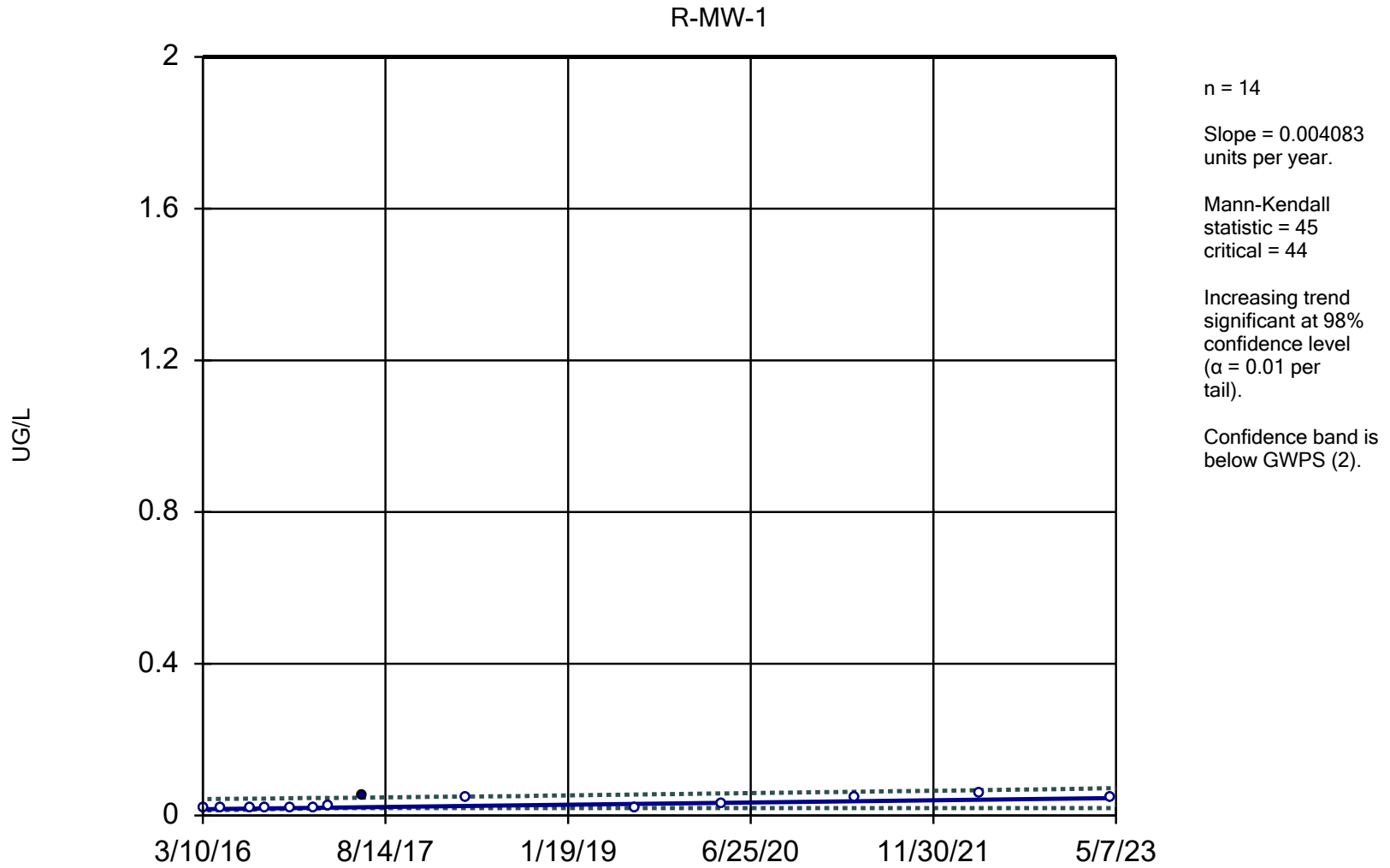
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (64.7).

Constituent: LITHIUM, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

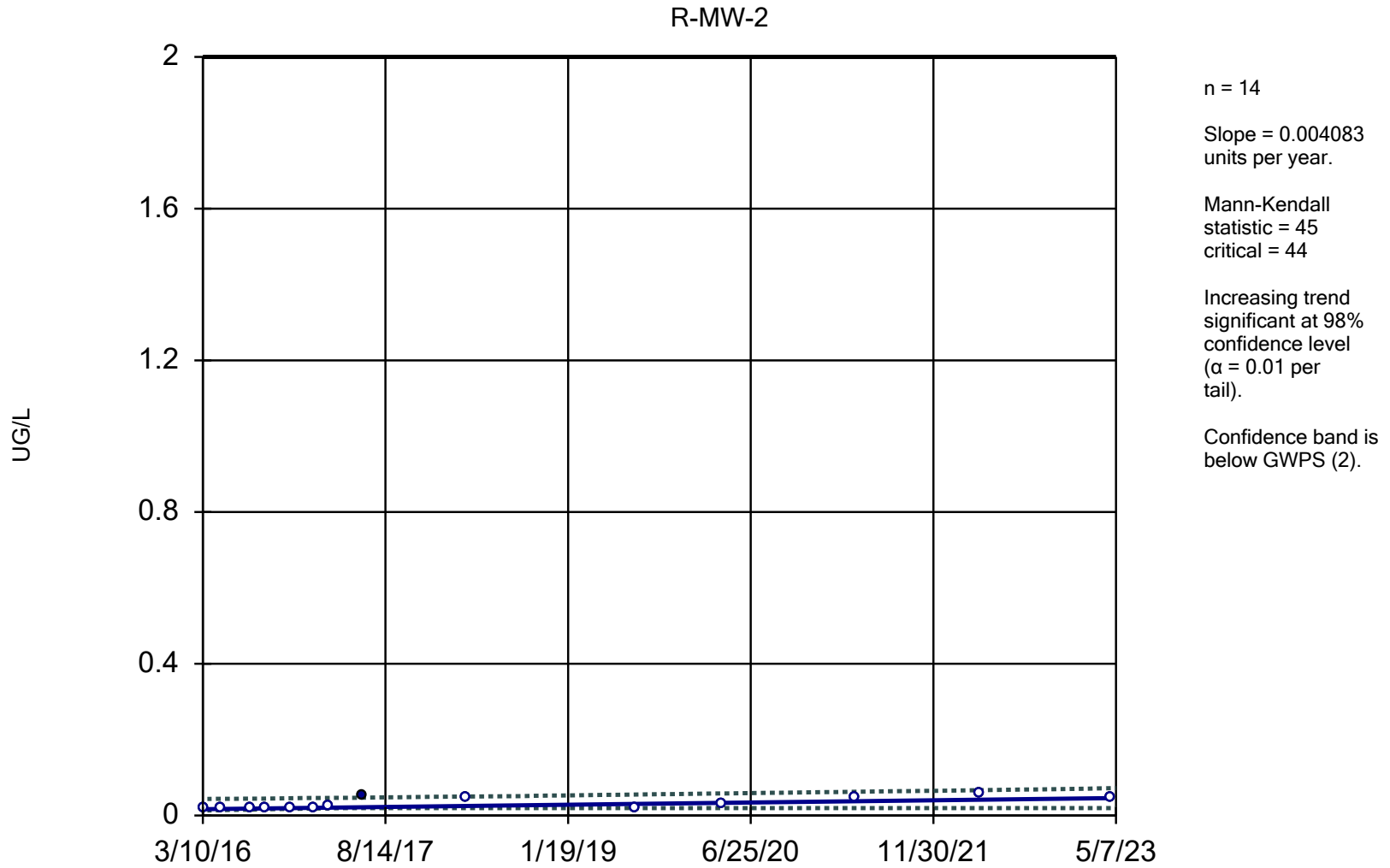
### Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

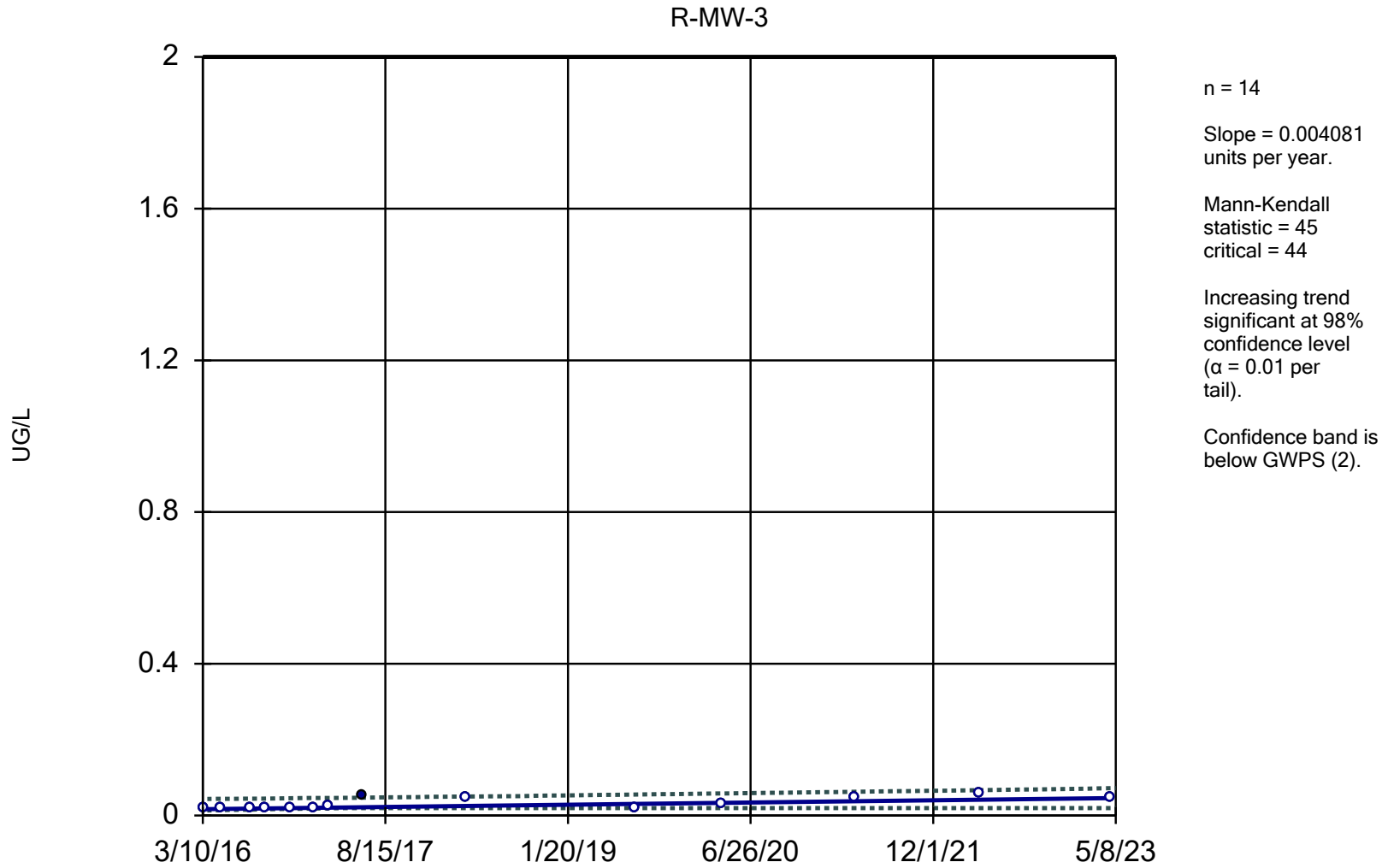
### Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

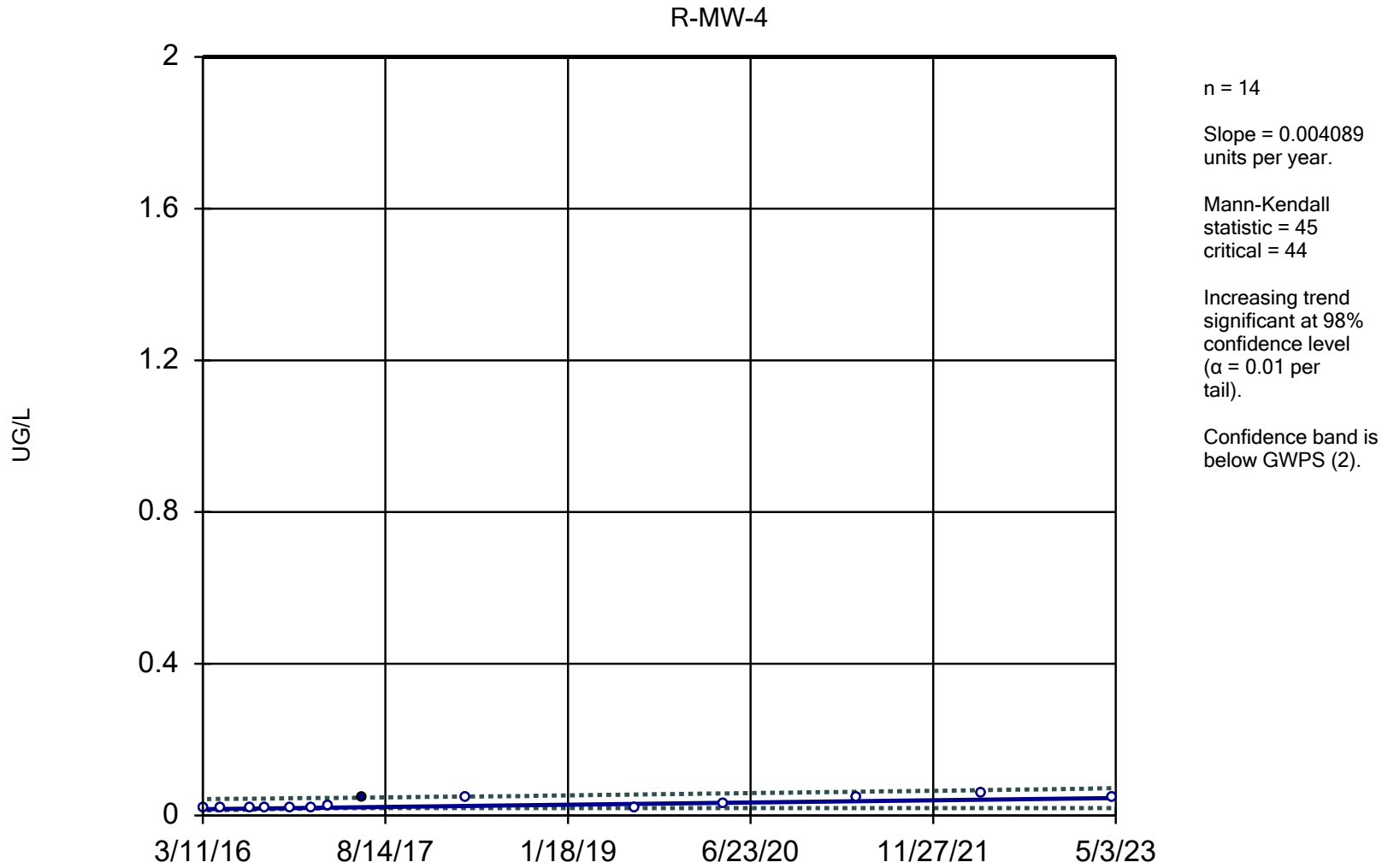
## Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

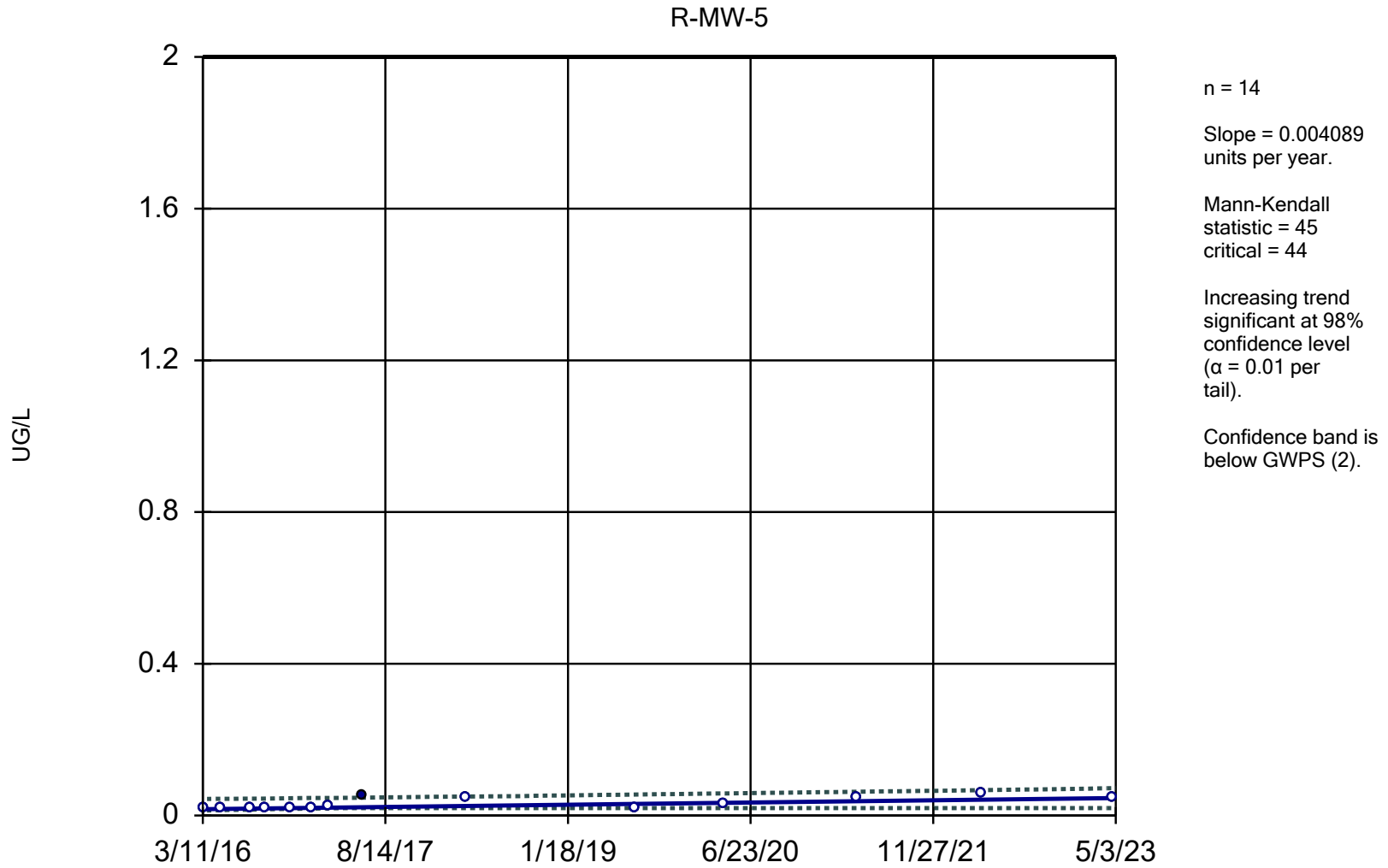
### Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

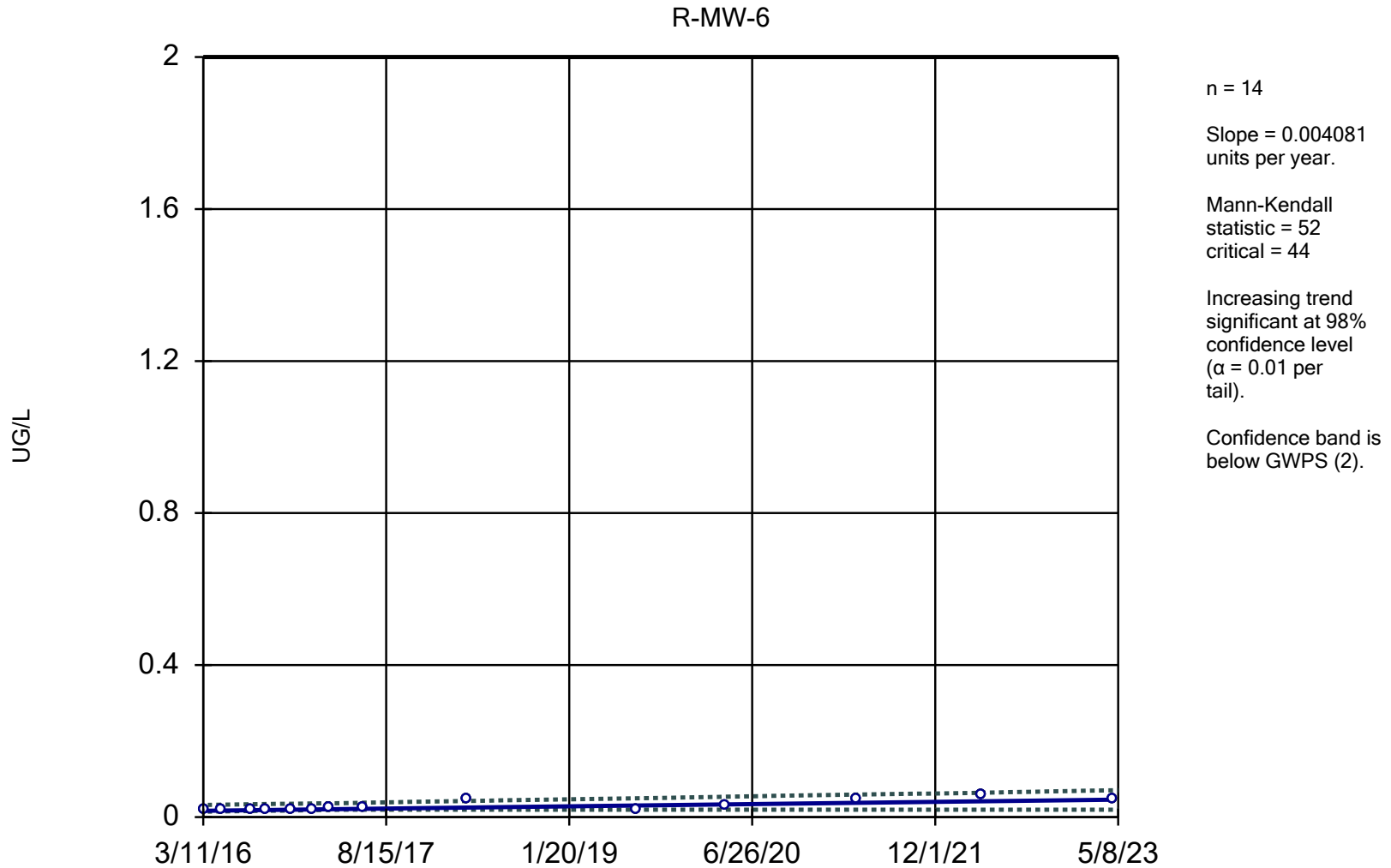
## Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

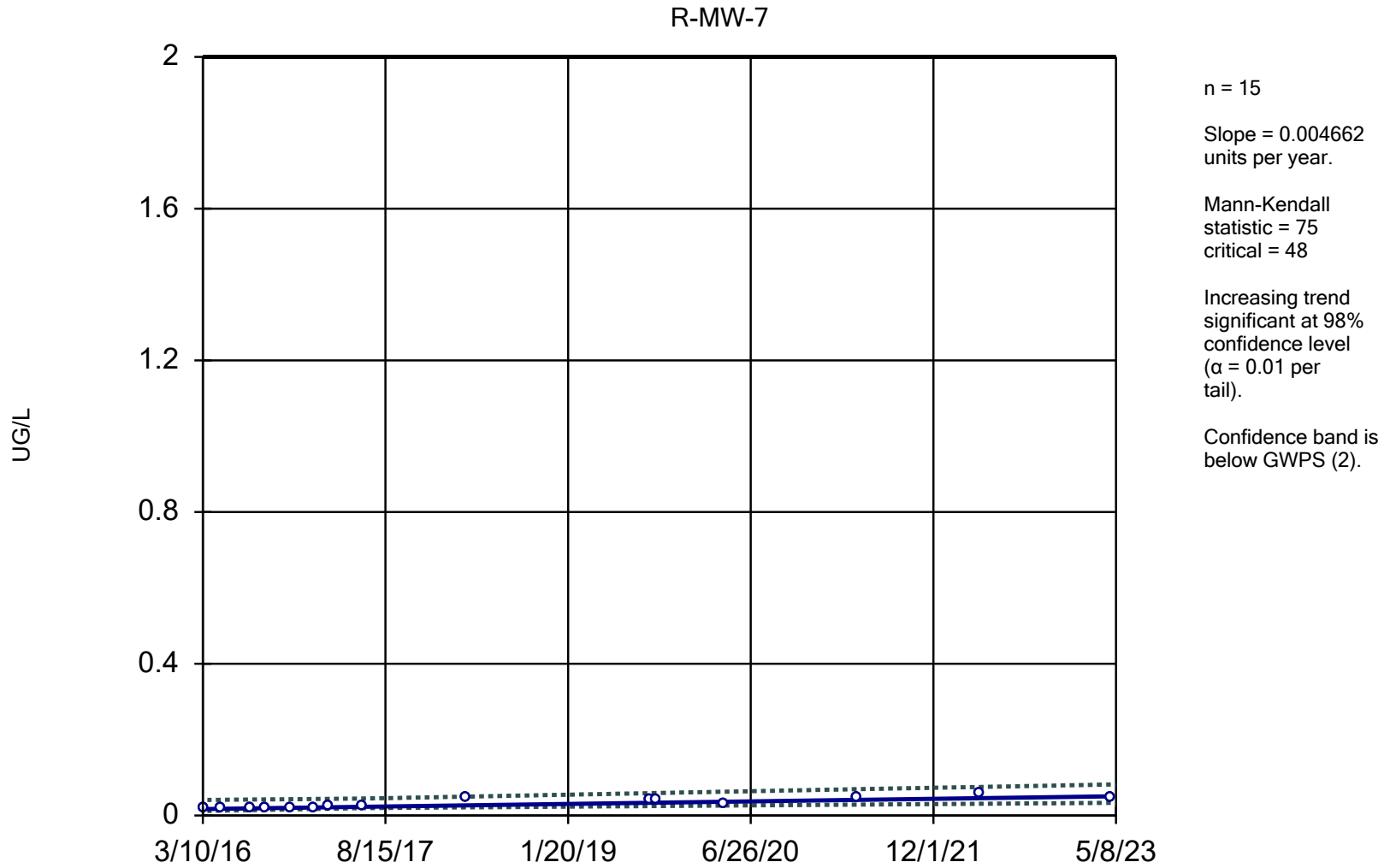


Constituent: MERCURY, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



### Sen's Slope and 95% Confidence Band

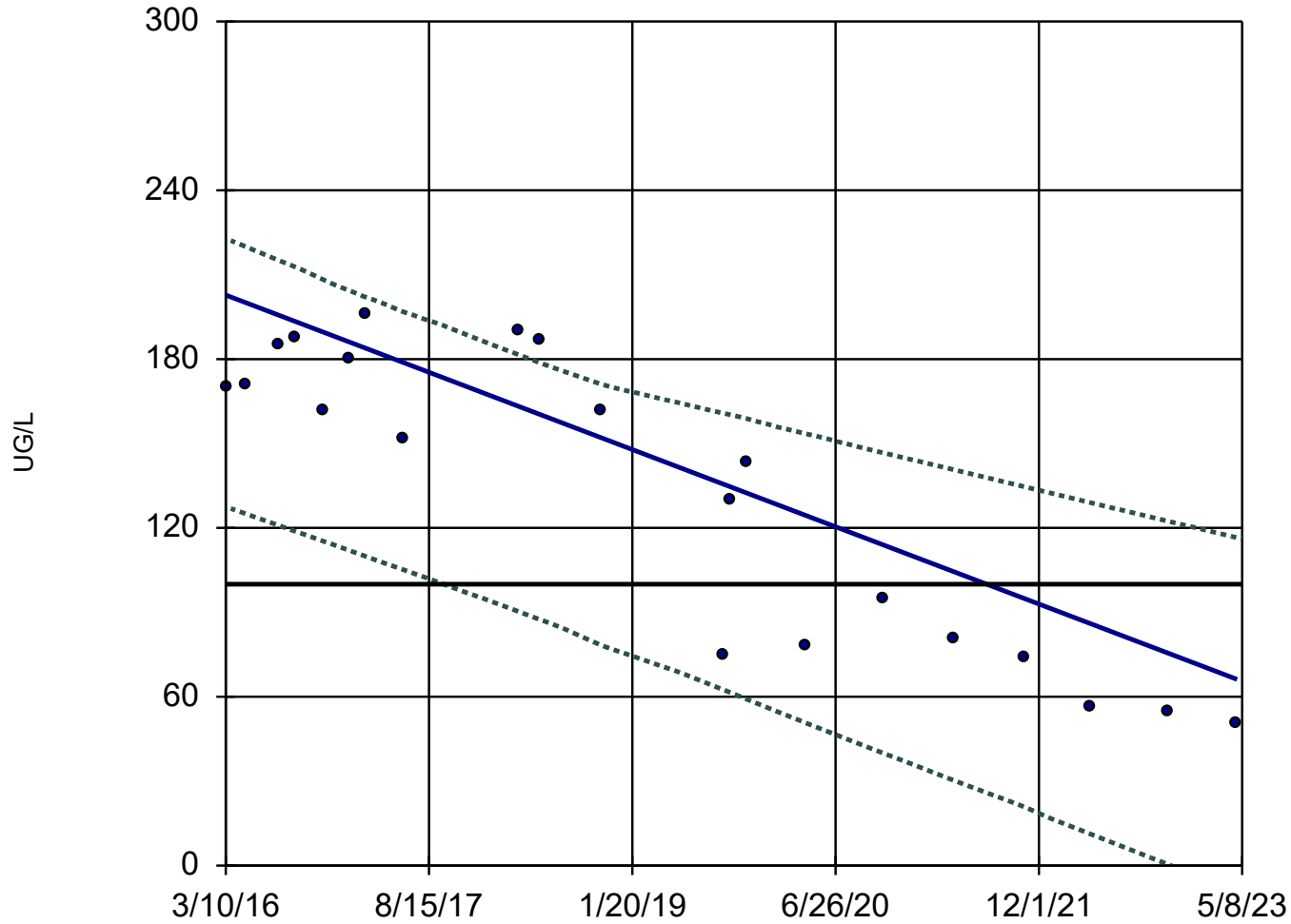


Constituent: MERCURY, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

# Sen's Slope and 95% Confidence Band

R-MW-7



n = 21

Slope = -19.16  
units per year.

Mann-Kendall  
statistic = -135  
critical = -78

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

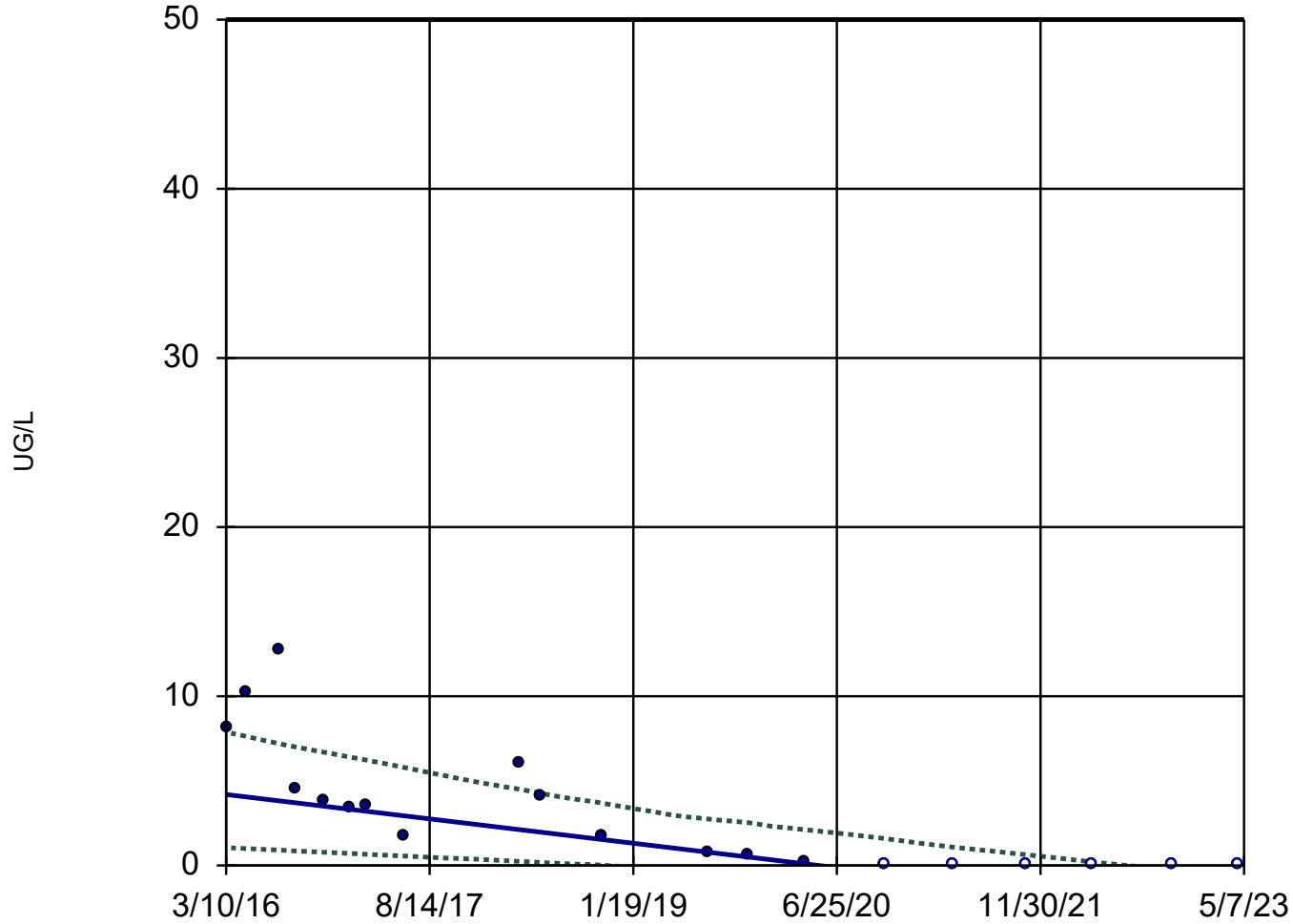
Confidence band intersects  
GWPS (100) on 10/16/17.

Constituent: MOLYBDENUM, TOTAL Analysis Run 7/19/2023 1:29 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-MW-1



n = 20

Slope = -1.006  
units per year.

Mann-Kendall  
statistic = -147  
critical = -73

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (50).

Constituent: SELENIUM, TOTAL Analysis Run 7/19/2023 1:22 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

# Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/19/2023, 1:23 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-MW-1</b>	<b>-0.106</b>	<b>-77</b>	<b>-73</b>	<b>Yes</b>	<b>20</b>	<b>15</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-MW-2</b>	<b>-0.4156</b>	<b>-122</b>	<b>-73</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ANTIMONY, TOTAL (UG/L)	R-MW-3	-0.00...	-35	-73	No	20	50	n/a	n/a	0.02	NP
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-MW-4</b>	<b>0.004548</b>	<b>97</b>	<b>68</b>	<b>Yes</b>	<b>19</b>	<b>84.21</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-MW-5</b>	<b>0.004638</b>	<b>110</b>	<b>68</b>	<b>Yes</b>	<b>19</b>	<b>94.74</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ANTIMONY, TOTAL (UG/L)	R-MW-6	0.003935	26	73	No	20	65	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-7	0.004436	55	78	No	21	80.95	n/a	n/a	0.02	NP
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-MW-1</b>	<b>-1.166</b>	<b>-76</b>	<b>-73</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ARSENIC, TOTAL (UG/L)	R-MW-2	0.6413	11	73	No	20	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-3	-4.514	-37	-73	No	20	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-4	0.8073	72	73	No	20	0	n/a	n/a	0.02	NP
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-MW-5</b>	<b>-0.4277</b>	<b>-134</b>	<b>-73</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ARSENIC, TOTAL (UG/L)	R-MW-6	0.04899	18	58	No	17	17.65	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-7	4.838	70	78	No	21	0	n/a	n/a	0.02	NP
<b>BARIUM, TOTAL (UG/L)</b>	<b>R-MW-1</b>	<b>3.377</b>	<b>72</b>	<b>68</b>	<b>Yes</b>	<b>19</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>BARIUM, TOTAL (UG/L)</b>	<b>R-MW-2</b>	<b>-0.8375</b>	<b>-75</b>	<b>-73</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
BARIUM, TOTAL (UG/L)	R-MW-3	0.5781	16	73	No	20	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-4	8.696	71	73	No	20	0	n/a	n/a	0.02	NP
<b>BARIUM, TOTAL (UG/L)</b>	<b>R-MW-5</b>	<b>-7.676</b>	<b>-90</b>	<b>-68</b>	<b>Yes</b>	<b>19</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
BARIUM, TOTAL (UG/L)	R-MW-6	0.4007	6	68	No	19	0	n/a	n/a	0.02	NP
<b>BARIUM, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>-11.93</b>	<b>-95</b>	<b>-78</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
BERYLLIUM, TOTAL (UG/L)	R-MW-1	-0.00...	-24	-48	No	15	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-2	0	-10	-48	No	15	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-3	0	-4	-48	No	15	93.33	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-4	0	-10	-48	No	15	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-5	0	-10	-48	No	15	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-6	0	-4	-48	No	15	93.33	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-7	0	4	48	No	15	93.33	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-1	0.002058	30	58	No	17	82.35	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-2	0.03479	58	63	No	18	16.67	n/a	n/a	0.02	NP
<b>CADMIUM, TOTAL (UG/L)</b>	<b>R-MW-3</b>	<b>0.02954</b>	<b>71</b>	<b>63</b>	<b>Yes</b>	<b>18</b>	<b>44.44</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
CADMIUM, TOTAL (UG/L)	R-MW-4	0.00214	43	63	No	18	77.78	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-5	0.001968	63	63	No	18	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-6	0.001569	53	58	No	17	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-7	0.00222	56	68	No	19	78.95	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-1	0	-3	-63	No	18	55.56	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-2	-0.02369	-15	-63	No	18	27.78	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-3	-0.06608	-34	-63	No	18	27.78	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-4	-0.03416	-25	-58	No	17	35.29	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-5	-0.03461	-36	-63	No	18	27.78	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-6	-0.0111	-13	-53	No	16	62.5	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-7	0.007228	12	68	No	19	42.11	n/a	n/a	0.02	NP
<b>COBALT, TOTAL (UG/L)</b>	<b>R-MW-1</b>	<b>0.03219</b>	<b>60</b>	<b>53</b>	<b>Yes</b>	<b>16</b>	<b>87.5</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>COBALT, TOTAL (UG/L)</b>	<b>R-MW-2</b>	<b>0.024</b>	<b>78</b>	<b>53</b>	<b>Yes</b>	<b>16</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>COBALT, TOTAL (UG/L)</b>	<b>R-MW-3</b>	<b>0.03402</b>	<b>88</b>	<b>53</b>	<b>Yes</b>	<b>16</b>	<b>93.75</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
COBALT, TOTAL (UG/L)	R-MW-4	0.02279	46	53	No	16	81.25	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-5	0.01305	33	53	No	16	87.5	n/a	n/a	0.02	NP
<b>COBALT, TOTAL (UG/L)</b>	<b>R-MW-6</b>	<b>0.02662</b>	<b>56</b>	<b>48</b>	<b>Yes</b>	<b>15</b>	<b>93.33</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>COBALT, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>0.03942</b>	<b>79</b>	<b>58</b>	<b>Yes</b>	<b>17</b>	<b>76.47</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
FLUORIDE, TOTAL (MG/L)	R-MW-1	-0.01331	-45	-106	No	26	15.38	n/a	n/a	0.02	NP

## Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/19/2023, 1:23 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-MW-2	0.03467	65	89	No	23	0	n/a	n/a	0.02	NP
<b>FLUORIDE, TOTAL (MG/L)</b>	<b>R-MW-3</b>	<b>0.05032</b>	<b>119</b>	<b>84</b>	<b>Yes</b>	<b>22</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
FLUORIDE, TOTAL (MG/L)	R-MW-4	-0.01823	-70	-89	No	23	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-5	0.009111	79	84	No	22	4.545	n/a	n/a	0.02	NP
<b>FLUORIDE, TOTAL (MG/L)</b>	<b>R-MW-6</b>	<b>0.01516</b>	<b>111</b>	<b>84</b>	<b>Yes</b>	<b>22</b>	<b>4.545</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
FLUORIDE, TOTAL (MG/L)	R-MW-7	-0.01333	-52	-101	No	25	12	n/a	n/a	0.02	NP
<b>LEAD, TOTAL (UG/L)</b>	<b>R-MW-1</b>	<b>0.1387</b>	<b>76</b>	<b>63</b>	<b>Yes</b>	<b>18</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
LEAD, TOTAL (UG/L)	R-MW-2	0.4638	37	68	No	19	5.263	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-3	-0.2722	-45	-68	No	19	36.84	n/a	n/a	0.02	NP
<b>LEAD, TOTAL (UG/L)</b>	<b>R-MW-4</b>	<b>0.1338</b>	<b>65</b>	<b>63</b>	<b>Yes</b>	<b>18</b>	<b>94.44</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>LEAD, TOTAL (UG/L)</b>	<b>R-MW-5</b>	<b>0.1481</b>	<b>69</b>	<b>63</b>	<b>Yes</b>	<b>18</b>	<b>83.33</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
LEAD, TOTAL (UG/L)	R-MW-6	0.1655	58	63	No	18	77.78	n/a	n/a	0.02	NP
<b>LEAD, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>0.1481</b>	<b>84</b>	<b>68</b>	<b>Yes</b>	<b>19</b>	<b>89.47</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
LITHIUM, TOTAL (UG/L)	R-MW-1	0	22	73	No	20	95	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-2	0	22	73	No	20	85	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-3	0.248	72	73	No	20	85	n/a	n/a	0.02	NP
<b>LITHIUM, TOTAL (UG/L)</b>	<b>R-MW-4</b>	<b>-1.399</b>	<b>-98</b>	<b>-73</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
LITHIUM, TOTAL (UG/L)	R-MW-5	0	4	73	No	20	50	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-6	0	13	68	No	19	73.68	n/a	n/a	0.02	NP
<b>LITHIUM, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>-0.7492</b>	<b>-66</b>	<b>-63</b>	<b>Yes</b>	<b>18</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>MERCURY, TOTAL (UG/L)</b>	<b>R-MW-1</b>	<b>0.004083</b>	<b>45</b>	<b>44</b>	<b>Yes</b>	<b>14</b>	<b>92.86</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>MERCURY, TOTAL (UG/L)</b>	<b>R-MW-2</b>	<b>0.004083</b>	<b>45</b>	<b>44</b>	<b>Yes</b>	<b>14</b>	<b>92.86</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>MERCURY, TOTAL (UG/L)</b>	<b>R-MW-3</b>	<b>0.004081</b>	<b>45</b>	<b>44</b>	<b>Yes</b>	<b>14</b>	<b>92.86</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>MERCURY, TOTAL (UG/L)</b>	<b>R-MW-4</b>	<b>0.004089</b>	<b>45</b>	<b>44</b>	<b>Yes</b>	<b>14</b>	<b>92.86</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>MERCURY, TOTAL (UG/L)</b>	<b>R-MW-5</b>	<b>0.004089</b>	<b>45</b>	<b>44</b>	<b>Yes</b>	<b>14</b>	<b>92.86</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>MERCURY, TOTAL (UG/L)</b>	<b>R-MW-6</b>	<b>0.004081</b>	<b>52</b>	<b>44</b>	<b>Yes</b>	<b>14</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>MERCURY, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>0.004662</b>	<b>75</b>	<b>48</b>	<b>Yes</b>	<b>15</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
MOLYBDENUM, TOTAL (UG/L)	R-MW-1	2.629	26	73	No	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-2	-5.989	-45	-68	No	19	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-3	7.184	8	73	No	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-4	-5.867	-70	-73	No	20	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-5	0.01068	18	73	No	20	80	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-6	0.09831	22	73	No	20	40	n/a	n/a	0.02	NP
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-MW-7</b>	<b>-19.16</b>	<b>-135</b>	<b>-78</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
RADIUM [226 + 228] (PCI/L)	R-MW-1	0.01294	9	73	No	20	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-2	0.05955	53	68	No	19	94.74	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-3	0.01361	26	73	No	20	95	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-4	0.007653	13	73	No	20	85	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-5	0.001233	4	73	No	20	80	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-6	-0.00...	-6	-73	No	20	75	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-7	0.01951	44	78	No	21	90.48	n/a	n/a	0.02	NP
<b>SELENIUM, TOTAL (UG/L)</b>	<b>R-MW-1</b>	<b>-1.006</b>	<b>-147</b>	<b>-73</b>	<b>Yes</b>	<b>20</b>	<b>30</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
SELENIUM, TOTAL (UG/L)	R-MW-2	0.08203	27	73	No	20	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-3	-0.01596	-35	-68	No	19	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-4	0	-22	-73	No	20	65	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-5	0	-2	-73	No	20	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-6	0	-3	-68	No	19	15.79	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-7	0	5	78	No	21	80.95	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-1	-0.02666	-37	-48	No	15	93.33	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-2	-0.00...	-26	-53	No	16	100	n/a	n/a	0.02	NP

# Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/19/2023, 1:23 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
THALLIUM, TOTAL (UG/L)	R-MW-3	-0.00...	-25	-48	No	15	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-4	-0.00...	-25	-48	No	15	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-5	-0.00...	-25	-48	No	15	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-6	-0.02526	-37	-48	No	15	93.33	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-7	-0.00...	-36	-53	No	16	93.75	n/a	n/a	0.02	NP

# Appendix D

## October-November 2022 Corrective Action Statistical Evaluation



## TECHNICAL MEMORANDUM

**DATE** February 22, 2023

**Project No.** GL153140604

**TO** Bill Kutosky  
Ameren Missouri

**CC** Susan Knowles, Craig Giesmann, Charlie Henderson

**FROM** Jeffrey Ingram (WSP), Mark Haddock  
(Rocksmith Geoengineering, LLC), Mark  
Sandfort (WSP)

**EMAIL** Jeffrey.Ingram@wsp.com

### **CORRECTIVE ACTION STATISTICAL EVALUATION FOR RCPA SURFACE IMPOUNDMENT RUSH ISLAND ENERGY CENTER JEFFERSON COUNTY, MISSOURI**

This Technical Memorandum provides the results of the Corrective Action Monitoring statistical analyses from the October-November 2022 sampling event for the RCPA Surface Impoundment at the Rush Island Energy Center (RIEC) located in Jefferson County, Missouri. As outlined in the remedy selection report for the RCPA, Corrective Action at the RCPA consists of two phases, as follows:

- 1) Source control, stabilization, and containment of CCR by installation of a low-permeability geomembrane cap.
- 2) Once source control is achieved, monitor the natural attenuation (MNA) of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modeling evaluations to document concentration trends following Corrective Action.

Phase 1 of Corrective Action commenced in August 2019, and was substantially completed on December 15, 2020 with the installation of a low permeability cover system. Included in this memorandum is a brief summary of constituents that are currently in exceedance of the groundwater protection standard (GWPS), a list of site-specific Groundwater Protection Standards (**Table 1**), and the Sanitas Technologies™ (Sanitas) statistical software output for each of the Appendix IV parameters (**Appendix A**).

The initial Corrective Action sampling event was completed in April 2020, with a total of seven (7) sampling events completed for the Corrective Action Program at the RIEC to date. This analysis uses results collected since the beginning of Corrective Action monitoring (April 2020) for the determination of constituents exceeding the GWPS, as data collected prior to this time was collected during active conditions of the RCPA, prior to the cessation of CCR disposal in the RCPA and are not representative of groundwater conditions since the initiation of closure.

Several constituents were reported at concentrations below the Practical Quantitation Limit (PQL) during the April 2020, 2021, and 2022 sampling events including beryllium, cadmium, cobalt, mercury, and thallium. Because these constituents were not detected during the initial Corrective Action sampling events, they were not re-sampled/tested during the subsequent semi-annual sampling events in each calendar year. Therefore, only three results are available for beryllium, cadmium, cobalt, mercury, and thallium; thus, confidence intervals could not be calculated because Corrective Action statistical analyses require a minimum of four (4) sampling events. As a result, beryllium, cadmium, cobalt, mercury, and thallium are not evaluated in this statistical evaluation.



The Appendix IV constituents were evaluated for exceedances above the GWPS using the methods and procedures outlined in the Corrective Action Groundwater Monitoring Plan's (CAGMP's) Statistical Analysis Plan (SAP). An outlier analysis was completed as the first step of the statistical evaluation. The outlier analysis was performed only on the results collected as a part of the Corrective Action Monitoring Program. The following outliers were removed prior to the calculation of confidence limits.

- Arsenic
  - R-P-22S at 8.3 micrograms per liter ( $\mu\text{g/L}$ ) on 4/14/2022. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.
- Fluoride
  - R-P-10S at Non-Detect (ND) on 4/12/2022. The result is statistically lower than other values at the same well. The lower result has not been confirmed during subsequent sampling events and is an outlier.
  - R-P-29D at 0.89 milligrams per liter (mg/L)  $\mu\text{g/L}$  on 4/15/2022. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.

An analysis of the outliers removed to date was completed and the following statistical outlier that was previously removed was added back into the dataset prior to the calculation of confidence limits.

- Fluoride
  - R-P-22S at ND on 4/22/2021. Was removed in October 2021 as an outlier because the result was statistically lower than other values at the same well. However, based on review of subsequent sampling data the well displays larger variability in Fluoride concentrations than observed with the data available during the October 2021 statistical evaluation. Based on this review, the result is no longer considered an outlier.

Following the outlier analysis, the second step in the statistical analysis was to calculate confidence intervals and compare those to the GWPS<sup>1</sup>. As stated above, the confidence intervals shown in Appendix A are calculated based on results since April 2020. Lithium at R-P-19I is a new exceedance of the GWPS based on the groundwater results of the October-November 2022 sampling event. The other exceedances remained the same for this event as those reported for the April 2022 event. A summary of constituents exceeding the GWPS at corresponding well(s) is as follows:

- Arsenic at R-P-05S, R-P-17I<sup>2</sup>, R-P-17S, R-P-19I<sup>2</sup>, and R-P-21S
- Lead at R-P-17I<sup>2</sup> and R-P-19I<sup>2</sup>
- Lithium at R-P-19I, R-P-21D<sup>2</sup> and R-P-22S<sup>2</sup>

---

<sup>1</sup> The GWPS is the same limit that was used during Assessment Monitoring period, which was the groundwater monitoring phase immediately prior to Corrective Action.

<sup>2</sup> Based on visual (qualitative) review of the data, these data sets are showing an overall downward trend since April 2020.

■ Molybdenum at R-P-10S, R-P-17D, R-P-17I, R-P-19D, R-P-19I<sup>2</sup>, R-P-21D, R-P-21I, and R-P-22D


Typically, following the calculation of confidence intervals, trend tests would be completed using the Sen's Slope / Mann Kendall analysis as outlined in the statistical analysis plan. However, Sen's Slope / Mann Kendall analysis require 8 independent sampling results as outlined in the USEPA Unified Guidance. Since only 7 sampling events have occurred since the cessation of CCR disposal into the RCPA, the Sen's Slope / Mann Kendall test cannot be completed. Therefore, no constituent well pairs were determined to have a significant trend and no trend charts are included with this Technical Memorandum. However, a visual/qualitative review of the existing data was performed and those well/constituent combinations showing downward trends were identified (see summary above in footnote 2). The remaining well/constituent combinations are showing no specific trend or possibly slight upward trends. Based on the current sampling schedule, it is anticipated that eight sampling events will be available following the Spring 2023 sampling event, and trend analyses will be completed this year.

Using corrective action statistical methods, GWPS exceedances are reported for Arsenic, Lead, Lithium, and Molybdenum. However, variability in the initial groundwater sampling results during and directly after the closure of the RCPA is expected, especially at wells nearest the CCR unit, where closure grading and disturbance activities were greatest. The concentrations reported in these results following closure are expected to be variable, but are expected to decrease over time as stabilization occurs and supplemental corrective measures are put into service.

WSP appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please call our office at (314) 984-8800.

Sincerely,

**WSP USA Inc.**



Jeffrey Ingram  
*Senior Consultant, Geologist*



Mark Sandfort, P.E., R.G.  
*Senior Engineering Principal*

Attachments: Table 1 – RCPA Groundwater Protection Standards  
Appendix A – Sanitas Confidence Interval Statistical Output

**Table 1 - RCPA Groundwater Protection Standards  
RCPA Surface Impoundment  
Rush Island Energy Center**

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring <sup>6</sup>
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	30	30
Barium	µg/L	2000	2000	550.5
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	2.372
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.2767
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	64.7	64.7
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.297
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:

1. µg/L - micrograms per liter
2. mg/L - milligrams per liter
3. pCi/L - picocuries per liter

4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) Drinking Water Standards and Health Advisories. <http://water.epa.gov/drink/contaminants/index.cfm>.

5. Health Based Groundwater Protection Standards (GWPS) were adopted for Appendix IV parameters without an MCL (i.e. cobalt, lithium, molybdenum, and lead). Information available at <https://www.epa.gov/coalash/coal-ash-rule>.

6. Values were calculated using statistical methods outlined for Detection Monitoring and are used for returning to Detection Monitoring based on available data to date.

7. DQR - Double Quantification Rule. If all baseline data are less than the Practical Quantitation Limit (PQL), then the DQR will be used. More information on the DQR is provided in the Statistical Analysis Plan.

8. Site GWPS is either the MCL/Health Based GWPS or based on background levels (calculated as described in the Statistical Analysis Plan for Assessment Monitoring).

9. GWPS and background values calculated using results up through April 2021 from monitoring wells MW-B1 and MW-B2.

Prepared by: EMS

Checked by: SSS

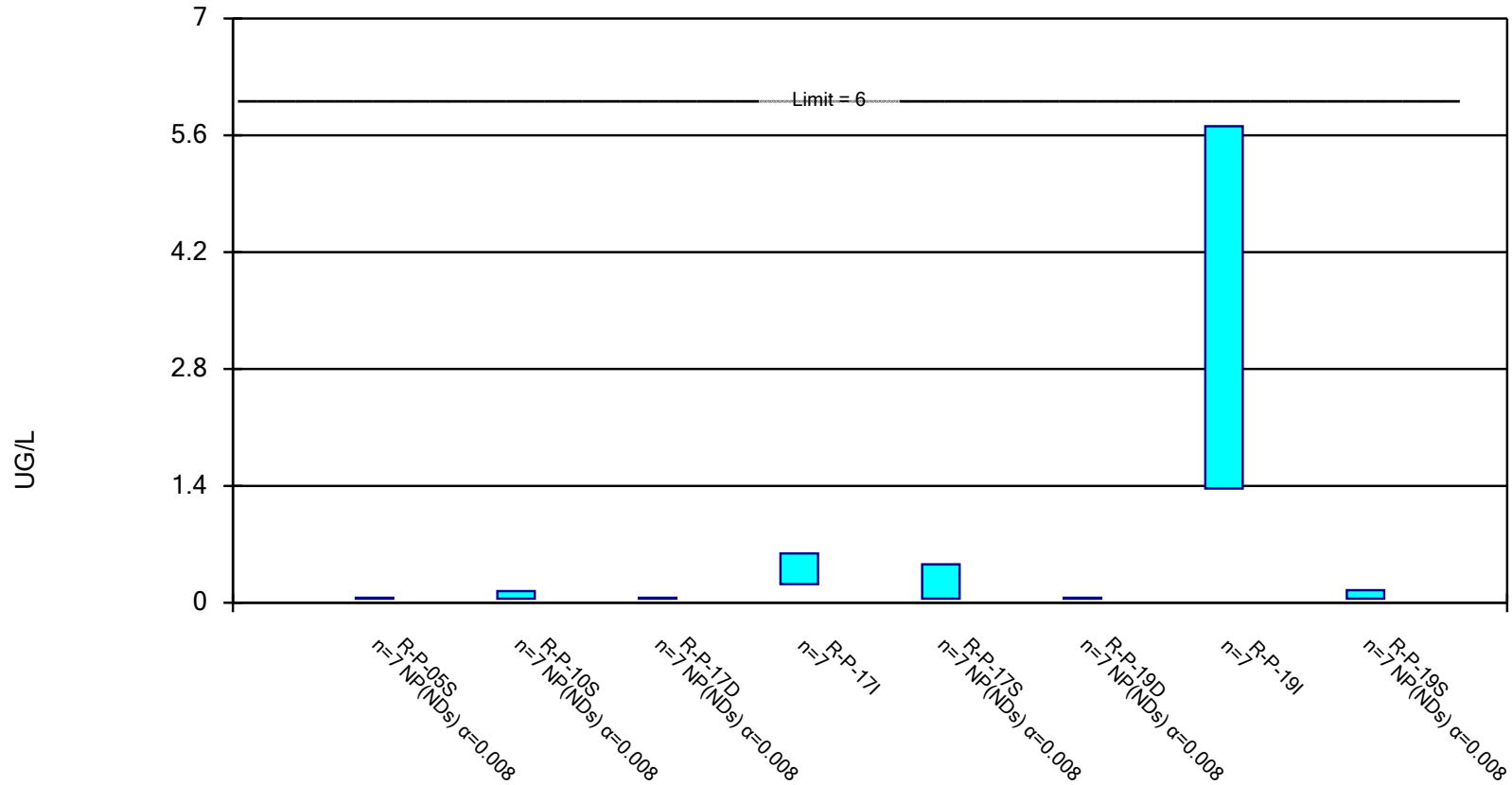
Reviewed by: MNH

**APPENDIX A**

**Sanitas Confidence Interval  
Statistical Output**

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based

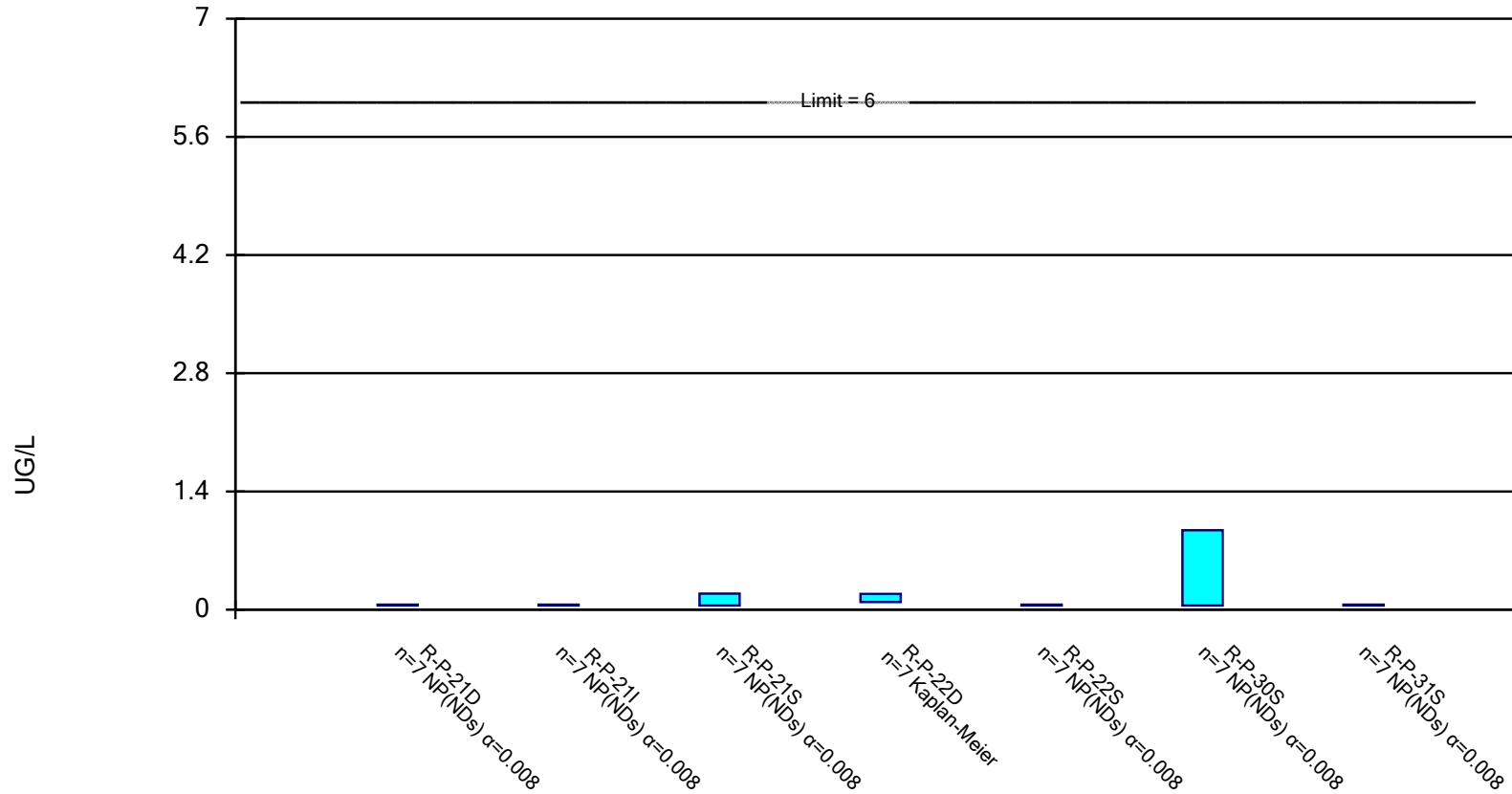


Constituent: ANTIMONY, TOTAL Analysis Run 2/2/2023 10:02 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based

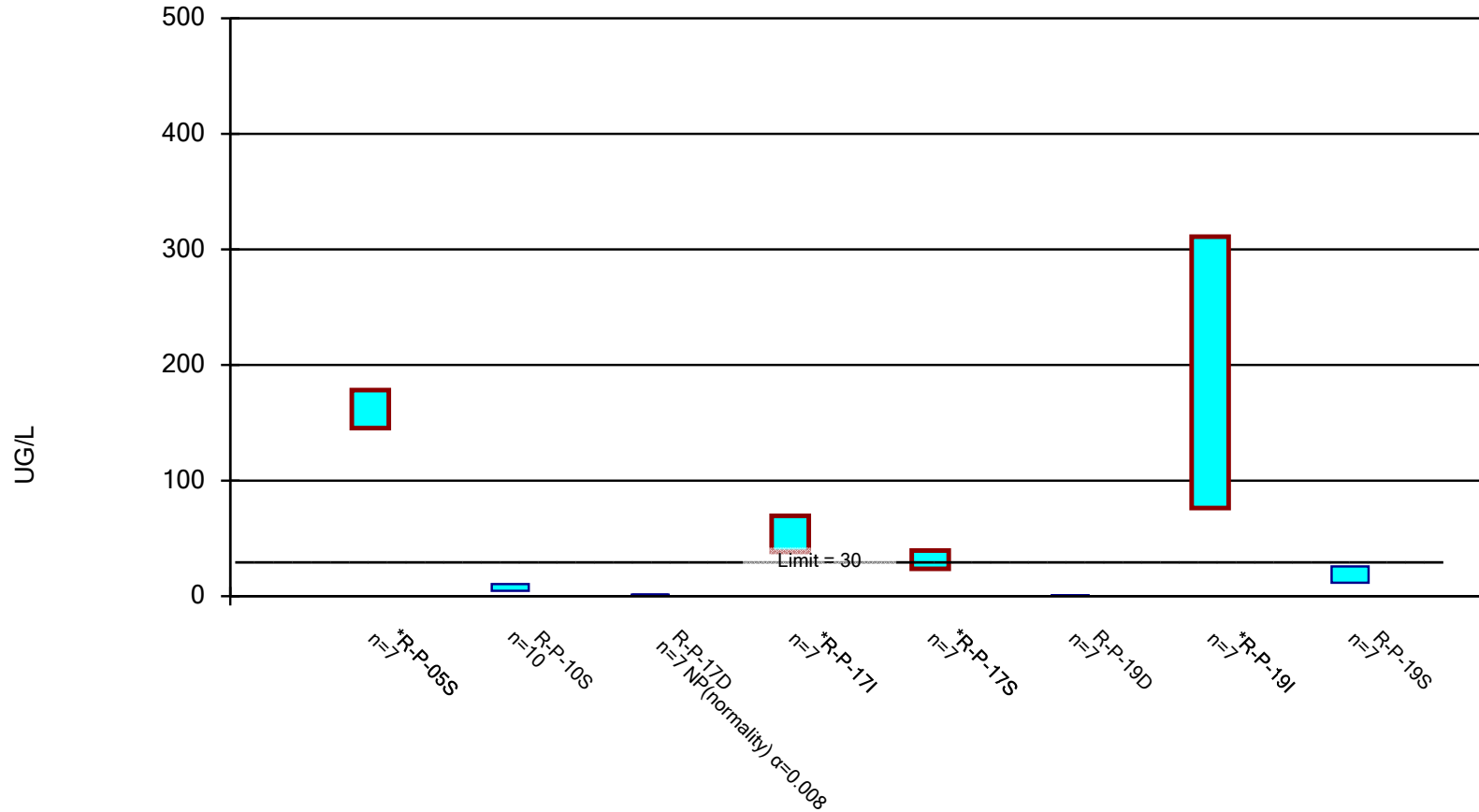


Constituent: ANTIMONY, TOTAL Analysis Run 2/2/2023 10:02 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on

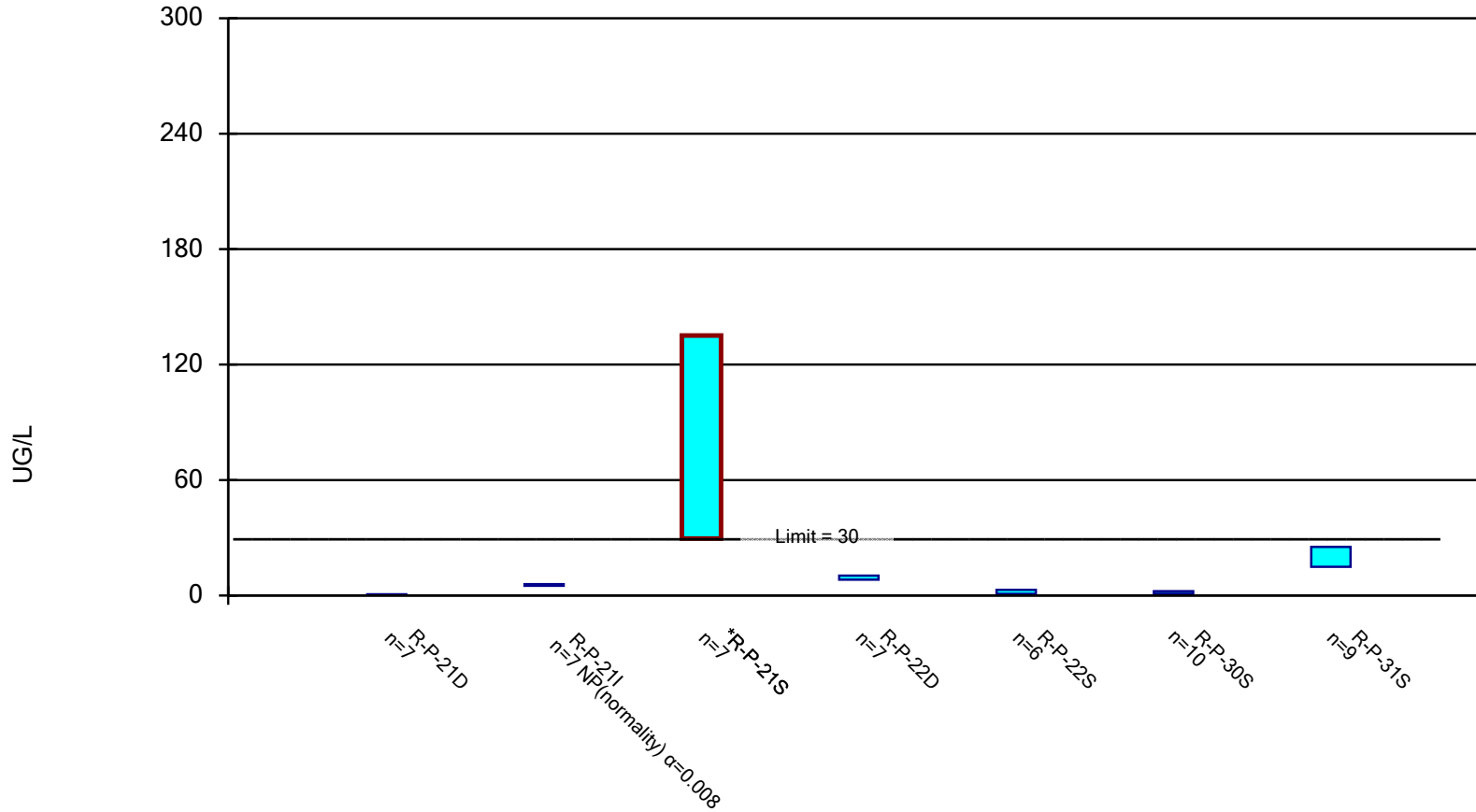


Constituent: ARSENIC, TOTAL Analysis Run 2/2/2023 10:02 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on



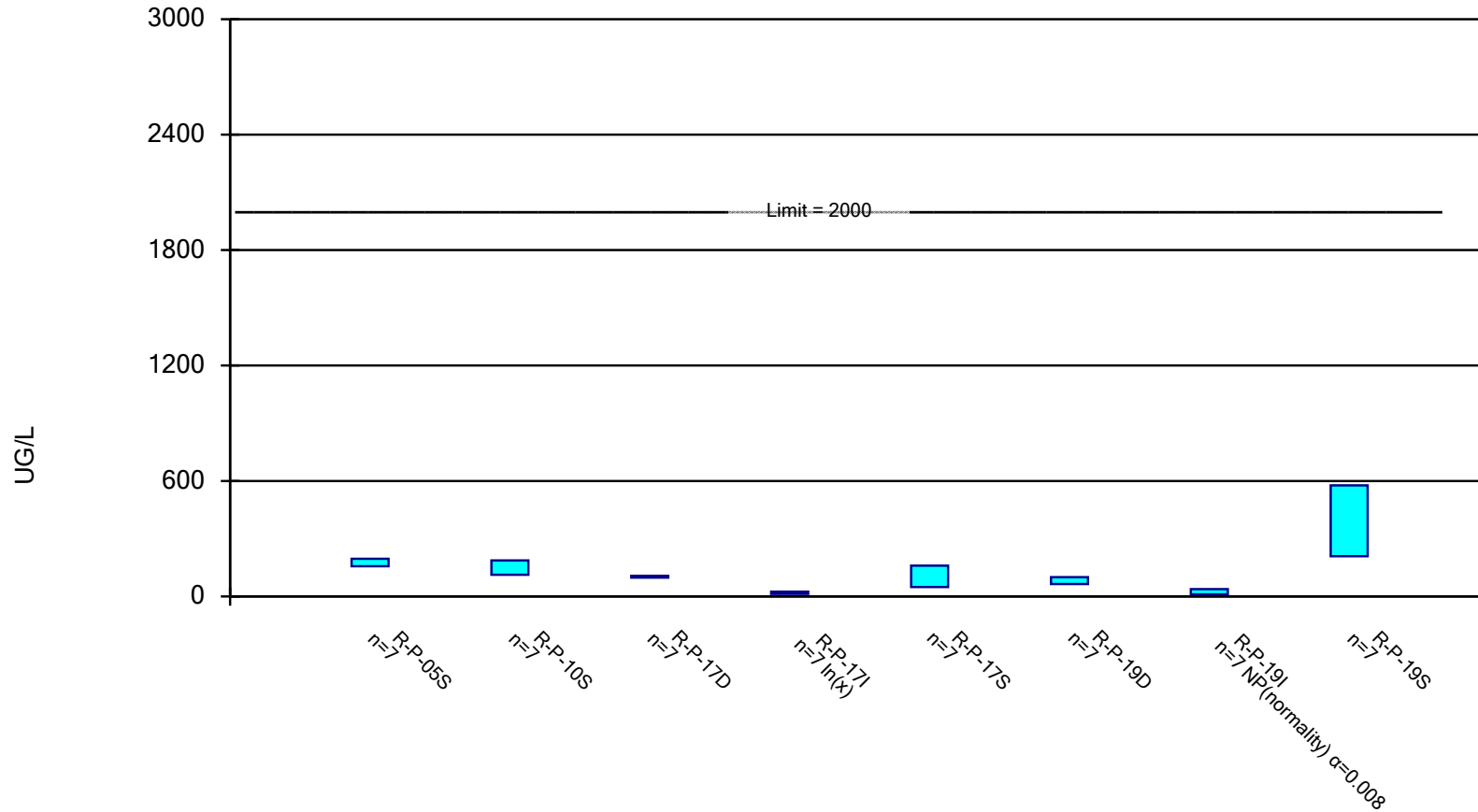
Constituent: ARSENIC, TOTAL Analysis Run 2/2/2023 10:02 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based

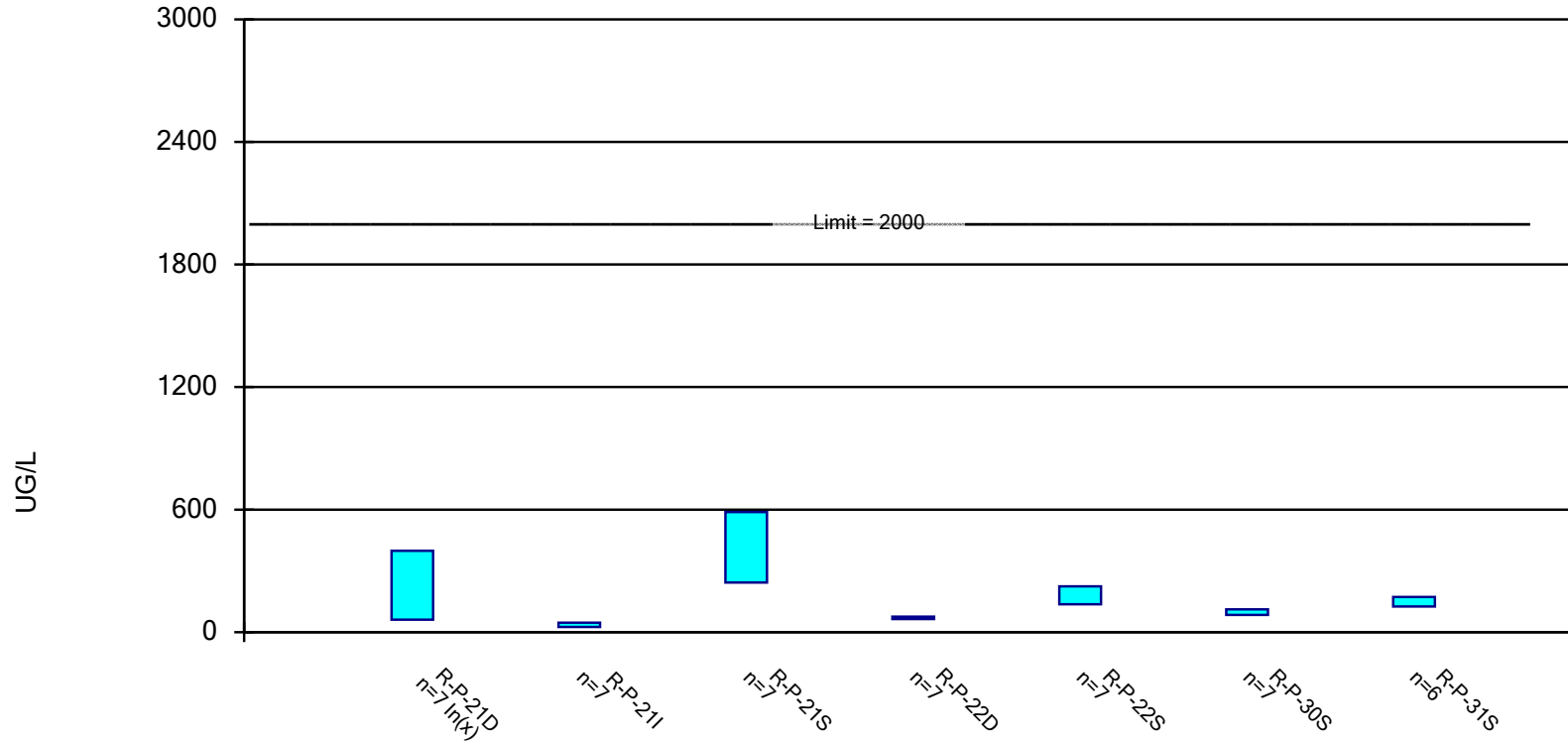


Constituent: BARIUM, TOTAL Analysis Run 2/2/2023 10:02 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

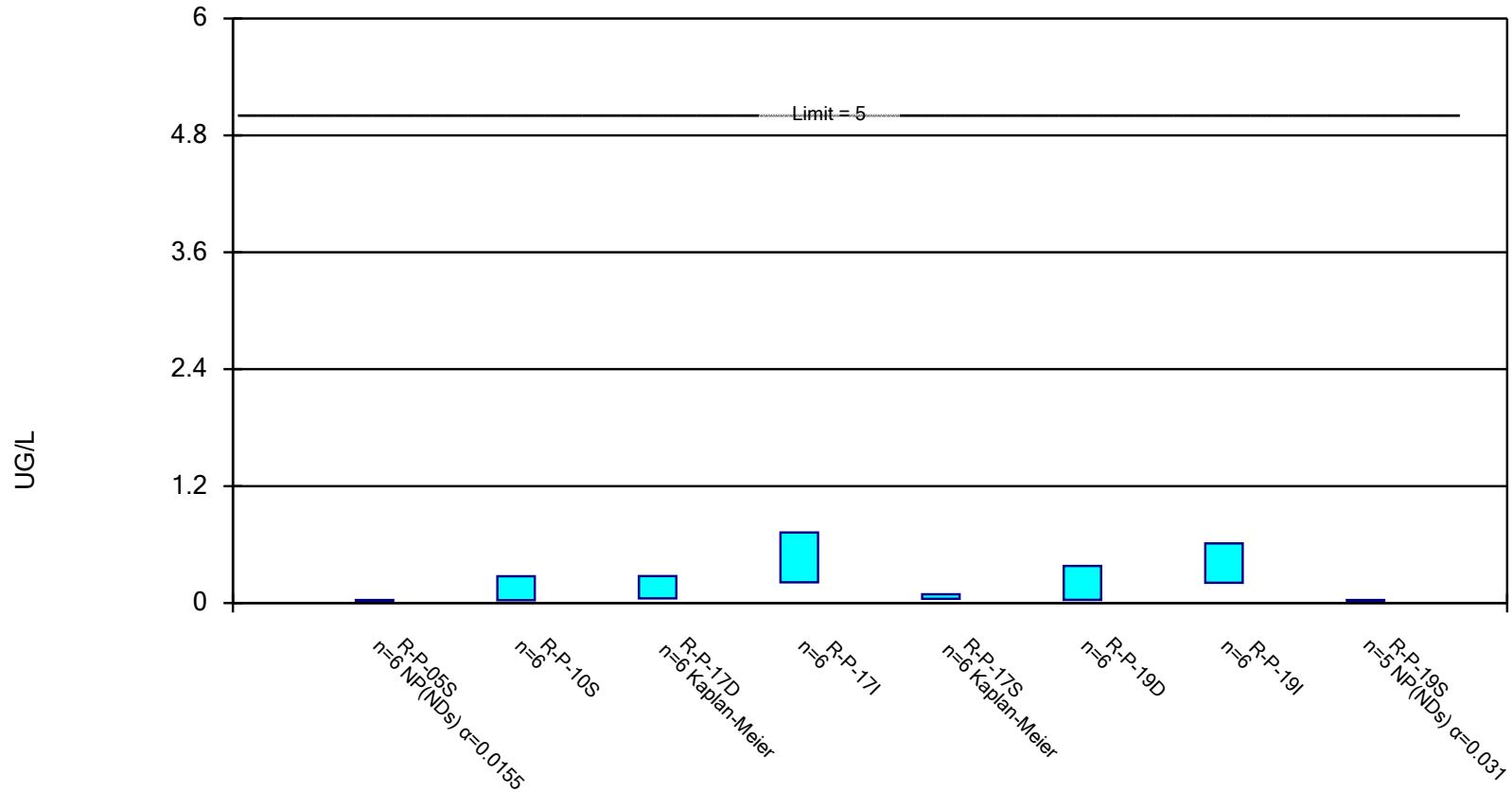


Constituent: BARIUM, TOTAL Analysis Run 2/2/2023 10:02 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based

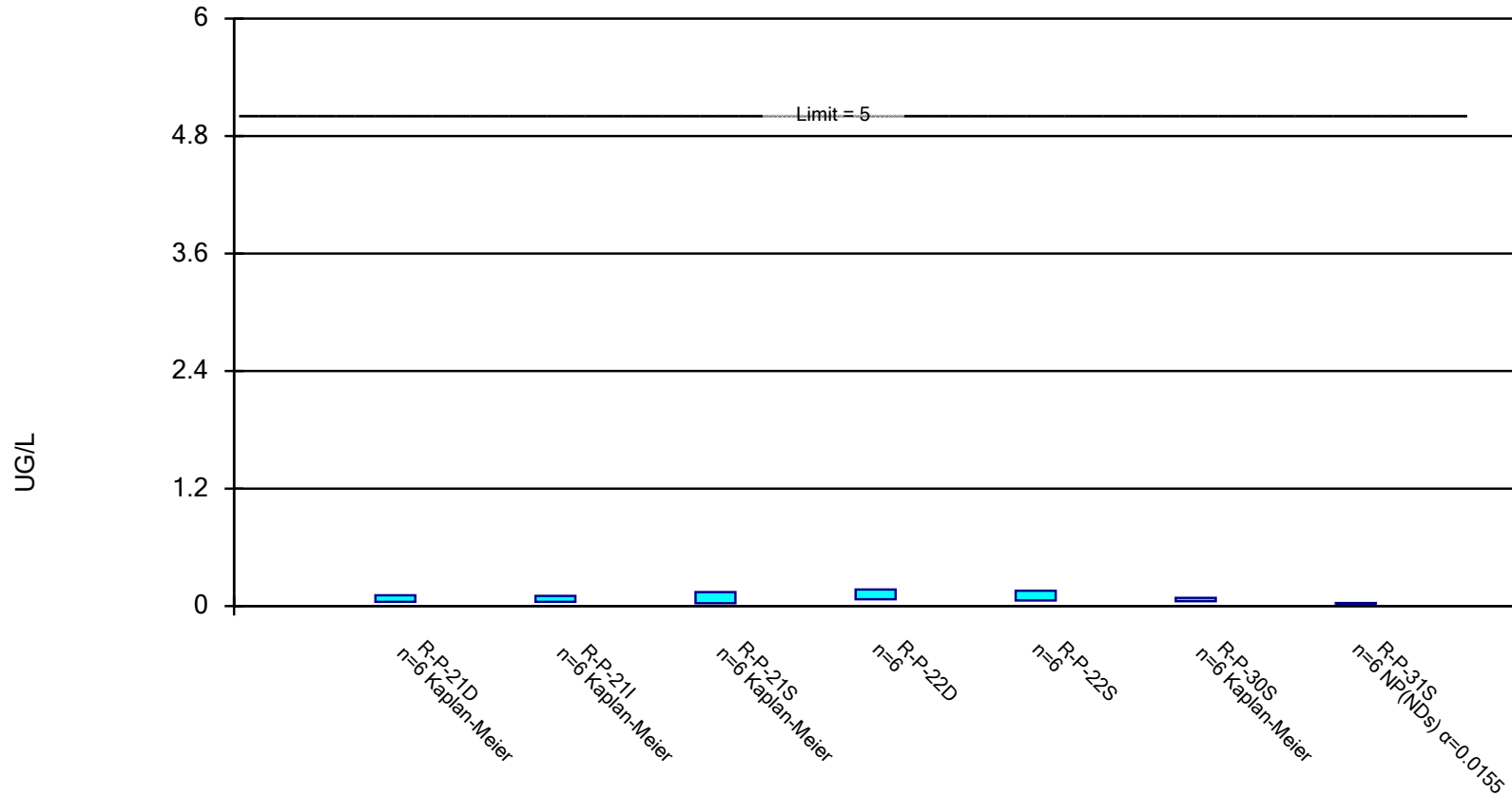


Constituent: CADMIUM, TOTAL Analysis Run 2/2/2023 10:02 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based

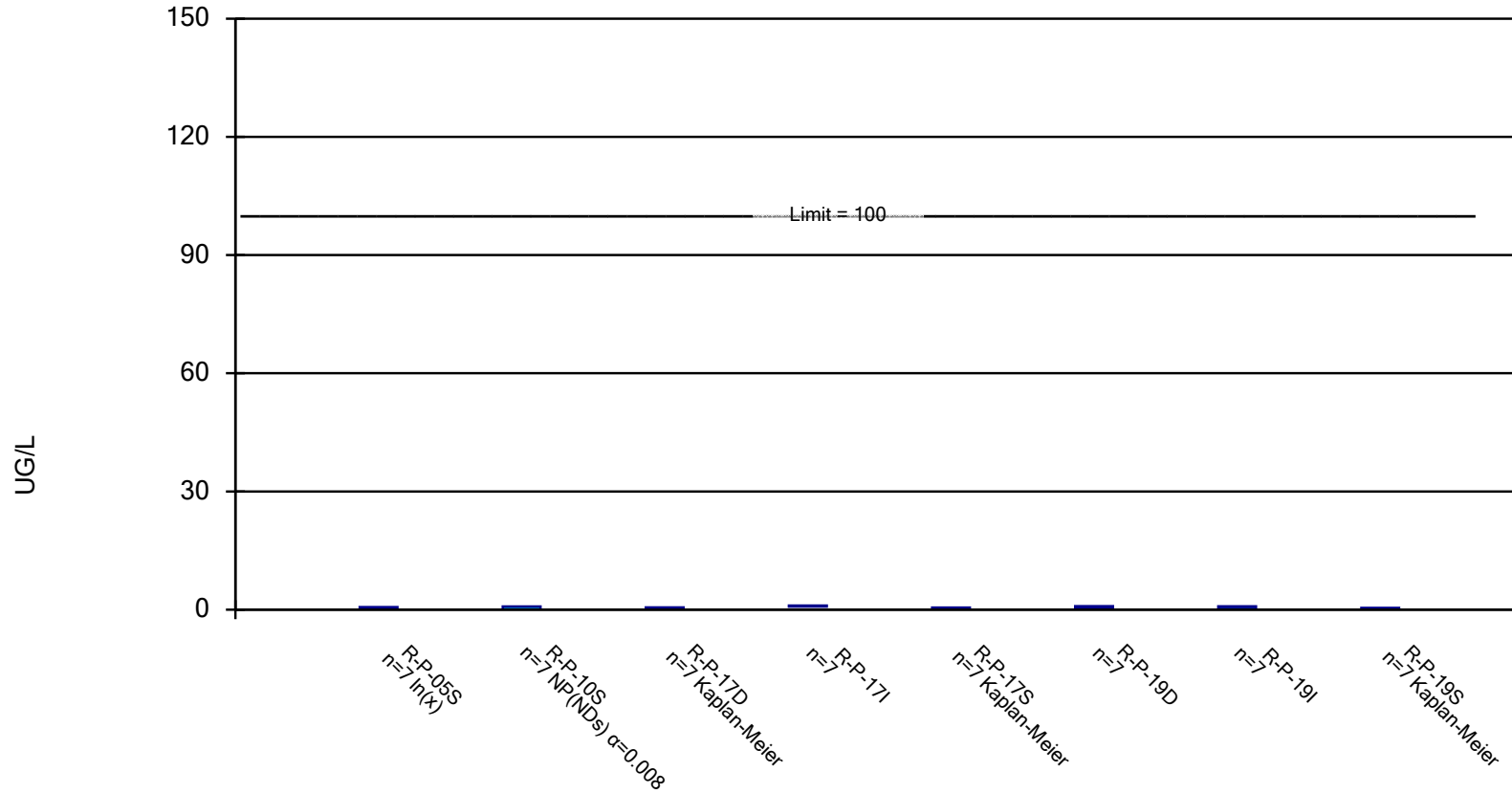


Constituent: CADMIUM, TOTAL Analysis Run 2/2/2023 10:02 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based

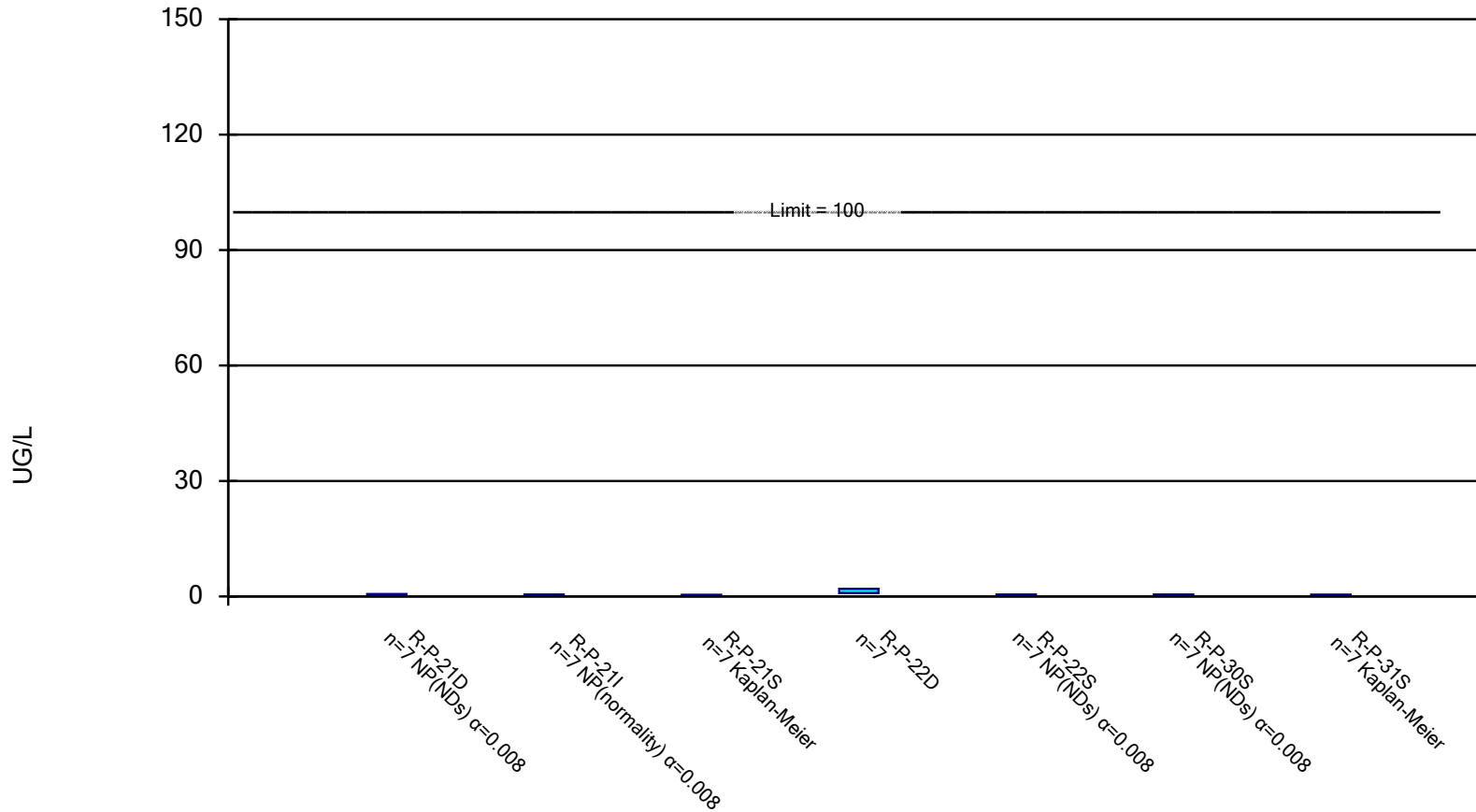


Constituent: CHROMIUM, TOTAL Analysis Run 2/2/2023 10:02 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based

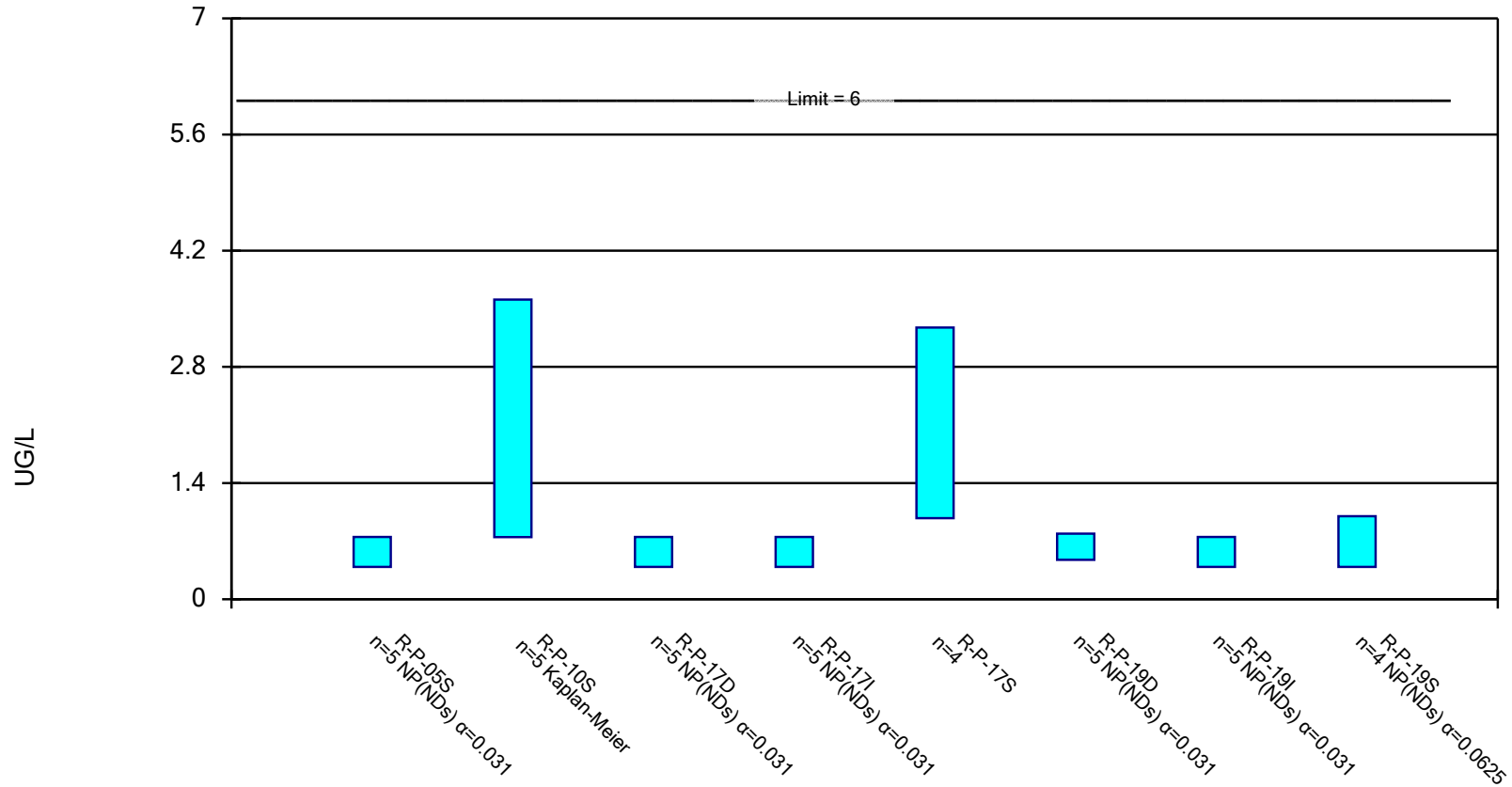


Constituent: CHROMIUM, TOTAL Analysis Run 2/2/2023 10:02 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based

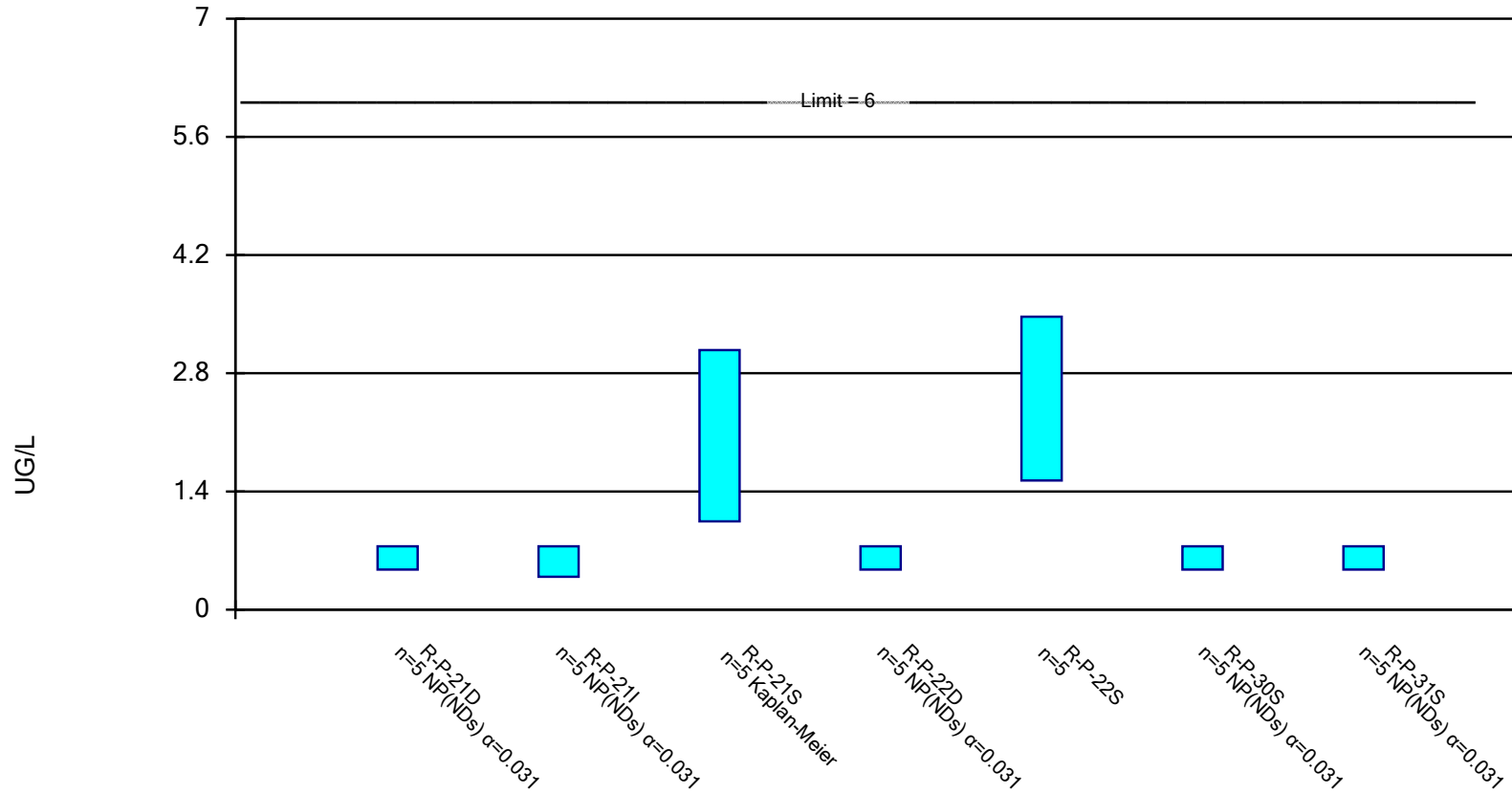


Constituent: COBALT, TOTAL Analysis Run 2/2/2023 10:02 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based



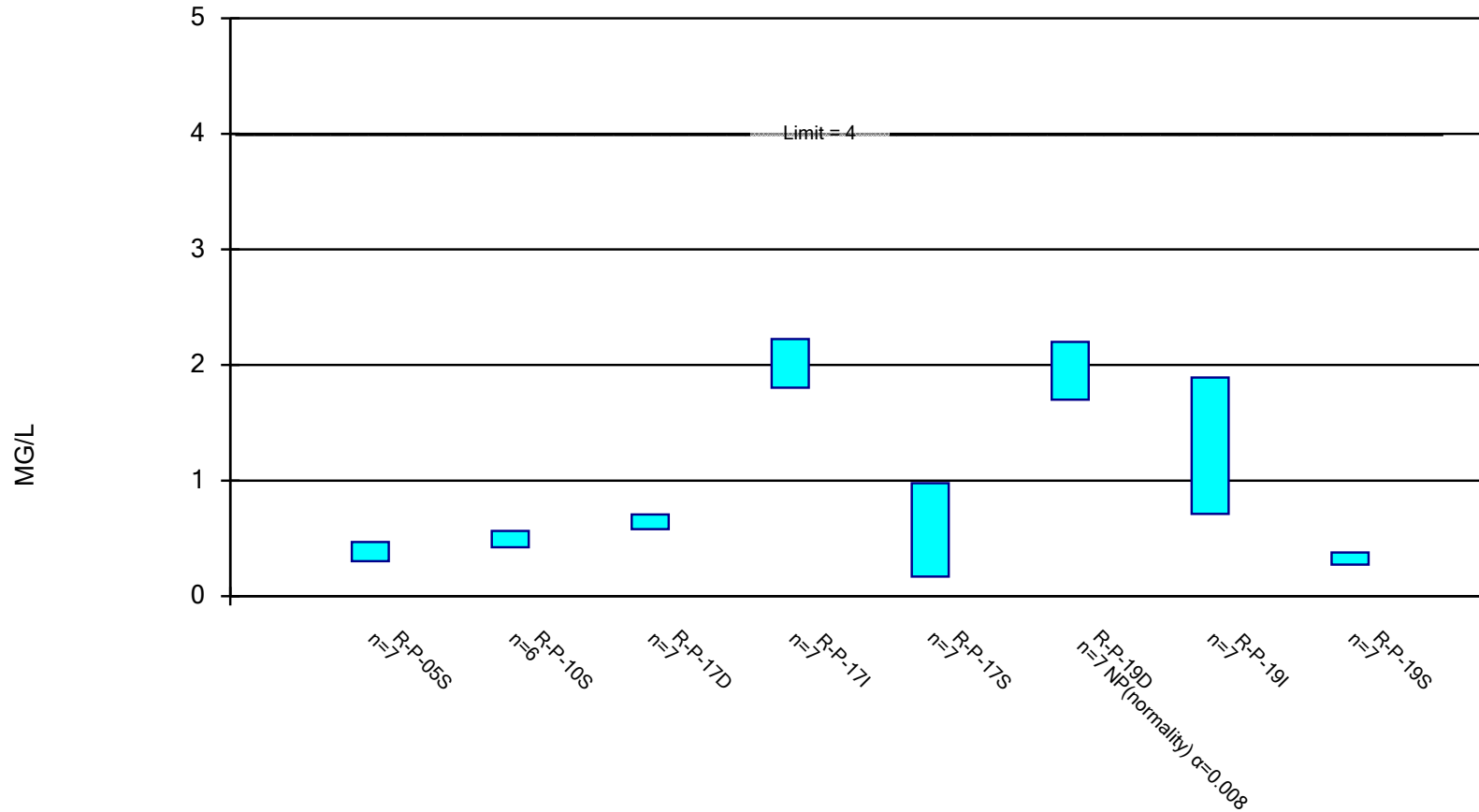
Constituent: COBALT, TOTAL Analysis Run 2/2/2023 10:02 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based

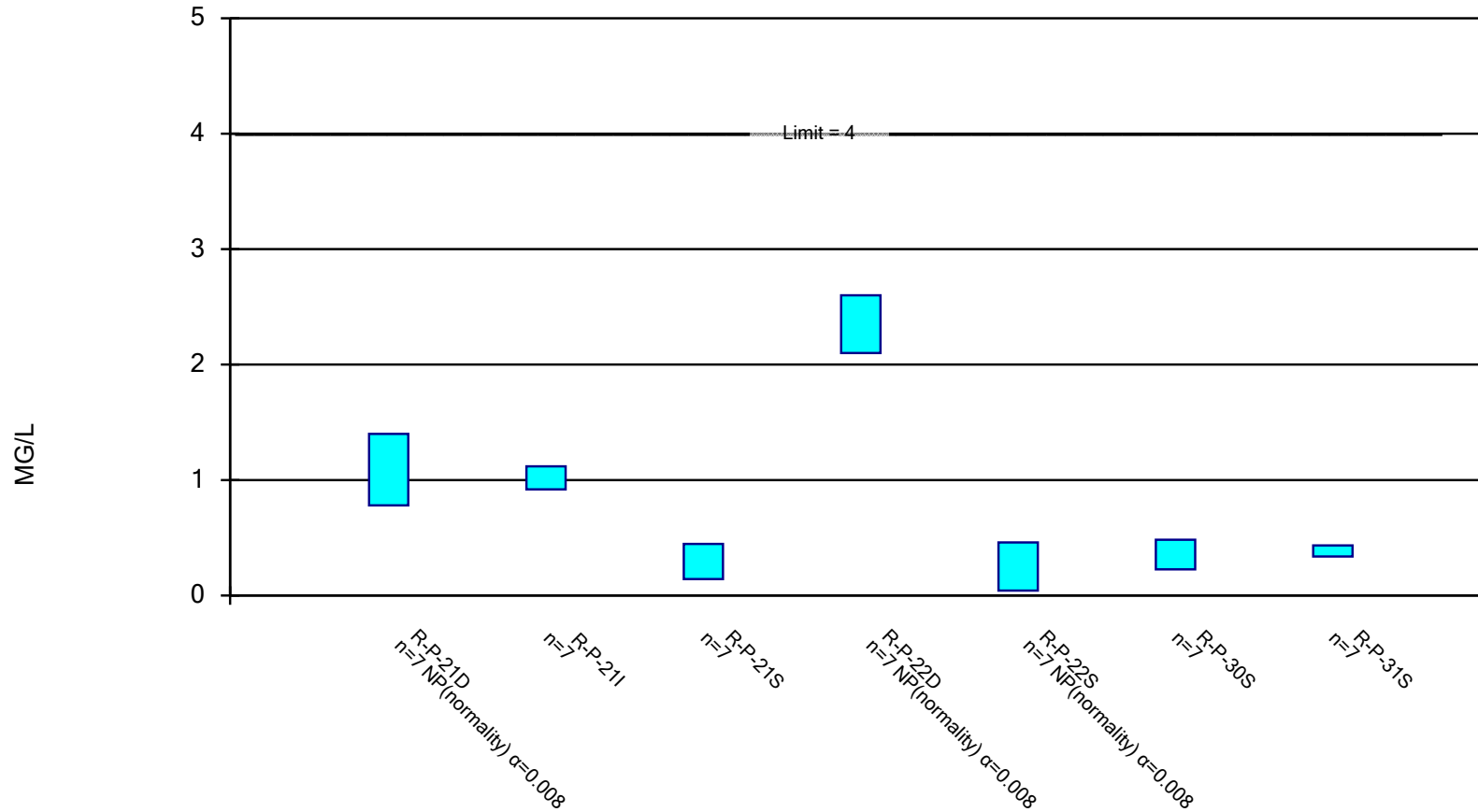


Constituent: FLUORIDE, TOTAL Analysis Run 2/2/2023 10:03 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based

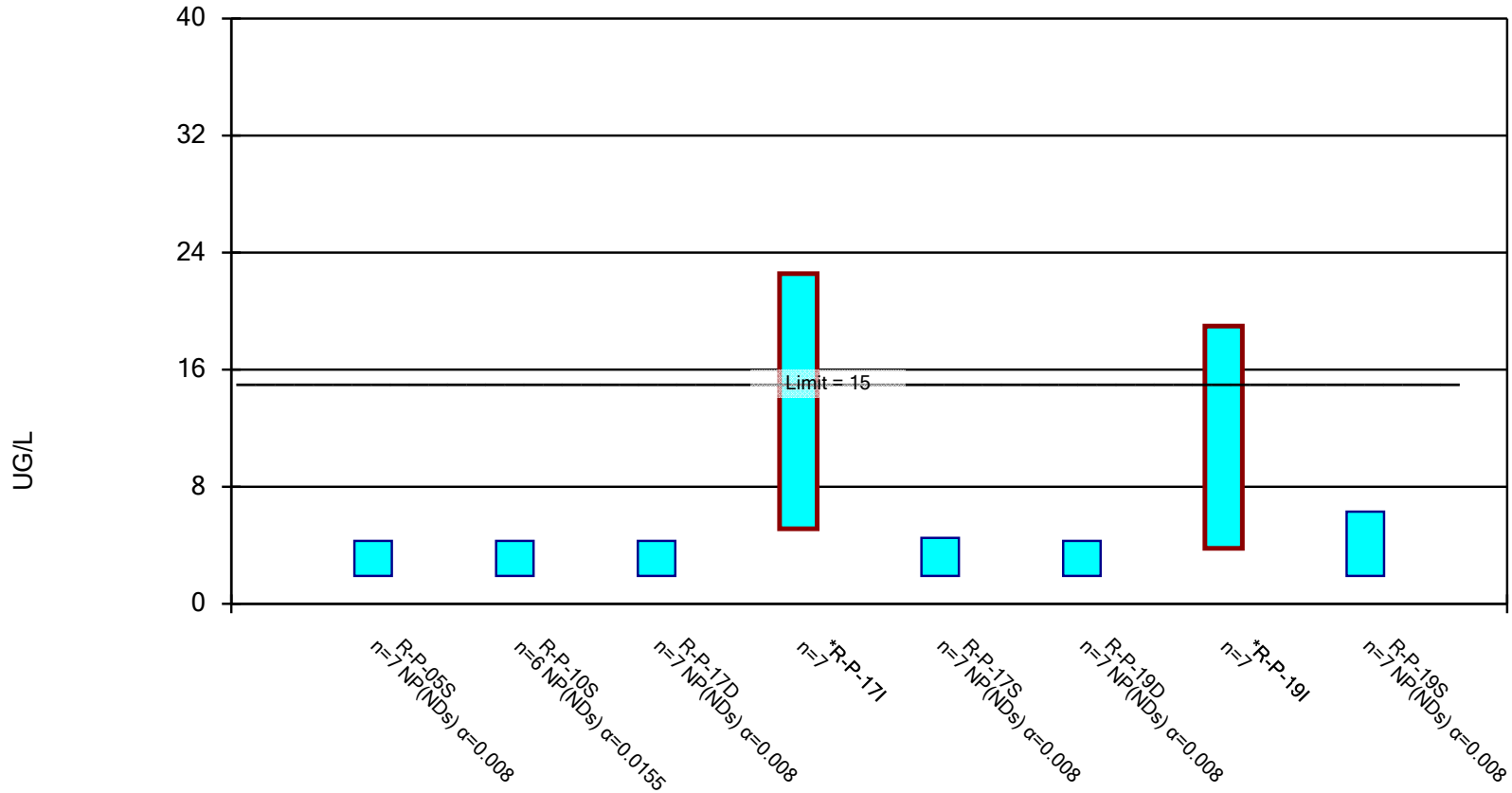


Constituent: FLUORIDE, TOTAL Analysis Run 2/2/2023 10:03 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on

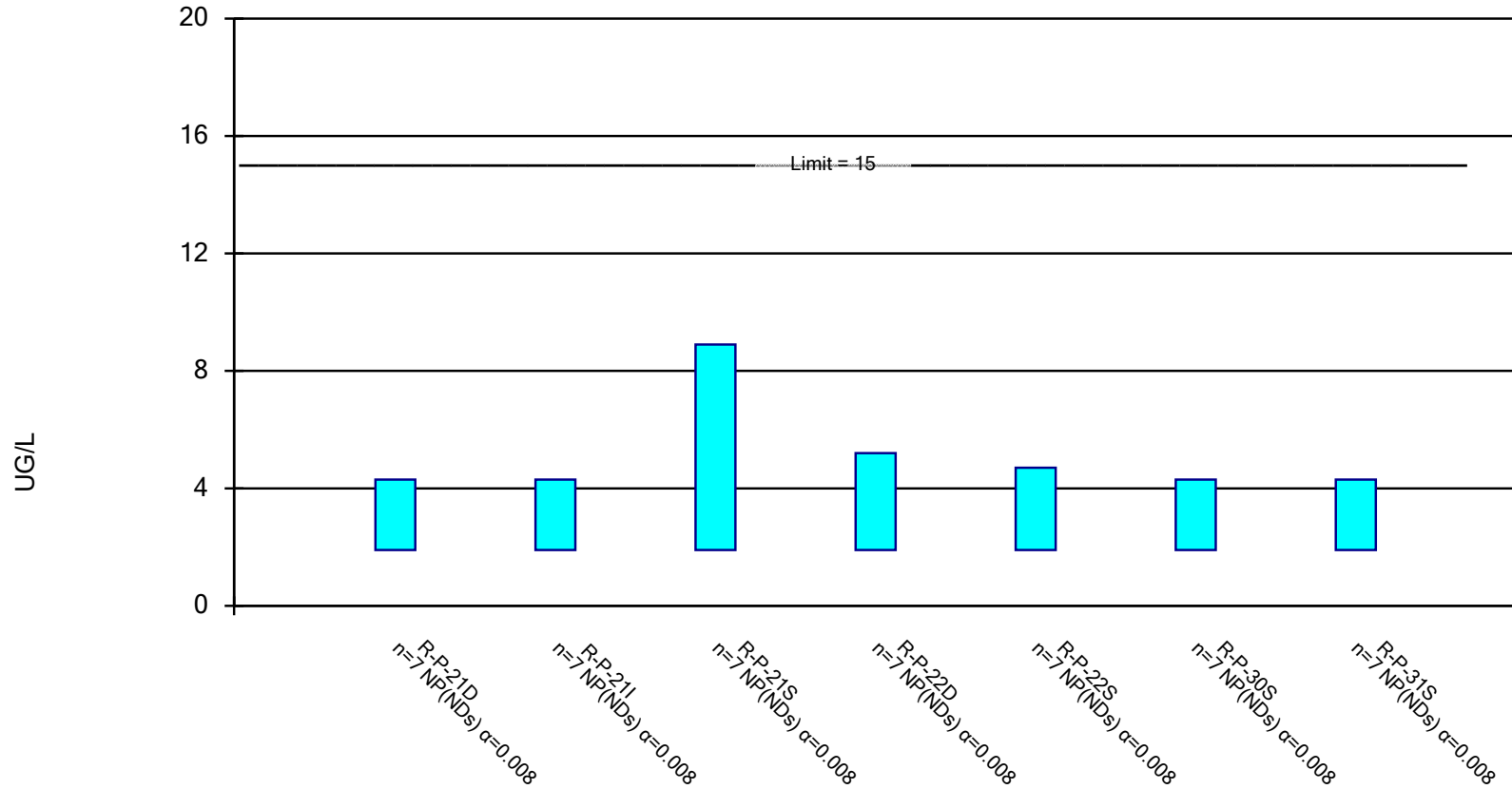


Constituent: LEAD, TOTAL Analysis Run 2/2/2023 10:03 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

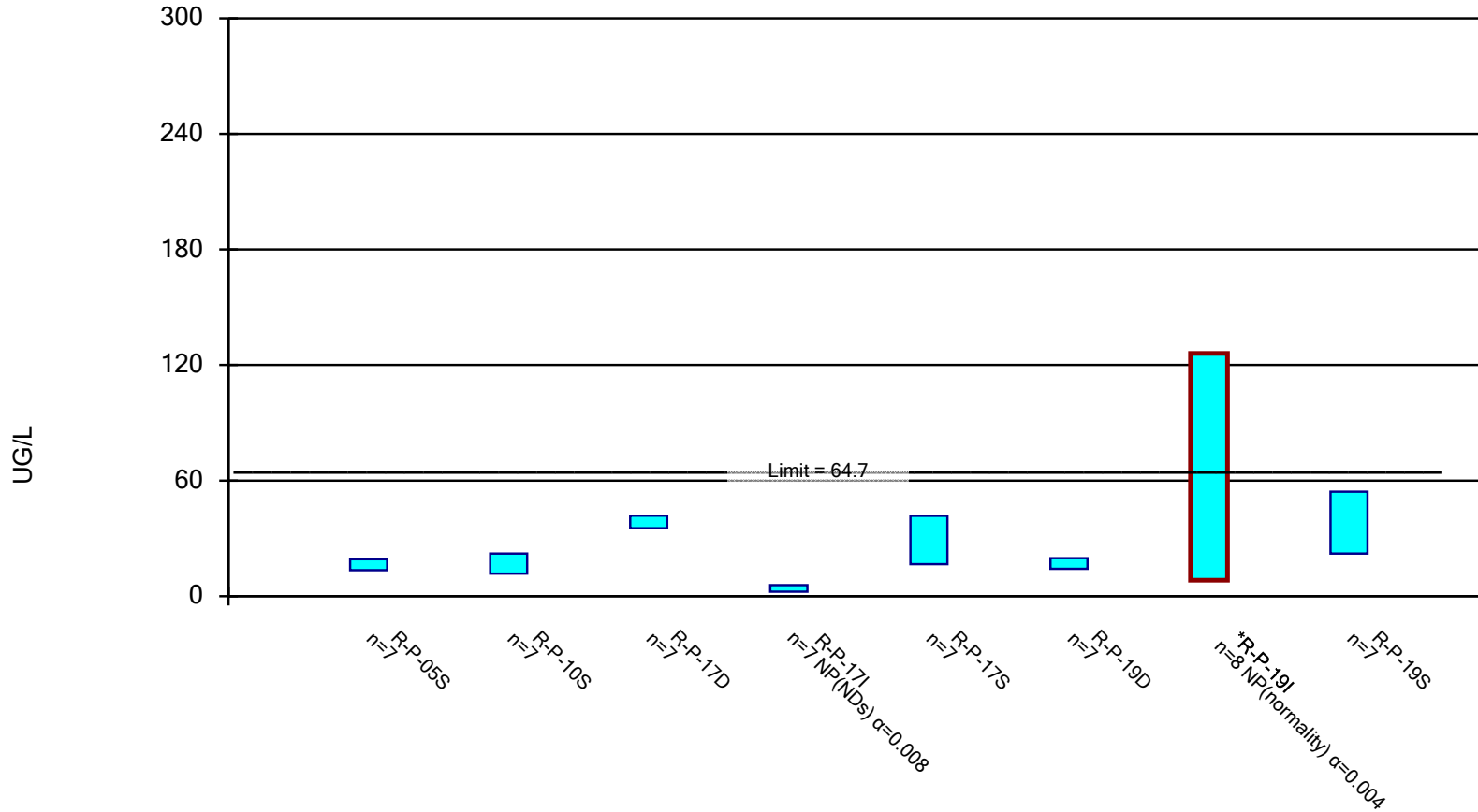


Constituent: LEAD, TOTAL Analysis Run 2/2/2023 10:03 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on

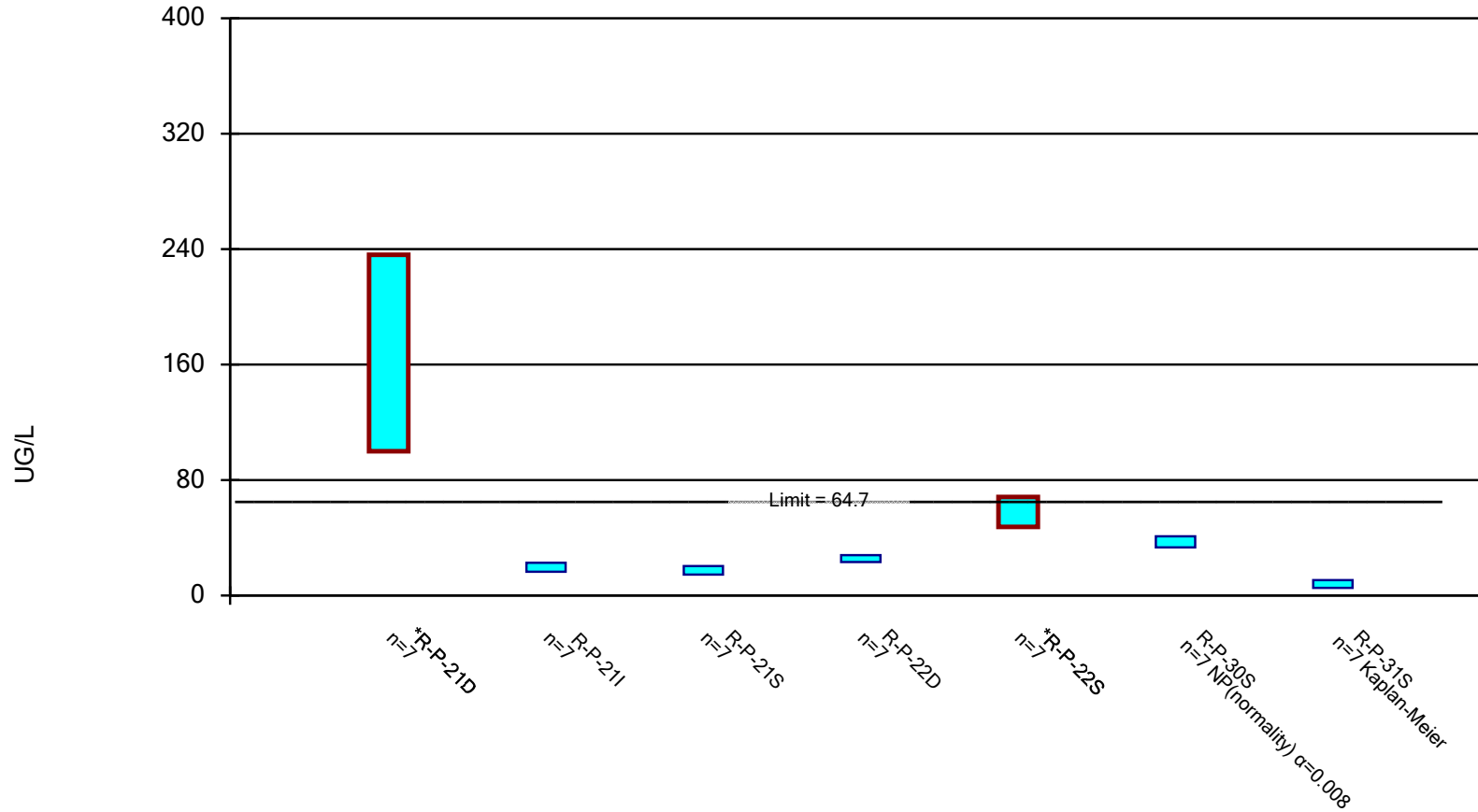


Constituent: LITHIUM, TOTAL Analysis Run 2/2/2023 10:03 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on

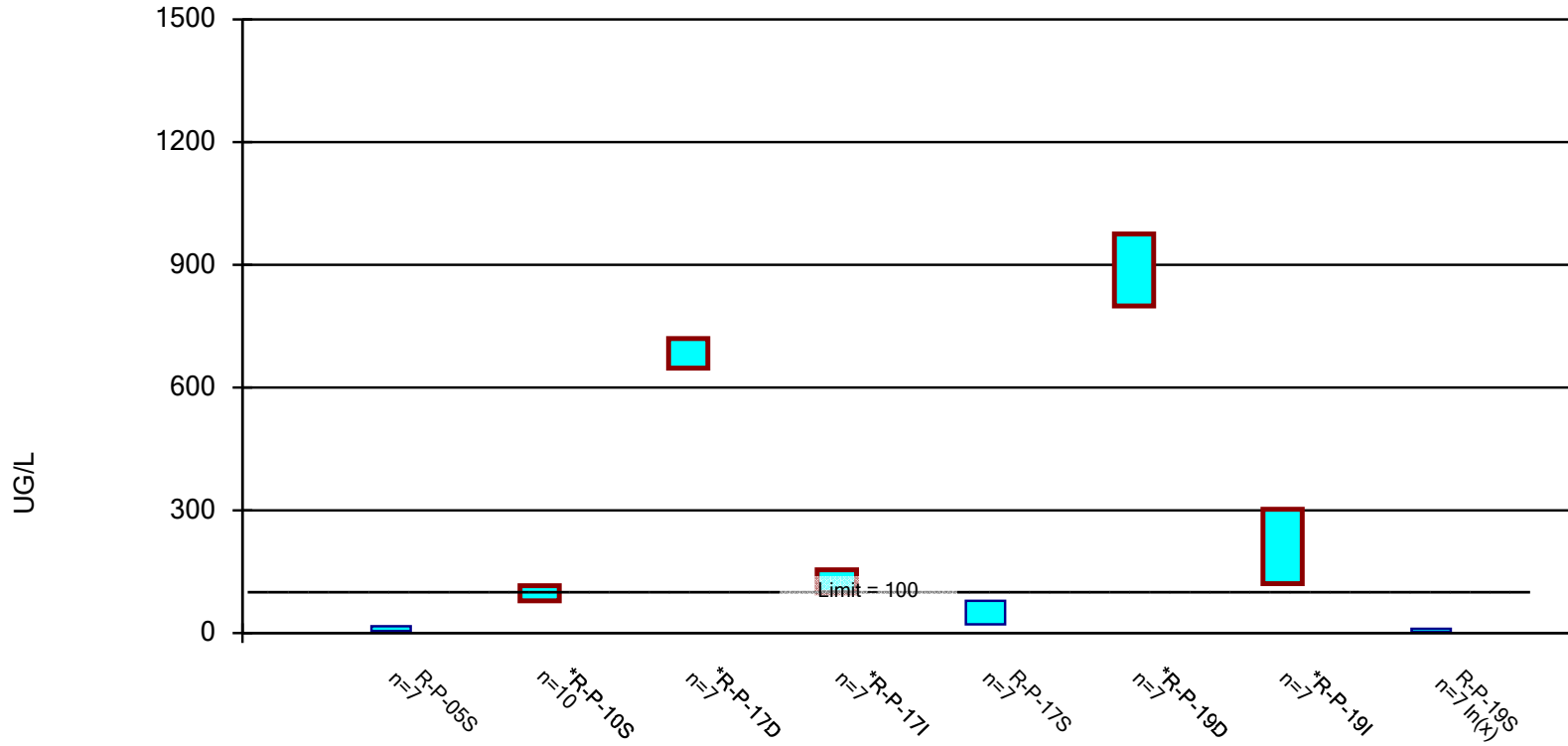


Constituent: LITHIUM, TOTAL Analysis Run 2/2/2023 10:03 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

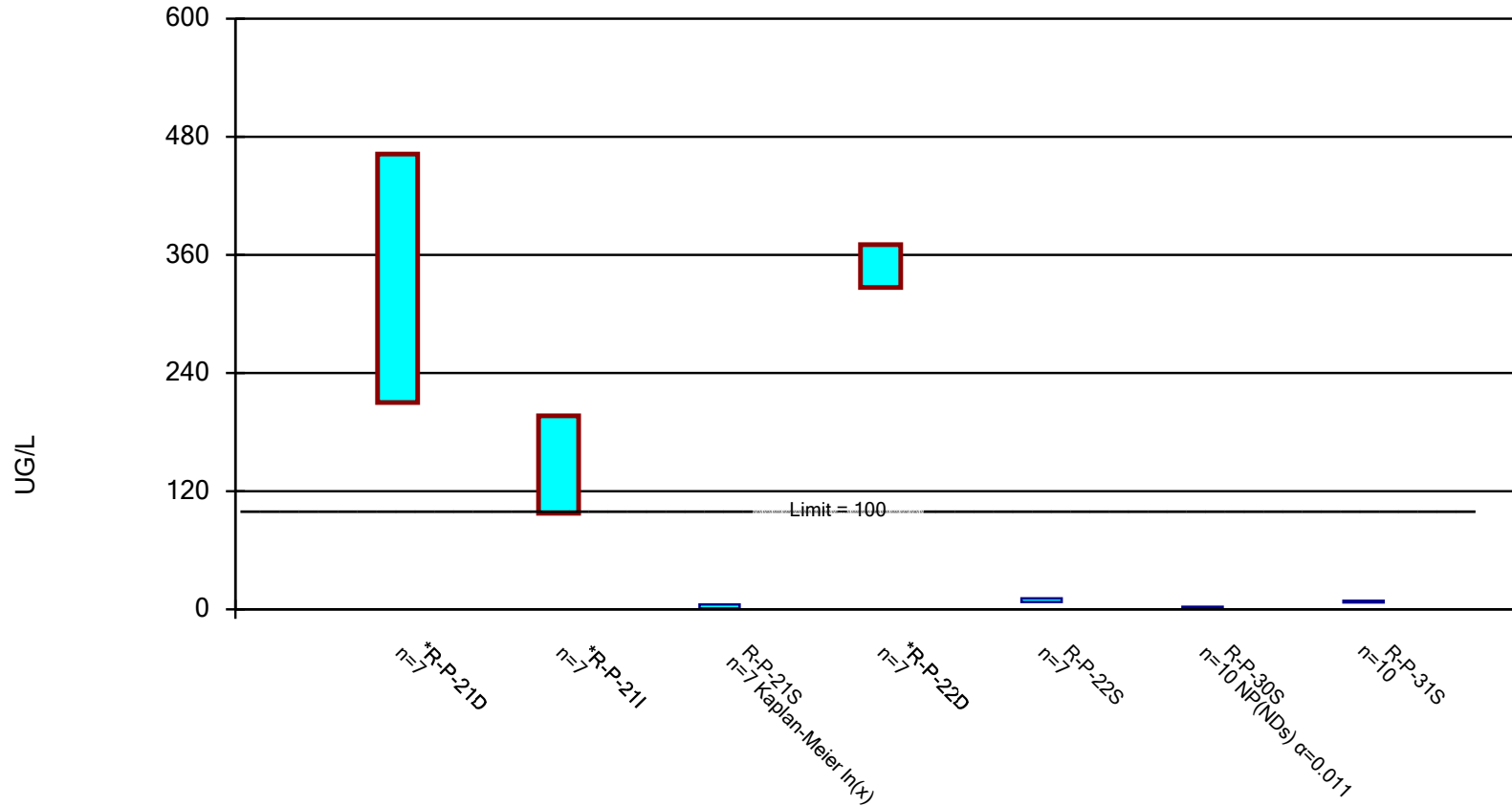


Constituent: MOLYBDENUM, TOTAL Analysis Run 2/2/2023 10:03 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on



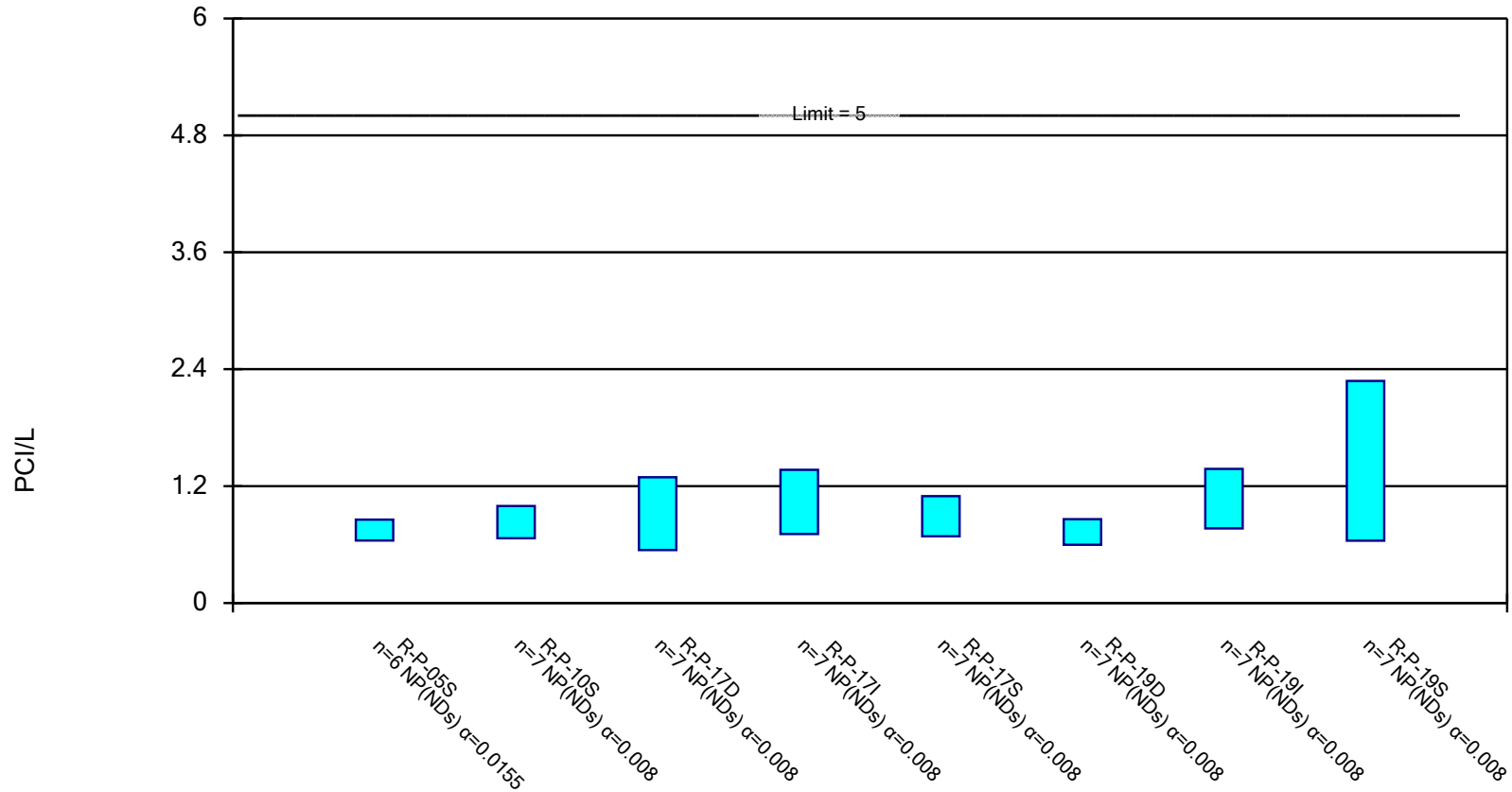
Constituent: MOLYBDENUM, TOTAL Analysis Run 2/2/2023 10:03 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



## Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

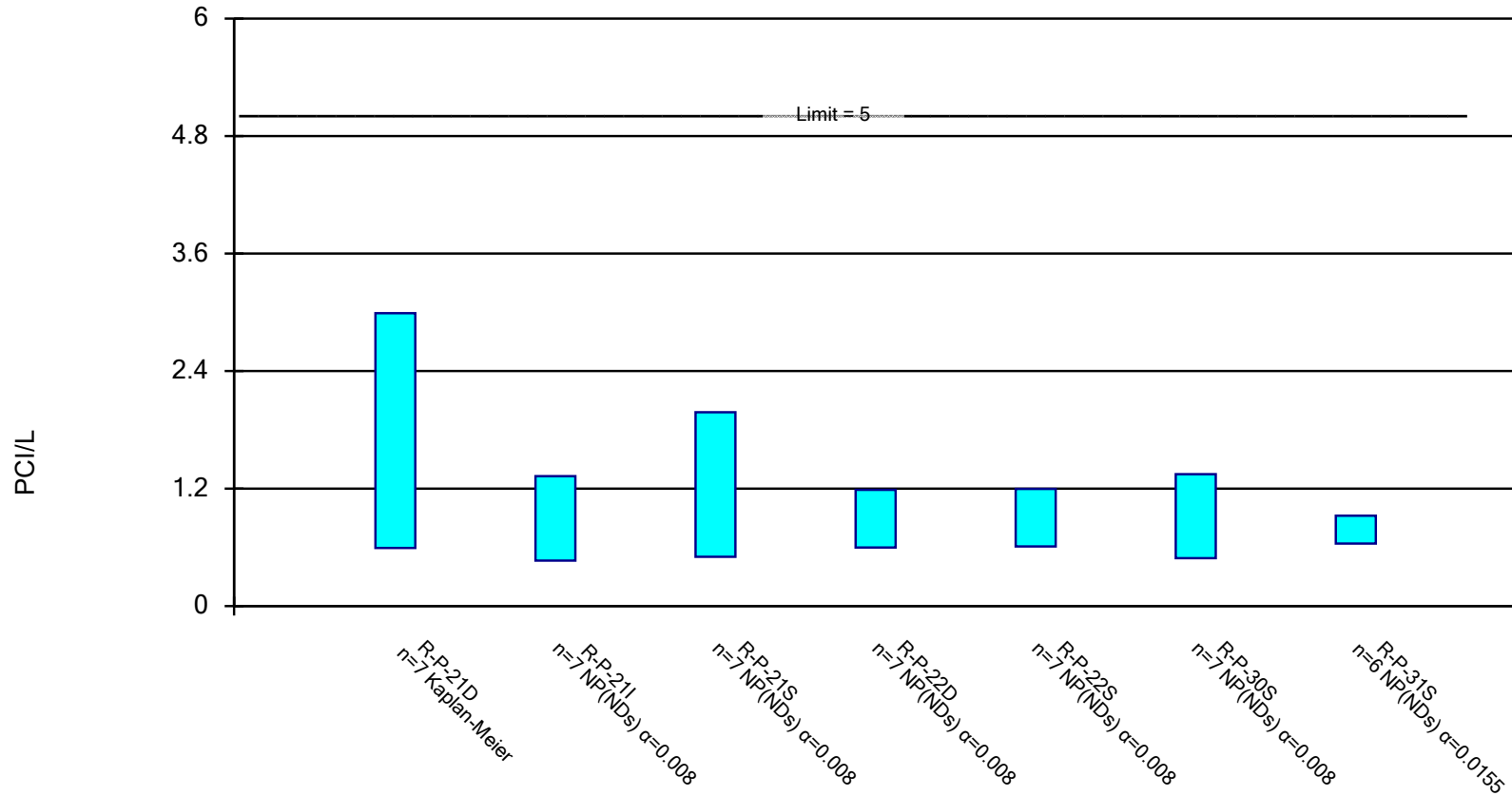


Constituent: RADIUM [226 + 228] Analysis Run 2/2/2023 10:03 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based

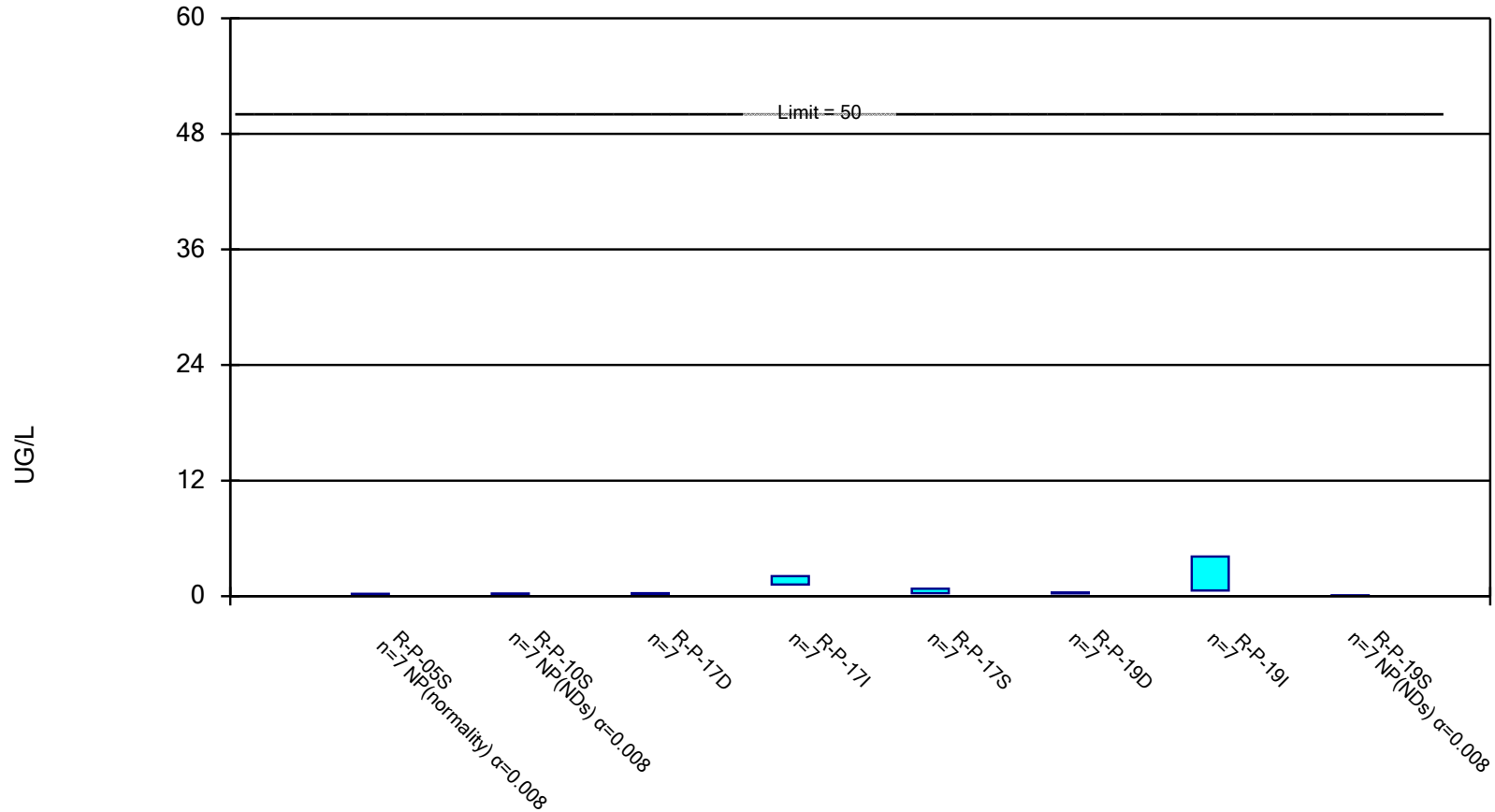


Constituent: RADIUM [226 + 228] Analysis Run 2/2/2023 10:03 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based

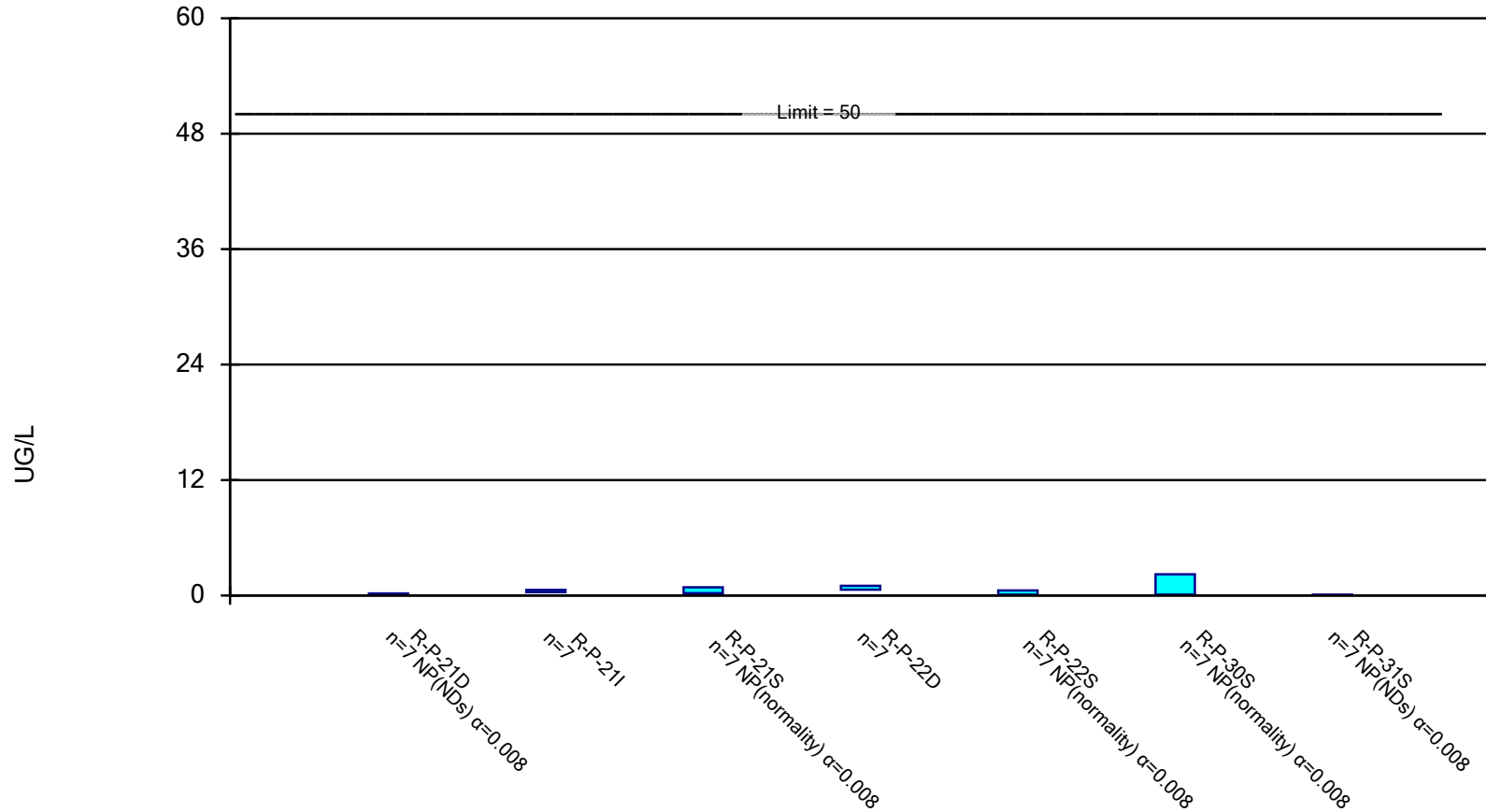


Constituent: SELENIUM, TOTAL Analysis Run 2/2/2023 10:03 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based



Constituent: SELENIUM, TOTAL Analysis Run 2/2/2023 10:03 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

# Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/2/2023, 10:03 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	R-P-05S	0.06	0.0485	6	No	7	100	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-10S	0.14	0.0485	6	No	7	57.14	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-17D	0.06	0.0485	6	No	7	100	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-17I	0.5897	0.2217	6	No	7	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-17S	0.46	0.0485	6	No	7	57.14	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-19D	0.06	0.0485	6	No	7	100	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-19I	5.709	1.368	6	No	7	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-19S	0.15	0.0485	6	No	7	85.71	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21D	0.06	0.0485	6	No	7	100	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21I	0.06	0.0485	6	No	7	100	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21S	0.19	0.0485	6	No	7	85.71	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-22D	0.186	0.08944	6	No	7	28.57	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-22S	0.06	0.0485	6	No	7	100	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-30S	0.94	0.0485	6	No	7	85.71	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-31S	0.06	0.0485	6	No	7	100	No	0.008	NP (NDs)
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-P-05S</b>	<b>178.3</b>	<b>145.4</b>	<b>30</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
ARSENIC, TOTAL (UG/L)	R-P-10S	10.45	4.647	30	No	10	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-17D	1.3	1.1	30	No	7	0	No	0.008	NP (normality)
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-P-17I</b>	<b>69.52</b>	<b>38.31</b>	<b>30</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-P-17S</b>	<b>39.48</b>	<b>23.66</b>	<b>30</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
ARSENIC, TOTAL (UG/L)	R-P-19D	0.8072	0.5814	30	No	7	0	No	0.01	Param.
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-P-19I</b>	<b>311.1</b>	<b>76.22</b>	<b>30</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
ARSENIC, TOTAL (UG/L)	R-P-19S	25.71	11.58	30	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-21D	0.6133	0.4895	30	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-21I	5.9	5	30	No	7	0	No	0.008	NP (normality)
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-P-21S</b>	<b>135.1</b>	<b>29.57</b>	<b>30</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
ARSENIC, TOTAL (UG/L)	R-P-22D	10.3	8.243	30	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-22S	2.935	0.832	30	No	6	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-30S	2.235	0.9154	30	No	10	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-31S	25.25	14.93	30	No	9	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-05S	195.6	156.7	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-10S	187.2	112.2	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17D	106.9	97.79	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17I	25.02	12.77	2000	No	7	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17S	159.9	48.43	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-19D	99.67	64.56	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-19I	37.9	11	2000	No	7	0	No	0.008	NP (normality)
BARIUM, TOTAL (UG/L)	R-P-19S	576.9	208.8	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21D	398.6	60.9	2000	No	7	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21I	46.72	25.34	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21S	588.3	242.8	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-22D	75.96	64.16	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-22S	224.6	136.5	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-30S	111.8	84.69	2000	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-31S	172.5	125.8	2000	No	6	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-05S	0.031	0.0265	5	No	6	100	No	0.0155	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-10S	0.2754	0.02965	5	No	6	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17D	0.2767	0.04733	5	No	6	33.33	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17I	0.7242	0.2124	5	No	6	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17S	0.09036	0.04297	5	No	6	50	No	0.01	Param.

## Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/2/2023, 10:03 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
CADMIUM, TOTAL (UG/L)	R-P-19D	0.3798	0.03251	5	No	6	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19I	0.6123	0.2077	5	No	6	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19S	0.031	0.0265	5	No	5	100	No	0.031	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-21D	0.1093	0.04298	5	No	6	50	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-21I	0.1037	0.04265	5	No	6	50	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-21S	0.142	0.02966	5	No	6	50	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-22D	0.1686	0.06943	5	No	6	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-22S	0.156	0.05764	5	No	6	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-30S	0.08334	0.04966	5	No	6	33.33	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-31S	0.031	0.0265	5	No	6	100	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-05S	0.638	0.3068	100	No	7	14.29	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-10S	0.8	0.11	100	No	7	57.14	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-17D	0.5858	0.1628	100	No	7	42.86	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-17I	1.04	0.7857	100	No	7	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-17S	0.5468	0.1866	100	No	7	28.57	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19D	0.869	0.3367	100	No	7	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19I	0.8618	0.2182	100	No	7	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19S	0.4734	0.2208	100	No	7	28.57	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-21D	0.6	0.11	100	No	7	71.43	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-21I	0.5	0.22	100	No	7	14.29	No	0.008	NP (normality)
CHROMIUM, TOTAL (UG/L)	R-P-21S	0.4173	0.2027	100	No	7	28.57	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-22D	1.959	0.8948	100	No	7	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-22S	0.5	0.11	100	No	7	71.43	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-30S	0.5	0.11	100	No	7	71.43	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-31S	0.4524	0.1876	100	No	7	42.86	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-05S	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-10S	3.611	0.7487	6	No	5	40	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-17D	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-17I	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-17S	3.273	0.9767	6	No	4	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-19D	0.79	0.475	6	No	5	80	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-19I	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-19S	1	0.39	6	No	4	75	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-21D	0.75	0.475	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-21I	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-21S	3.074	1.046	6	No	5	20	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-22D	0.75	0.475	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-22S	3.47	1.53	6	No	5	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-30S	0.75	0.475	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-31S	0.75	0.475	6	No	5	100	No	0.031	NP (NDs)
FLUORIDE, TOTAL (MG/L)	R-P-05S	0.4691	0.3023	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-10S	0.5637	0.4229	4	No	6	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-17D	0.7063	0.5794	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-17I	2.225	1.804	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-17S	0.9769	0.1688	4	No	7	14.29	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19D	2.2	1.7	4	No	7	0	No	0.008	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-19I	1.891	0.7116	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19S	0.3783	0.2731	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-21D	1.4	0.78	4	No	7	0	No	0.008	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-21I	1.119	0.9186	4	No	7	0	No	0.01	Param.

## Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/2/2023, 10:03 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-P-21S	0.447	0.1416	4	No	7	14.29	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-22D	2.6	2.1	4	No	7	0	No	0.008	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-22S	0.46	0.043	4	No	7	42.86	No	0.008	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-30S	0.4822	0.2264	4	No	7	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-31S	0.4341	0.3373	4	No	7	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-P-05S	4.3	1.9	15	No	7	85.71	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-10S	4.3	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-17D	4.3	1.9	15	No	7	85.71	No	0.008	NP (NDs)
<b>LEAD, TOTAL (UG/L)</b>	<b>R-P-17I</b>	<b>22.56</b>	<b>5.122</b>	<b>15</b>	<b>Yes</b>	<b>7</b>	<b>14.29</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
LEAD, TOTAL (UG/L)	R-P-17S	4.5	1.9	15	No	7	85.71	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-19D	4.3	1.9	15	No	7	100	No	0.008	NP (NDs)
<b>LEAD, TOTAL (UG/L)</b>	<b>R-P-19I</b>	<b>18.98</b>	<b>3.79</b>	<b>15</b>	<b>Yes</b>	<b>7</b>	<b>14.29</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
LEAD, TOTAL (UG/L)	R-P-19S	6.3	1.9	15	No	7	85.71	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21D	4.3	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21I	4.3	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21S	8.9	1.9	15	No	7	71.43	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-22D	5.2	1.9	15	No	7	85.71	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-22S	4.7	1.9	15	No	7	85.71	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-30S	4.3	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-31S	4.3	1.9	15	No	7	100	No	0.008	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-P-05S	19.2	13.51	64.7	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-10S	22.1	11.7	64.7	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-17D	41.75	35.27	64.7	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-17I	5.7	2.3	64.7	No	7	71.43	No	0.008	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-P-17S	41.73	16.64	64.7	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-19D	19.72	14.23	64.7	No	7	0	No	0.01	Param.
<b>LITHIUM, TOTAL (UG/L)</b>	<b>R-P-19I</b>	<b>126</b>	<b>8.3</b>	<b>64.7</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.004</b>	<b>NP (normality)</b>
LITHIUM, TOTAL (UG/L)	R-P-19S	54.2	22.14	64.7	No	7	0	No	0.01	Param.
<b>LITHIUM, TOTAL (UG/L)</b>	<b>R-P-21D</b>	<b>236.1</b>	<b>99.95</b>	<b>64.7</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
LITHIUM, TOTAL (UG/L)	R-P-21I	22.63	16.43	64.7	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-21S	20.34	14.43	64.7	No	7	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-22D	27.96	23.21	64.7	No	7	0	No	0.01	Param.
<b>LITHIUM, TOTAL (UG/L)</b>	<b>R-P-22S</b>	<b>68.28</b>	<b>47.55</b>	<b>64.7</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
LITHIUM, TOTAL (UG/L)	R-P-30S	41	33.3	64.7	No	7	0	No	0.008	NP (normality)
LITHIUM, TOTAL (UG/L)	R-P-31S	10.68	5.26	64.7	No	7	28.57	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-05S	16.63	4.997	100	No	7	0	No	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-10S</b>	<b>115.6</b>	<b>78.62</b>	<b>100</b>	<b>Yes</b>	<b>10</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-17D</b>	<b>720</b>	<b>647.5</b>	<b>100</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-17I</b>	<b>154.6</b>	<b>98.17</b>	<b>100</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
MOLYBDENUM, TOTAL (UG/L)	R-P-17S	78.73	21.33	100	No	7	0	No	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-19D</b>	<b>975.5</b>	<b>799.3</b>	<b>100</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-19I</b>	<b>302.4</b>	<b>120.7</b>	<b>100</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
MOLYBDENUM, TOTAL (UG/L)	R-P-19S	10.25	2.569	100	No	7	0	ln(x)	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-21D</b>	<b>462.5</b>	<b>210.1</b>	<b>100</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-21I</b>	<b>196.5</b>	<b>97.54</b>	<b>100</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
MOLYBDENUM, TOTAL (UG/L)	R-P-21S	4.889	0.8955	100	No	7	42.86	ln(x)	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-22D</b>	<b>370.5</b>	<b>327</b>	<b>100</b>	<b>Yes</b>	<b>7</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
MOLYBDENUM, TOTAL (UG/L)	R-P-22S	11.15	7.392	100	No	7	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-30S	2.6	0.85	100	No	10	60	No	0.011	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-P-31S	8.707	6.933	100	No	10	10	No	0.01	Param.

# Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/2/2023, 10:03 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
RADIUM [226 + 228] (PCI/L)	R-P-05S	0.8555	0.642	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-10S	0.995	0.664	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-17D	1.291	0.544	5	No	7	85.71	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-17I	1.367	0.7075	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-17S	1.096	0.6855	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-19D	0.861	0.598	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-19I	1.377	0.766	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-19S	2.279	0.6405	5	No	7	57.14	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-21D	2.991	0.5934	5	No	7	42.86	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	R-P-21I	1.327	0.465	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-21S	1.98	0.5025	5	No	7	85.71	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-22D	1.187	0.5985	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-22S	1.196	0.609	5	No	7	85.71	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-30S	1.347	0.4895	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-31S	0.922	0.6385	5	No	6	100	No	0.0155	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-05S	0.25	0.09	50	No	7	28.57	No	0.008	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-10S	0.28	0.09	50	No	7	57.14	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-17D	0.3059	0.2227	50	No	7	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17I	2.081	1.205	50	No	7	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17S	0.7702	0.3013	50	No	7	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19D	0.3773	0.2941	50	No	7	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19I	4.115	0.5906	50	No	7	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19S	0.09	0.09	50	No	7	100	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-21D	0.22	0.09	50	No	7	85.71	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-21I	0.5879	0.3378	50	No	7	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-21S	0.85	0.24	50	No	7	0	No	0.008	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-22D	1	0.5999	50	No	7	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-22S	0.52	0.09	50	No	7	42.86	No	0.008	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-30S	2.2	0.09	50	No	7	42.86	No	0.008	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-31S	0.09	0.09	50	No	7	100	No	0.008	NP (NDs)



# Appendix E

## April 2023 Corrective Action Statistical Evaluation



---

**To:** Lisa Meyer – Ameren Missouri **Project Number:** 23008

**CC:** Ameren Missouri - Susan Knowles, Craig Giesmann, Charlie Henderson, Bill Kutosky

**From:** Rocksmith Geoengineering - Mark Haddock, P.E., Jeff Ingram, R.G., Grant Morey **Email:** Jeff.Ingram@Rocksmithgeo.com

**RE:** **Corrective Action Statistical Evaluation, RCPA Surface Impoundment, Rush Island Energy Center, Jefferson County, Missouri**

---

## 1.0 INTRODUCTION

---

This Technical Memorandum provides the results of the Corrective Action Monitoring statistical analyses from the April 2023 sampling event for the RCPA Surface Impoundment at the Rush Island Energy Center (RIEC) located in Jefferson County, Missouri. As outlined in the remedy selection report for the RCPA, Corrective Action at the RCPA consists of two phases, as follows:

- 1) Source control, stabilization, and containment of CCR by installation of a low-permeability geomembrane cap.
- 2) Once source control is achieved, monitor the natural attenuation (MNA) of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modeling evaluations to document concentration trends following Corrective Action.

Phase 1 of Corrective Action commenced in August 2019, and was substantially completed on December 15, 2020, with the installation of a low permeability cover system. Included in this memorandum is a brief summary of constituents that are currently in exceedance of the groundwater protection standard (GWPS), a list of site-specific Groundwater Protection Standards (**Table 1**), and the Sanitas Technologies™ (Sanitas) statistical software output for each of the Appendix IV parameters (**Appendix A and Appendix B**).

The initial Corrective Action sampling event was completed in April 2020, with a total of eight (8) sampling events completed for the Corrective Action Program at the RIEC to date. This analysis uses results collected since the beginning of Corrective Action monitoring (April 2020) for the determination of constituents exceeding the GWPS, as data collected prior to this time were collected during active conditions of the RCPA, prior to the cessation of CCR disposal in the RCPA, and are not representative of groundwater conditions since the initiation of closure.

Several constituents were reported at concentrations below the Practical Quantitation Limit (PQL) during the April 2020, 2021, 2022, and 2023 sampling events including beryllium, cadmium, cobalt, mercury, and thallium. Because these constituents were not detected during the initial Corrective Action sampling events, they were not re-sampled/tested during the subsequent semi-annual sampling events in each calendar year. There are now four results available for each of these constituents, so this is the first Corrective Action statistical evaluation where confidence intervals could be calculated for beryllium, cadmium, cobalt, mercury, and thallium.

Additionally, now that 8 rounds of Corrective Action Sampling have been completed, trend tests using the Sen's Slope / Mann Kendall can be completed as outlined in the USEPA Unified Guidance. Therefore, trend tests can now be completed for the following constituents: antimony, arsenic, barium, fluoride, lead, lithium, molybdenum, radium 226 + 228, and selenium.

## 2.0 STATISTICAL EVALUATION

The Appendix IV constituents were evaluated for exceedances above the GWPS using the methods and procedures outlined in the Corrective Action Groundwater Monitoring Plan's (CAGMP's) Statistical Analysis Plan (SAP). An outlier analysis was completed as the first step of the statistical evaluation. The outlier analysis was performed only on the results collected as a part of the Corrective Action Monitoring Program. In addition to outliers noted in previous Corrective Action evaluations, the following outliers were removed prior to the calculation of confidence limits:

- Antimony
  - R-P-30S at 0.94 J micrograms per liter ( $\mu\text{g/L}$ ) on 10/29/2021. The result is statistically higher than other antimony values at the same well. The high result has not been confirmed during previous or subsequent sampling events and is an outlier.
- Lead
  - R-P-30S at Non-Detect ( $<8.6 \mu\text{g/L}$ ) on 11/3/2022. The result is statistically higher than other lead values at the same well due to the high Method Detection Limit (MDL) reported. The high result has not been confirmed during subsequent sampling events and is an outlier.
  - R-P-31S at Non-Detect ( $<8.6 \mu\text{g/L}$ ) on 11/3/2022. The result is statistically higher than other lead values at the same well due to the high MDL reported. The high result has not been confirmed during subsequent sampling events and is an outlier.
- Molybdenum
  - R-P-29S at Non-Detect ( $<20 \mu\text{g/L}$ ) on 11/3/2022. The result is statistically higher than other molybdenum values at the same well due to the high MDL reported following data validation procedures. The high result has not been confirmed during subsequent sampling events and is an outlier.

An analysis of the outliers removed to date was completed and the following statistical outliers that were previously removed were added back into the dataset prior to the calculation of confidence limits:

- Arsenic
  - R-P-22S at 8.3 J  $\mu\text{g/L}$  on 4/14/2022. The result was removed as an outlier in October 2022 because it was statistically higher than other values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in arsenic concentrations than observed with the data available for the October 2022 statistical evaluation. This arsenic result is no longer considered an outlier.

- Cobalt
  - R-P-19S at 3.3 µg/L on 10/27/2020. The result was removed as an outlier in April 2022 because it was statistically higher than other values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in cobalt concentrations than observed with the data available for the April 2022 statistical evaluation. This cobalt result is no longer considered an outlier.
  
- Fluoride
  - R-P-10S at Non-Detect (<0.12 µg/L) on 4/12/2022. The result was removed as an outlier in October 2022 because it was statistically lower than other fluoride values at the same well. However, based on review of subsequent sampling results, the well displays larger variability in fluoride concentrations than observed with the data available for the October 2022 statistical evaluation. This fluoride result is no longer considered an outlier.

Following the outlier analysis, the second step in the statistical analysis was to calculate confidence intervals and compare those to the site-specific GWPS (**Appendix A**). Confidence interval evaluation was supplemented with Sen's Slope/Mann Kendall Analyses on constituents that have eight independent sampling results at a given well, per the USEPA Unified Guidance (**Appendix B**). The Sen's Slope/Mann-Kendall Analysis identifies well-analyte pairs that have statistically significant trends and calculates confidence bands that vary with time. The upper confidence band, in relation to the GWPS for a given constituent, is used to determine exceedances, as outlined in the site CAGMP. As discussed previously, beryllium, cadmium, cobalt, mercury, and thallium do not have the requisite quantity of results to perform Sen's Slope/Mann Kendall Analyses, so only confidence intervals were produced for those constituents.

Using these corrective action statistical methods, as of April 2023, the wells with constituents exceeding the GWPS are as follows:

- Arsenic at R-P-05S, R-P-17I, R-P-17S, R-P-19I, and R-P-21S
- Lead at R-P-19I
- Lithium at R-P-19I, R-P-21D, and R-P-22S
- Molybdenum at R-P-10S, R-P-17D, R-P-17I, R-P-19D, R-P-19I, R-P-21D, R-P-21I, and R-P-22D

Lead at R-P-17I was previously identified as an exceedance in the October 2022 corrective action statistical evaluation. It is no longer an exceedance as of April 2023 as the upper confidence limit is below the GWPS using the Sen's Slope trend analysis. All other arsenic, lead, lithium, and molybdenum exceedances previously identified in October 2022 remain as of this evaluation. Variability in the initial groundwater sampling results during and directly after the closure of the RCPA is expected, especially at wells nearest the CCR unit, where closure grading and disturbance activities were greatest. The concentrations reported in these results following closure are expected to be variable but are expected to decrease over time as stabilization occurs and supplemental corrective measures are put into service.

## Closing

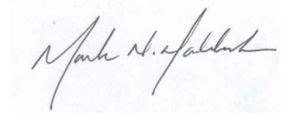
Rocksmith appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please contact the undersigned.

Sincerely,

**Rocksmith Geoengineering, LLC**



Jeff Ingram, R.G.  
*Senior Geologist, Partner*



Mark Haddock, P.E., R.G.  
*Principal Engineer, Senior Partner*

## Attachments

### Tables

Table 1 – RCPA Groundwater Protection Standards

### Appendices

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

## Tables

**Table 1 - RCPA Groundwater Protection Standards  
RCPA Surface Impoundment  
Rush Island Energy Center**

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring <sup>6</sup>
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	30	30
Barium	µg/L	2000	2000	548.6
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	2.363
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.2896
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	64.7	64.7
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.297
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:

1. µg/L - micrograms per liter
2. mg/L - milligrams per liter
3. pCi/L - picocuries per liter
4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) 2012 Edition of the Drinking Water Standards and Health Advisories. Updated January 9, 2023 at <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>.
5. Health Based Groundwater Protection Standards (GWPS) were adopted for Appendix IV parameters without an MCL (i.e. cobalt, lithium, molybdenum, and lead). Information available at <https://www.epa.gov/coalash/coal-ash-rule>.
6. Values were calculated using statistical methods outlined for Detection Monitoring and are used for returning to Detection Monitoring based on available data to date.
7. DQR - Double Quantification Rule. If all baseline data are less than the Practical Quantitation Limit (PQL), then the DQR will be used. More information on the DQR is provided in the Statistical Analysis Plan.
8. Site GWPS is either the MCL/Health Based GWPS or based on background levels (calculated as described in the Statistical Analysis Plan for Assessment Monitoring), whichever is higher.
9. GWPS and background values calculated using results up through April 2023 from monitoring wells MW-B1 and MW-B2.

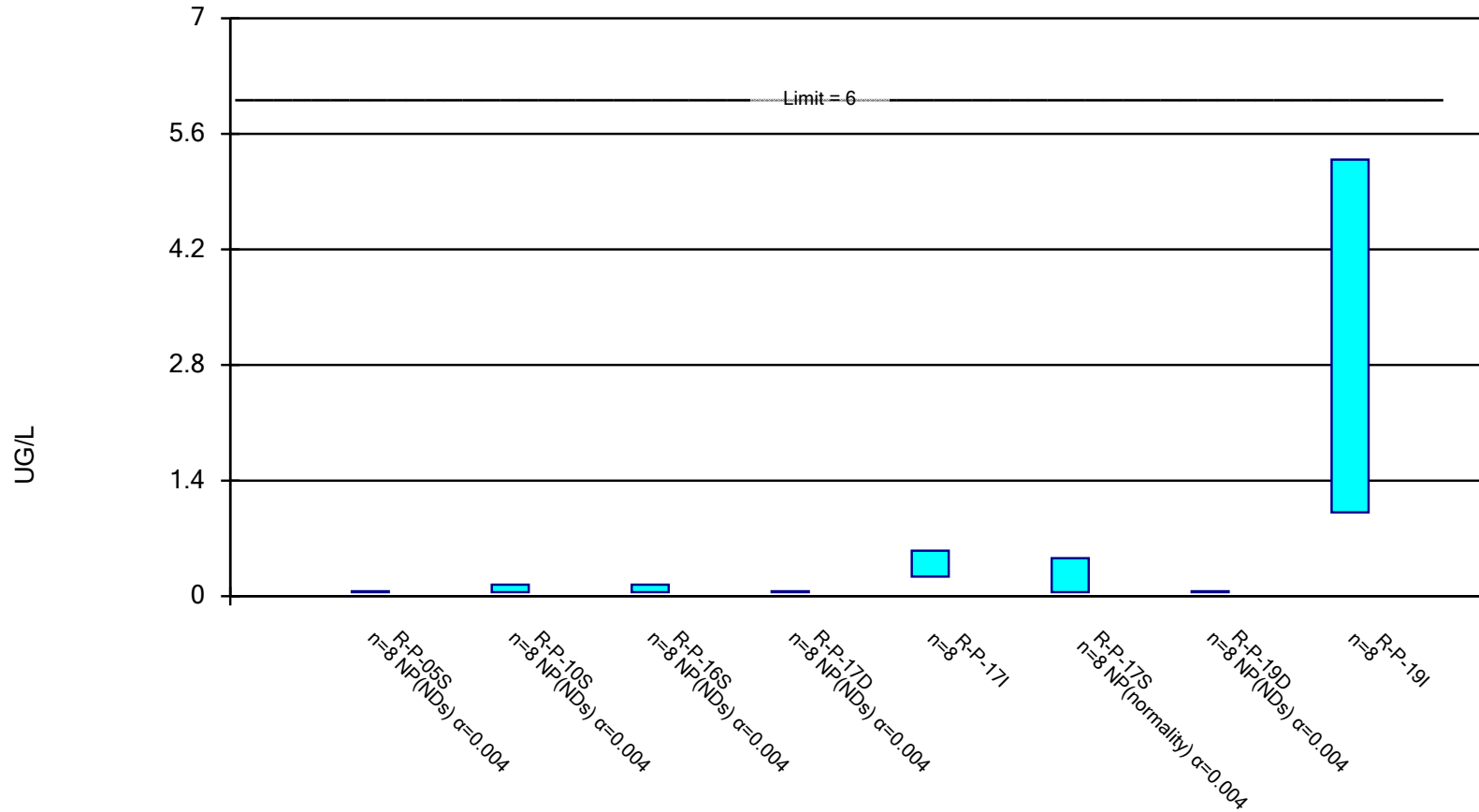
# Appendix A

## Sanitas Confidence Interval Statistical Output



### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

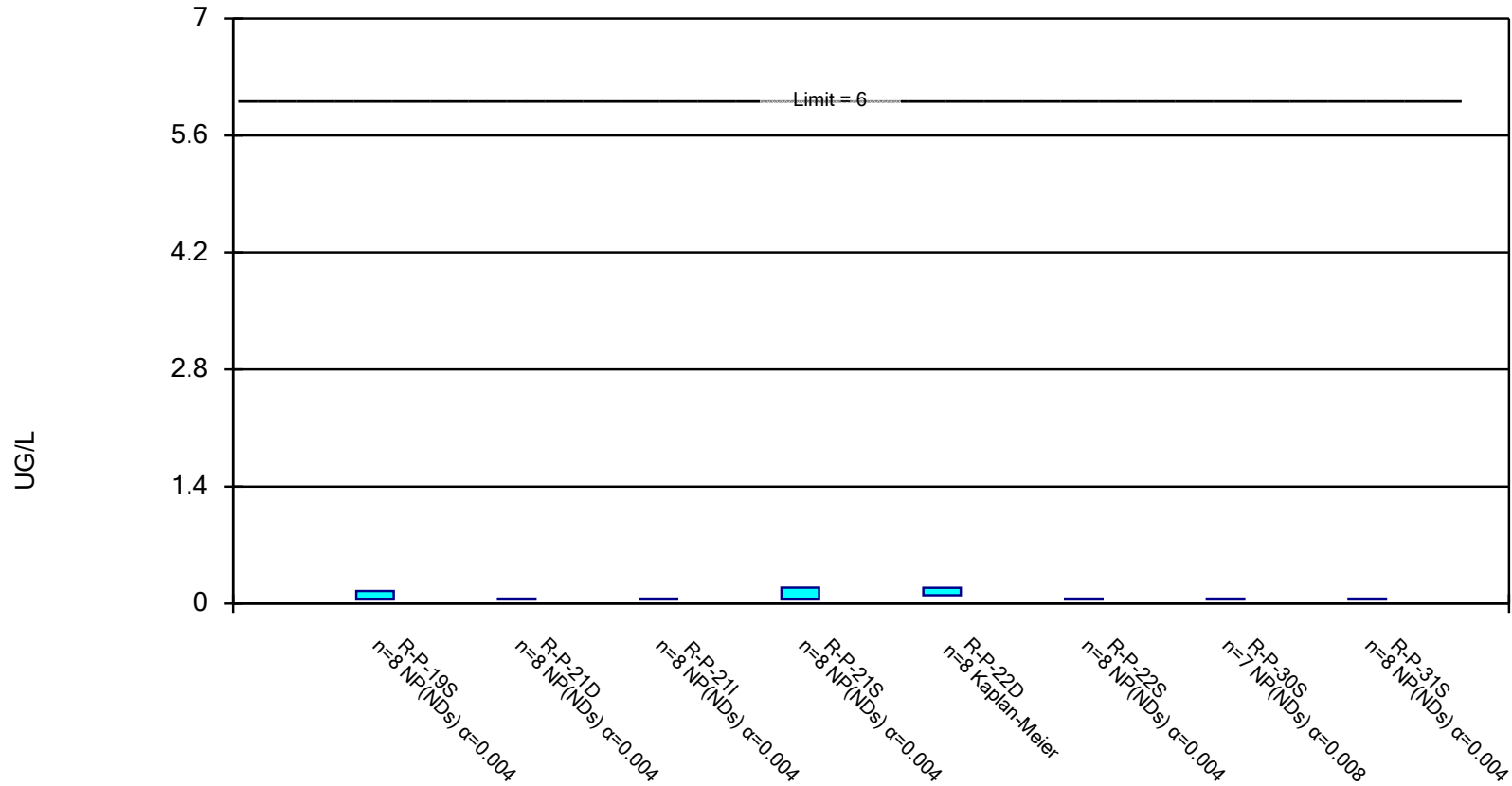


Constituent: ANTIMONY, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

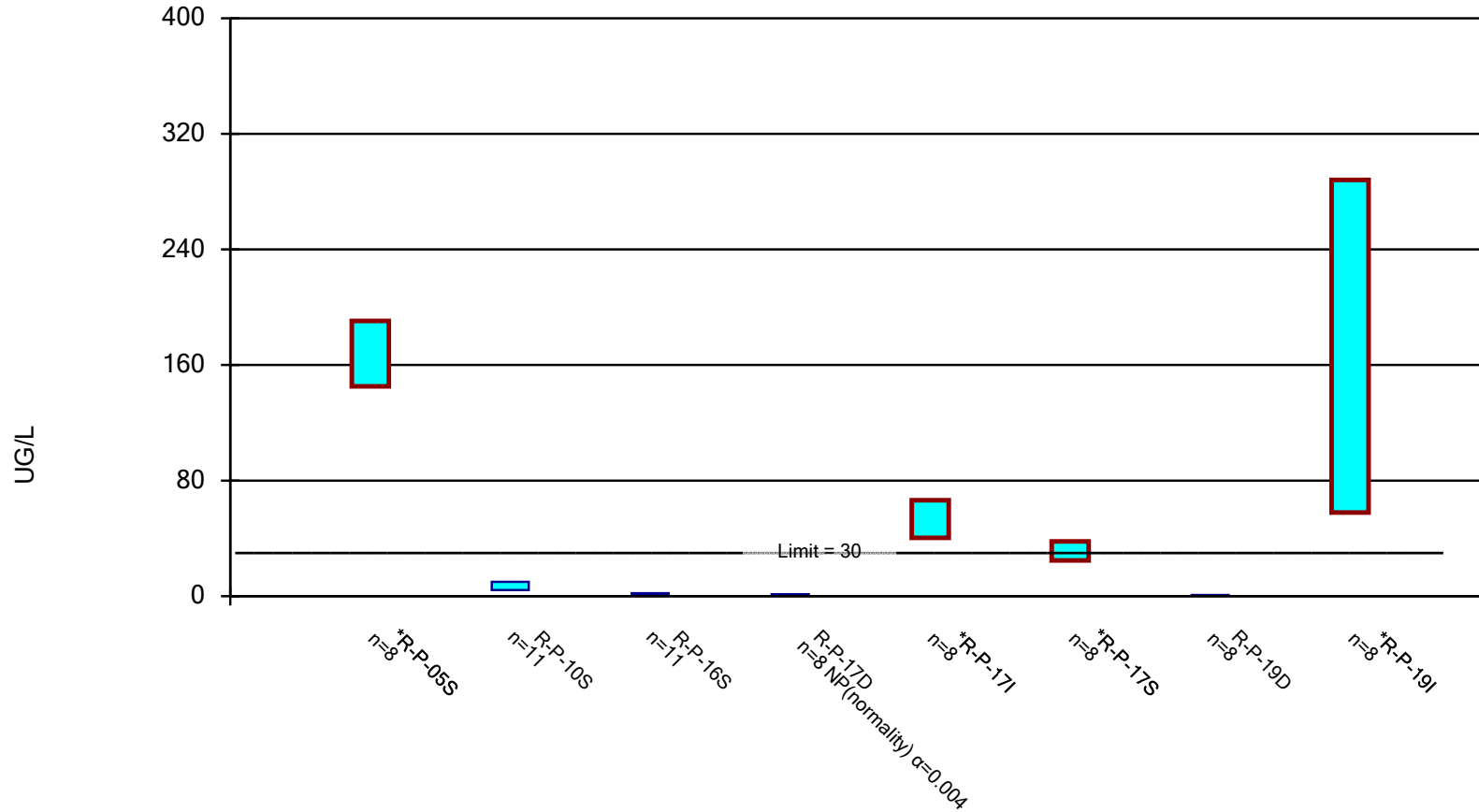


Constituent: ANTIMONY, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

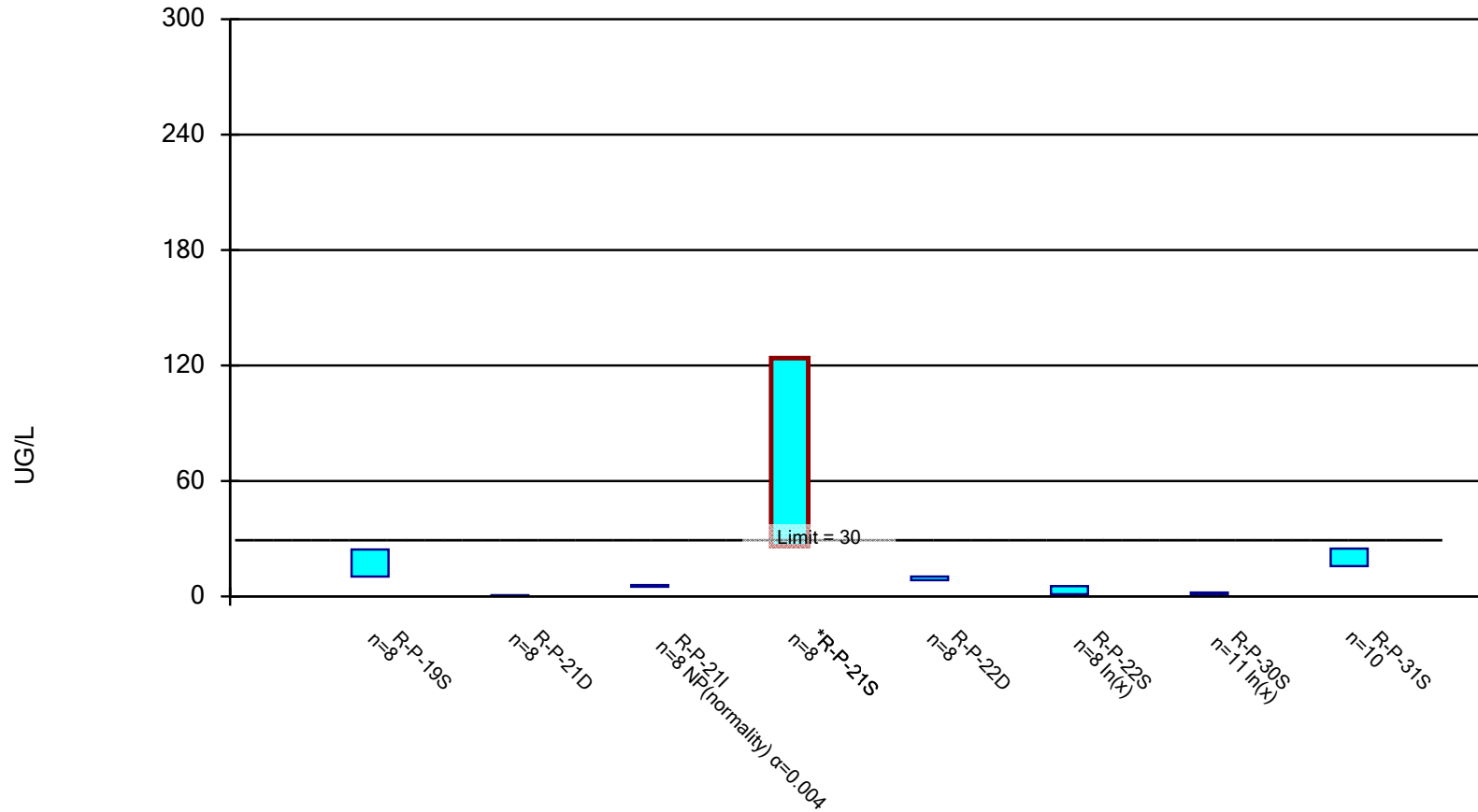


Constituent: ARSENIC, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

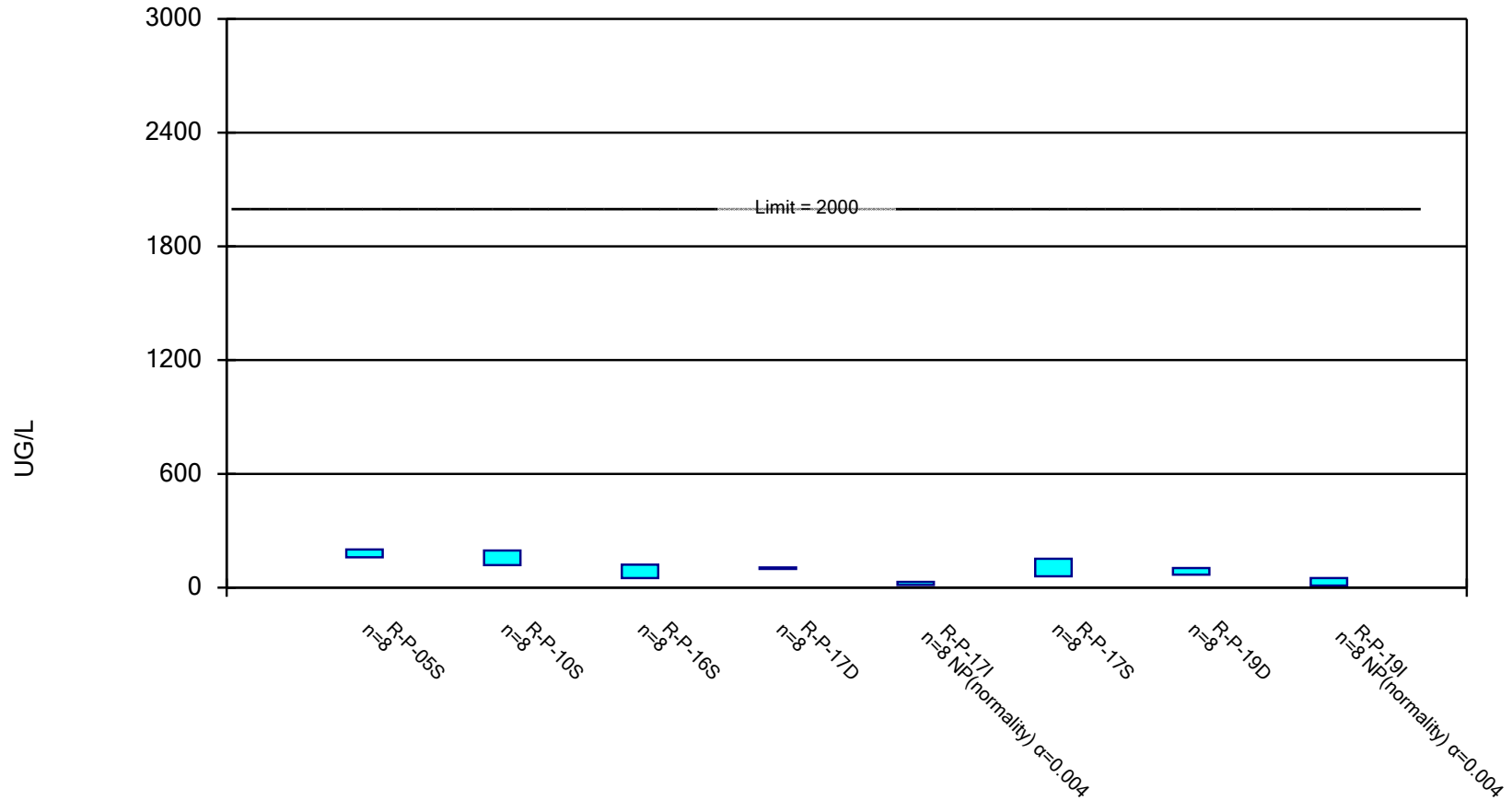


Constituent: ARSENIC, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

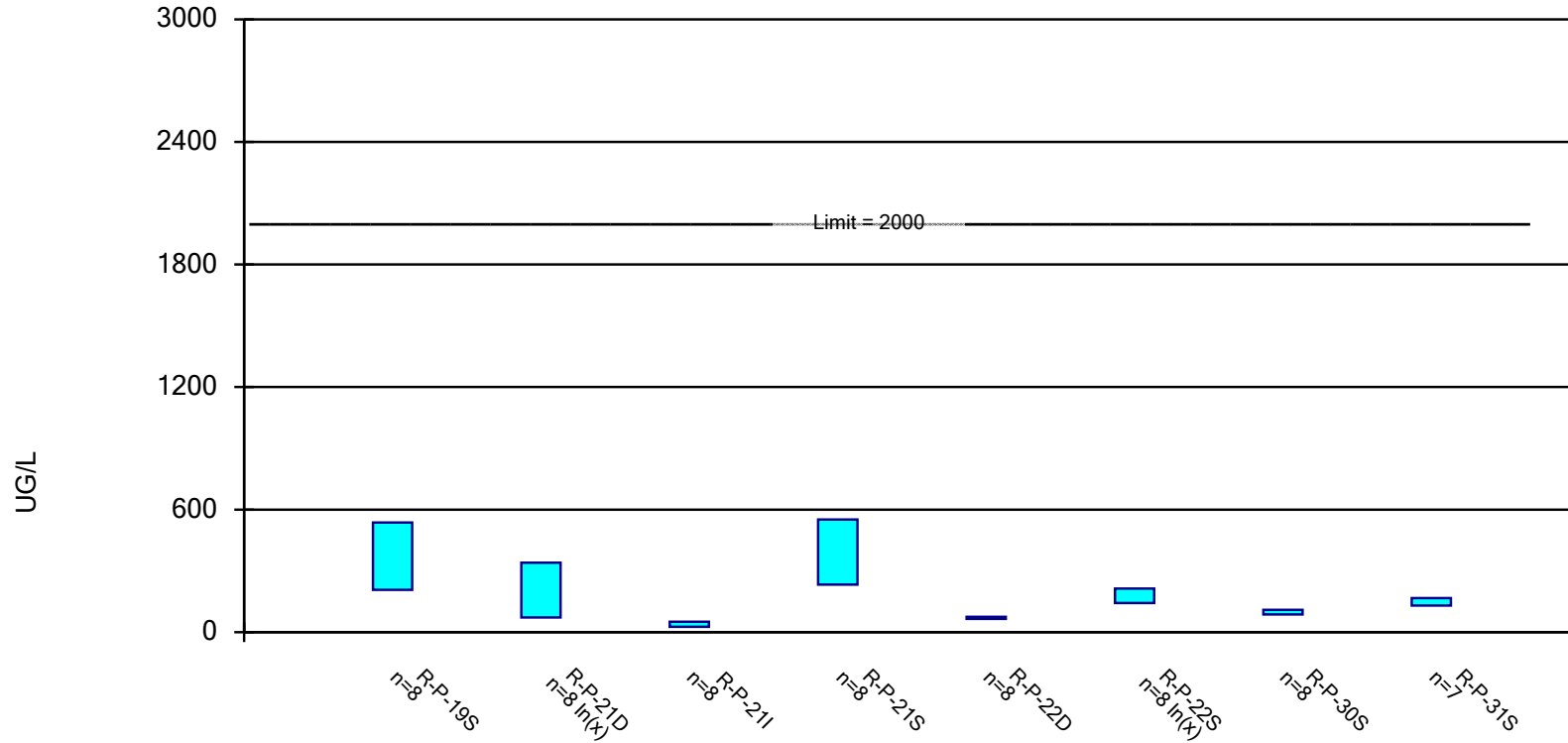


Constituent: BARIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

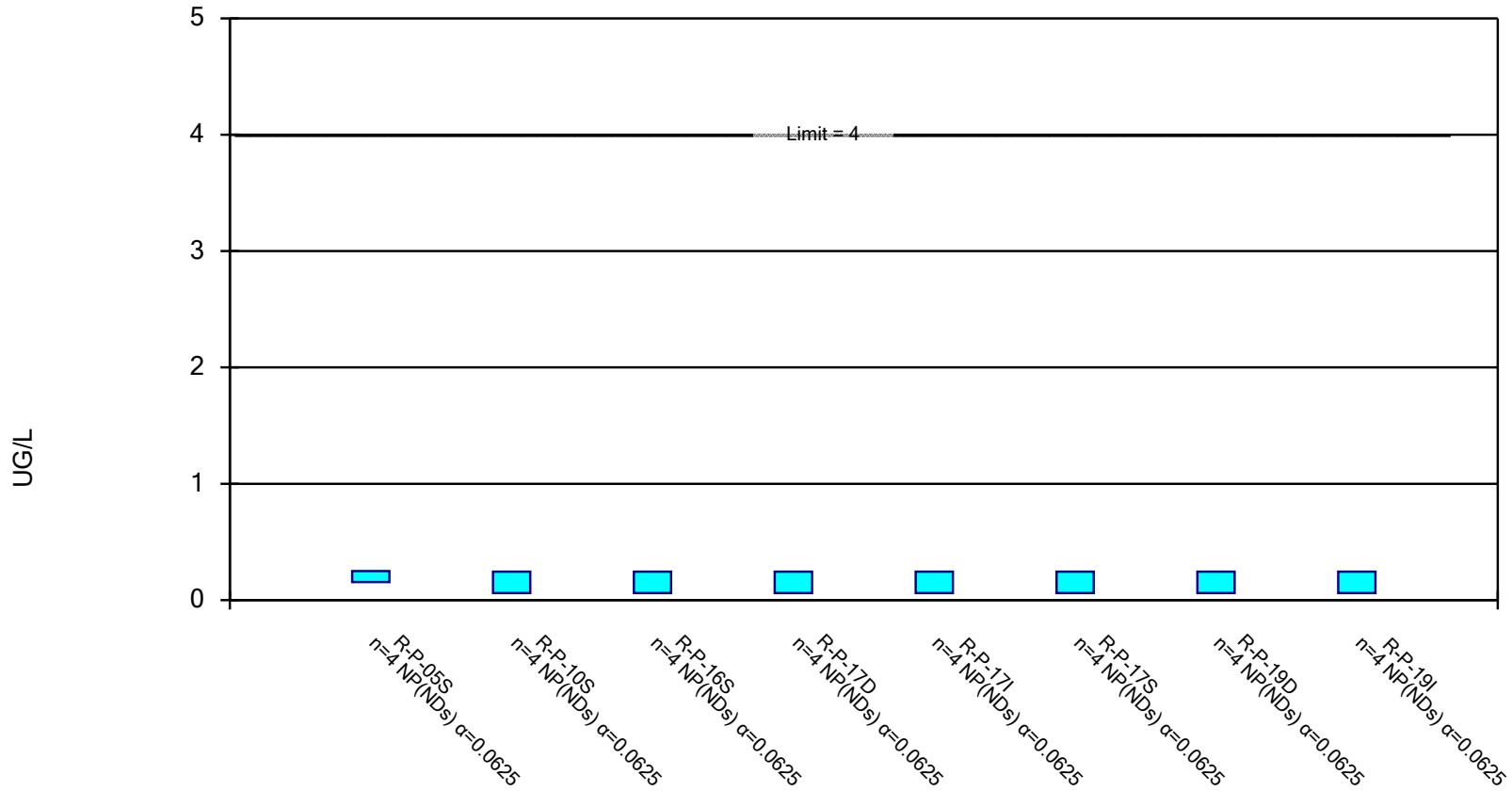


Constituent: BARIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

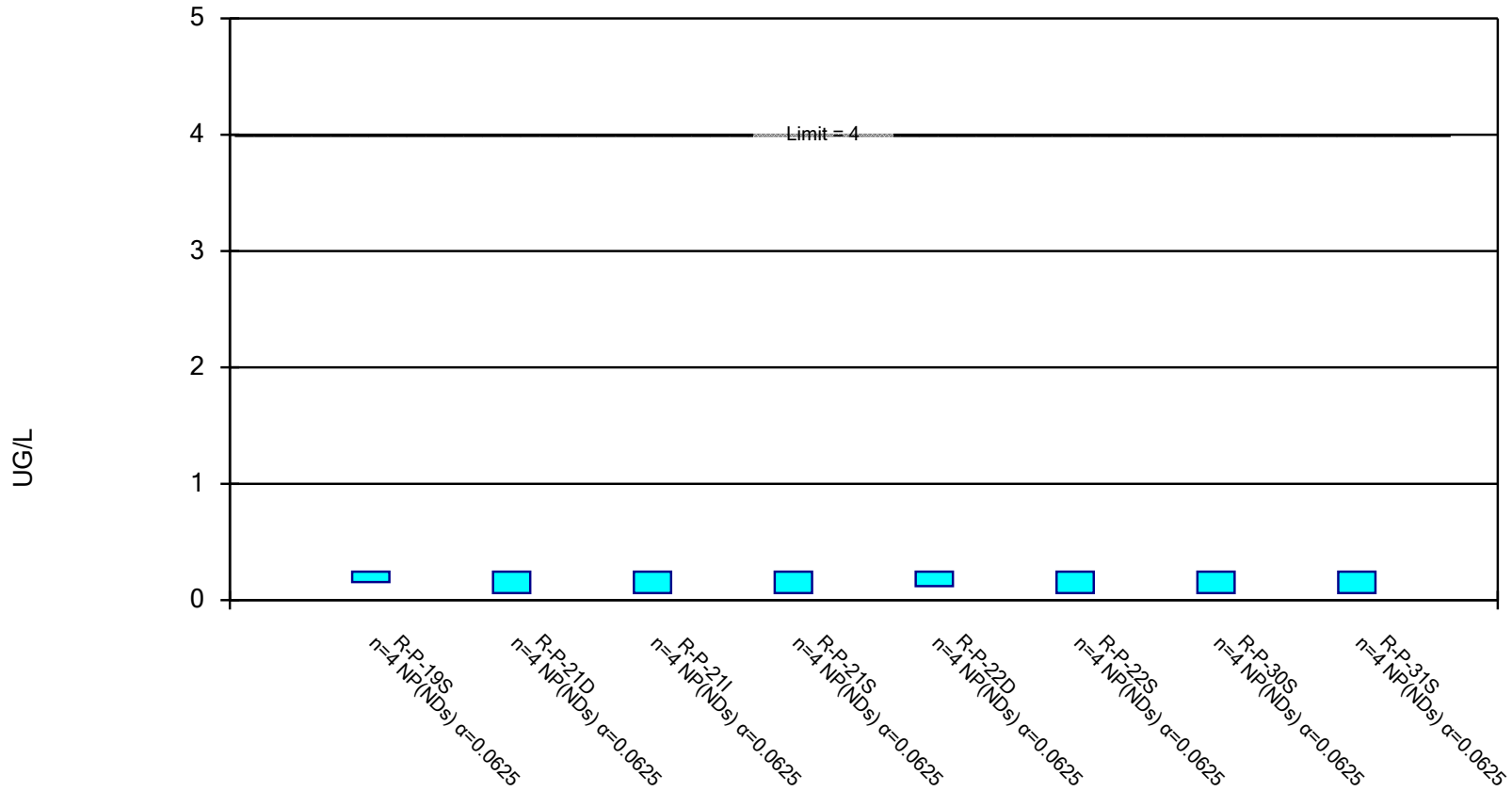


Constituent: BERYLLIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



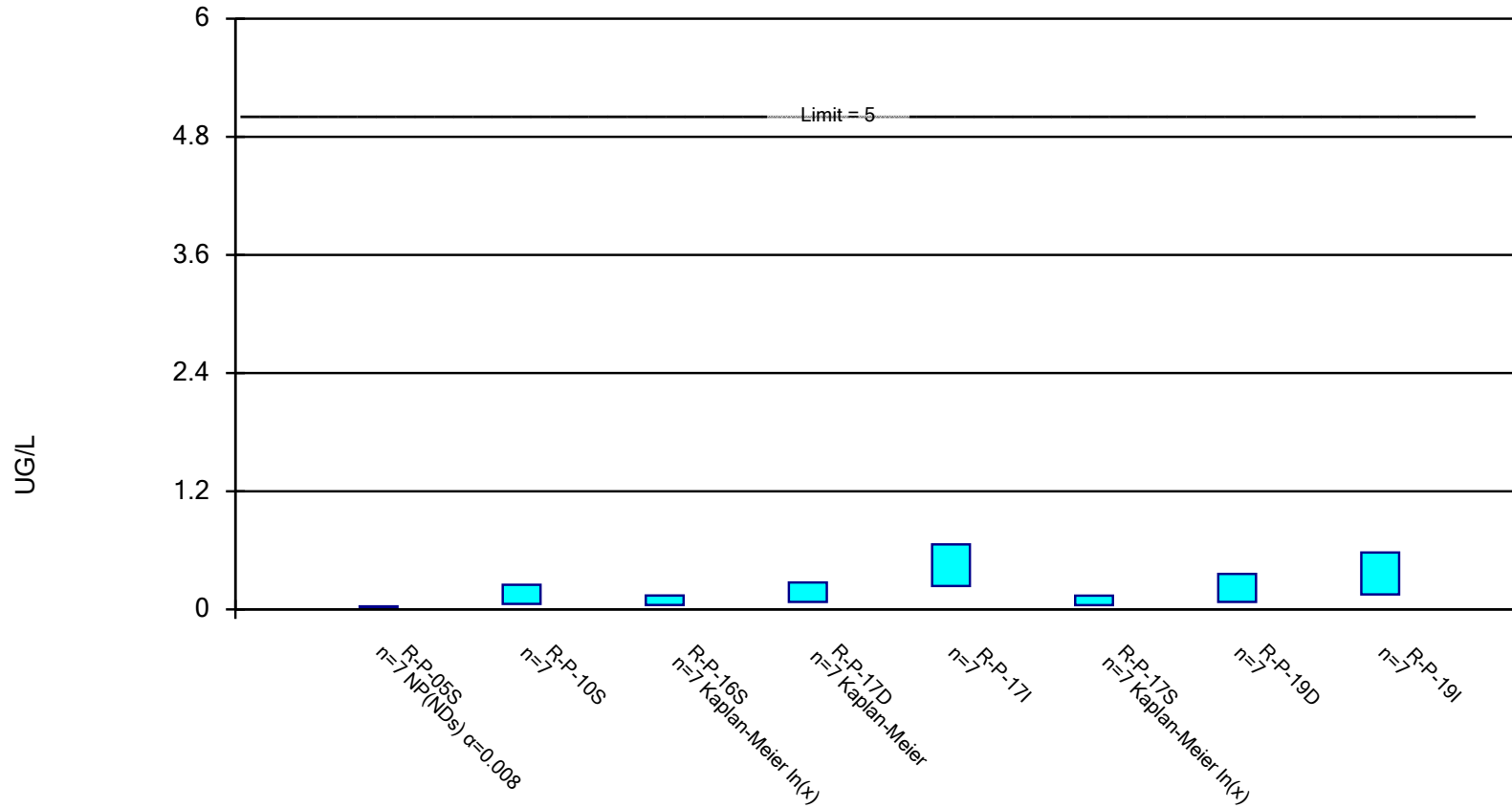
Constituent: BERYLLIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

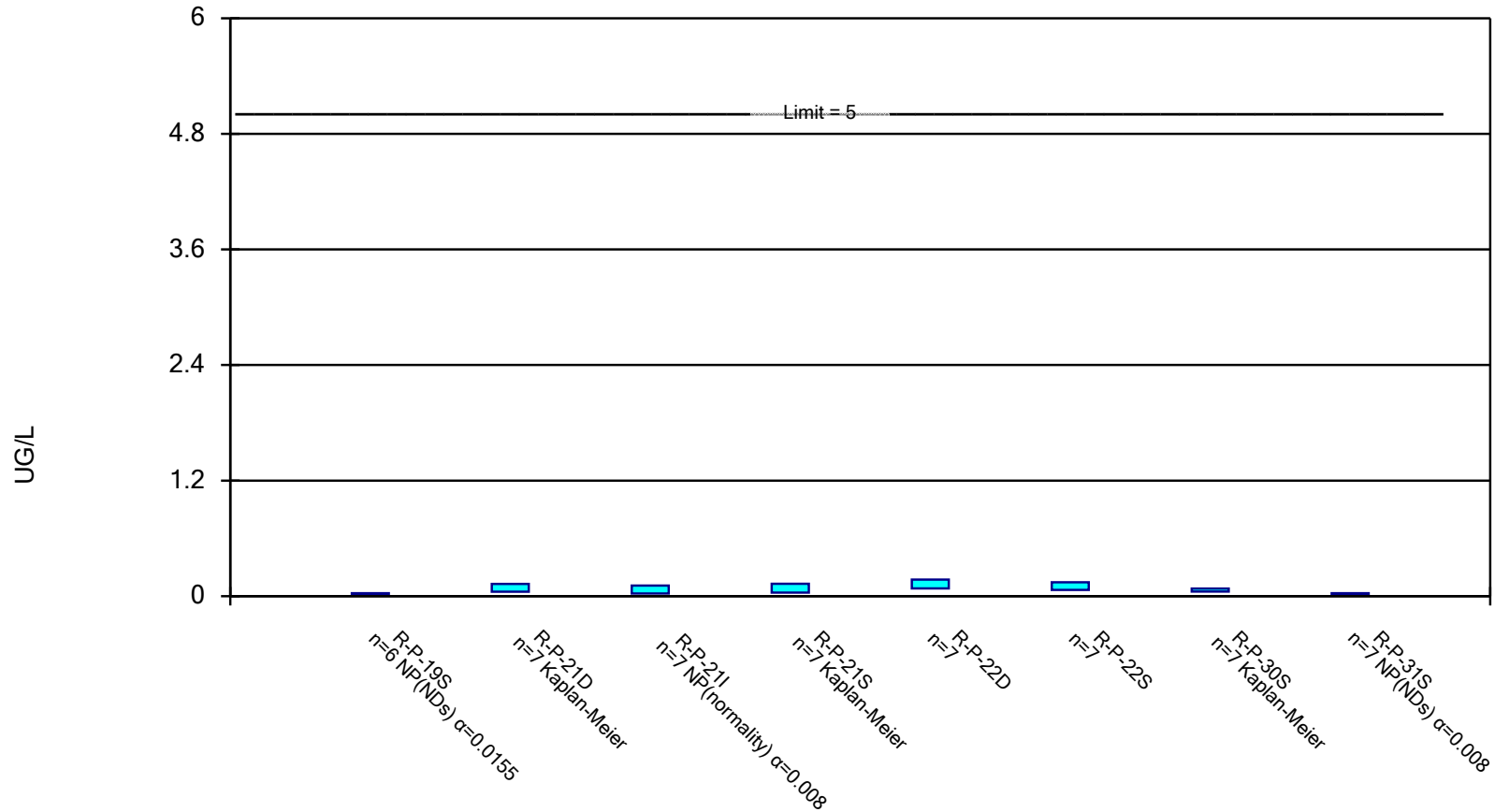


Constituent: CADMIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

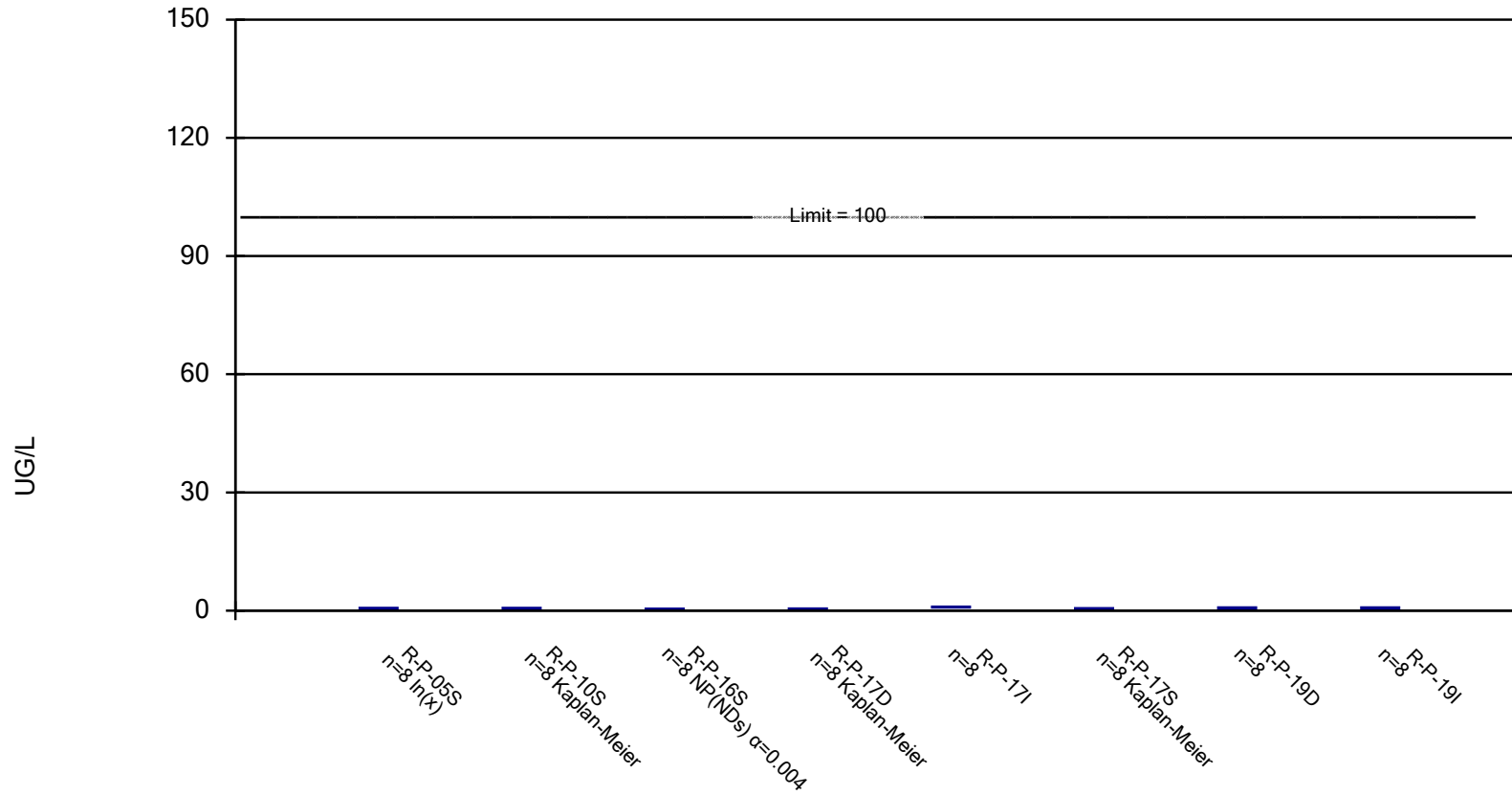


Constituent: CADMIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

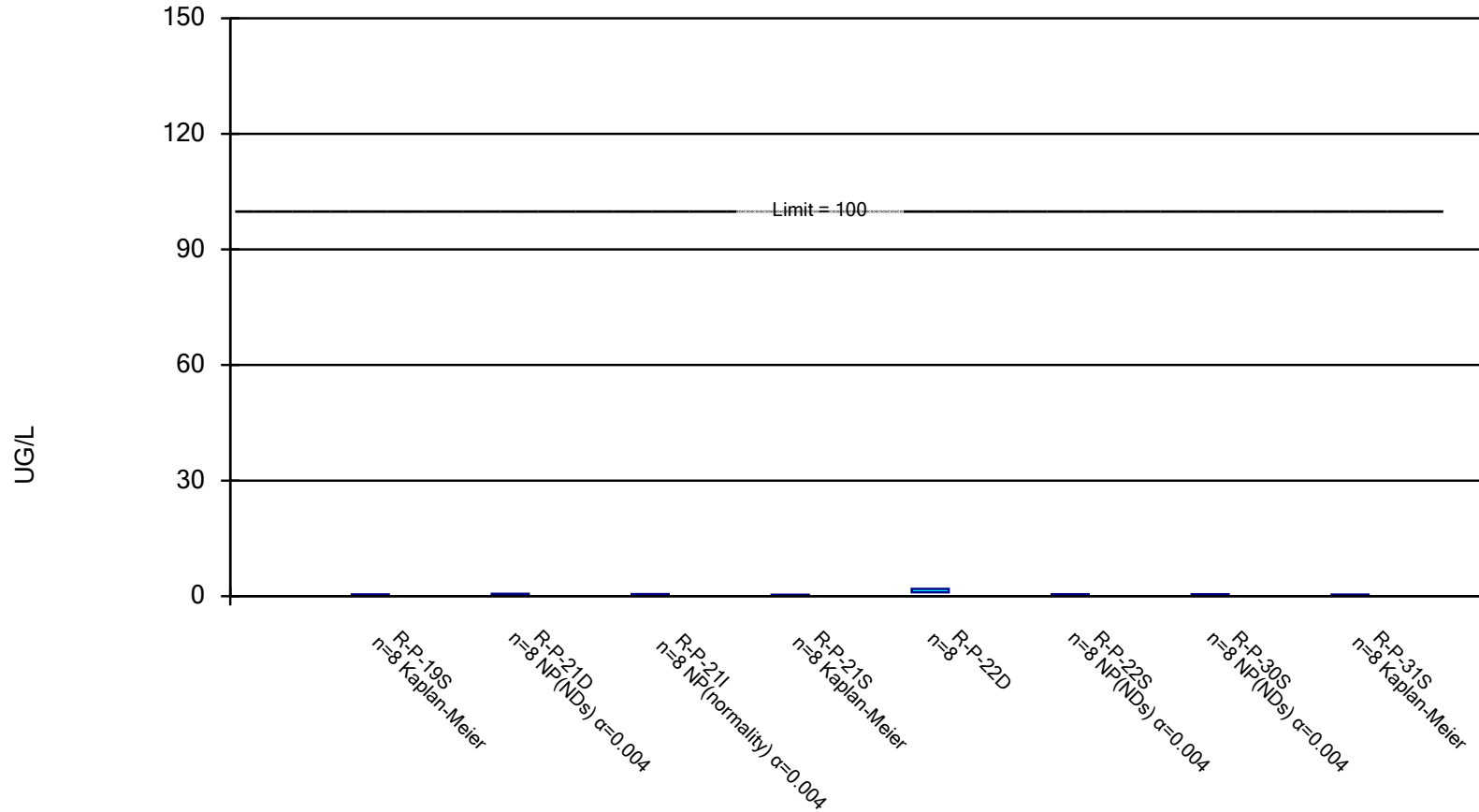


Constituent: CHROMIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

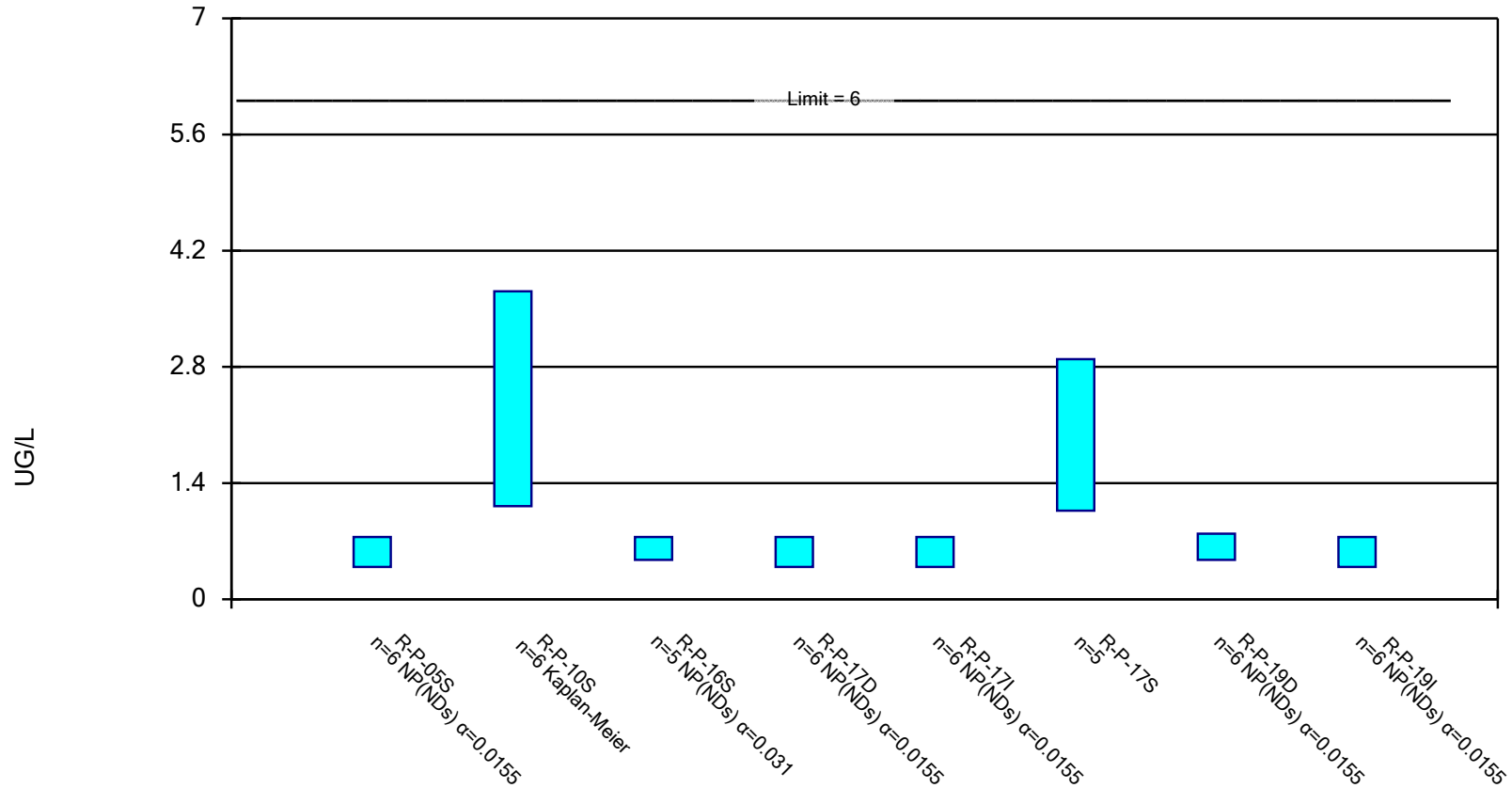


Constituent: CHROMIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

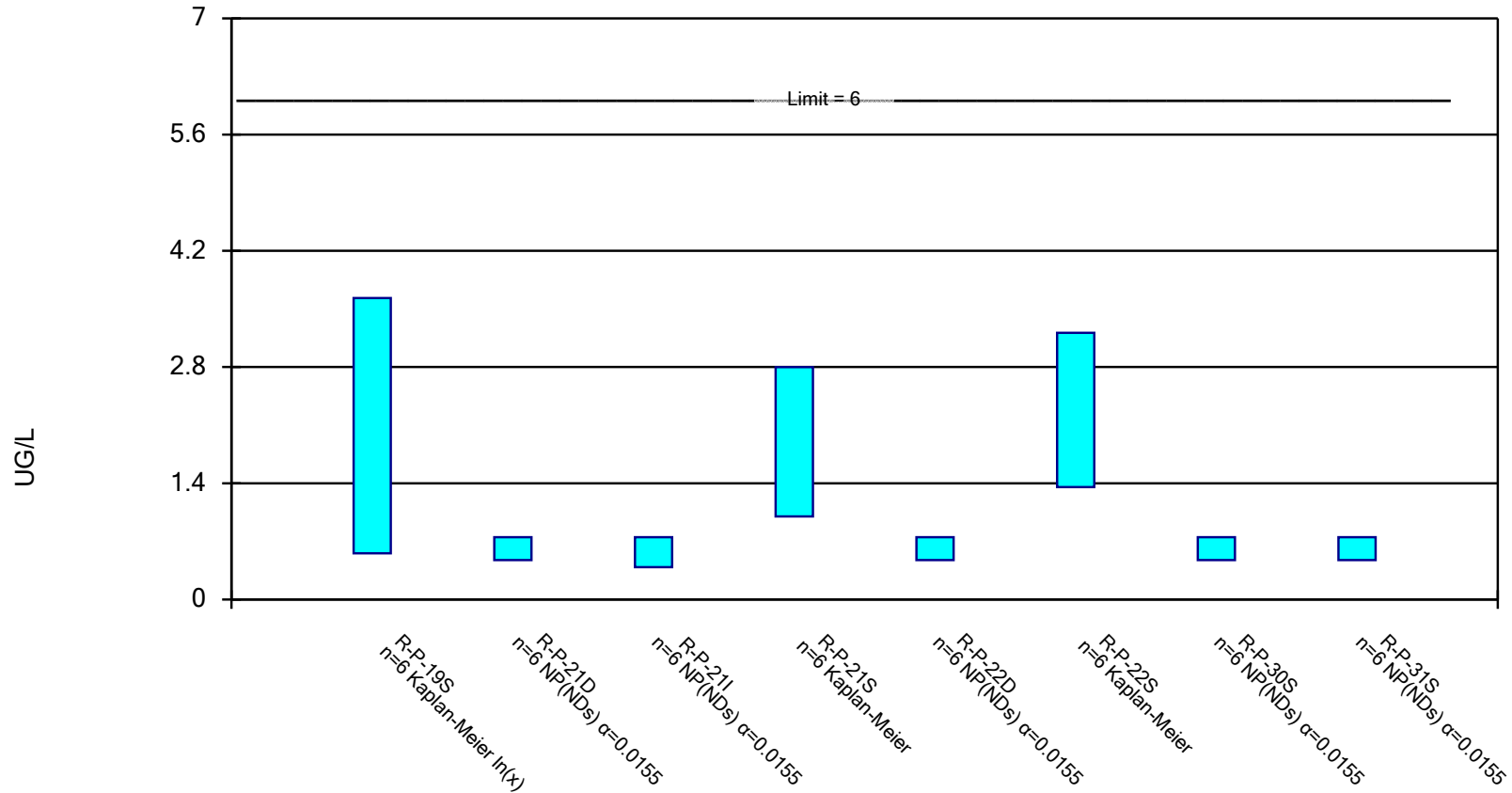


Constituent: COBALT, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

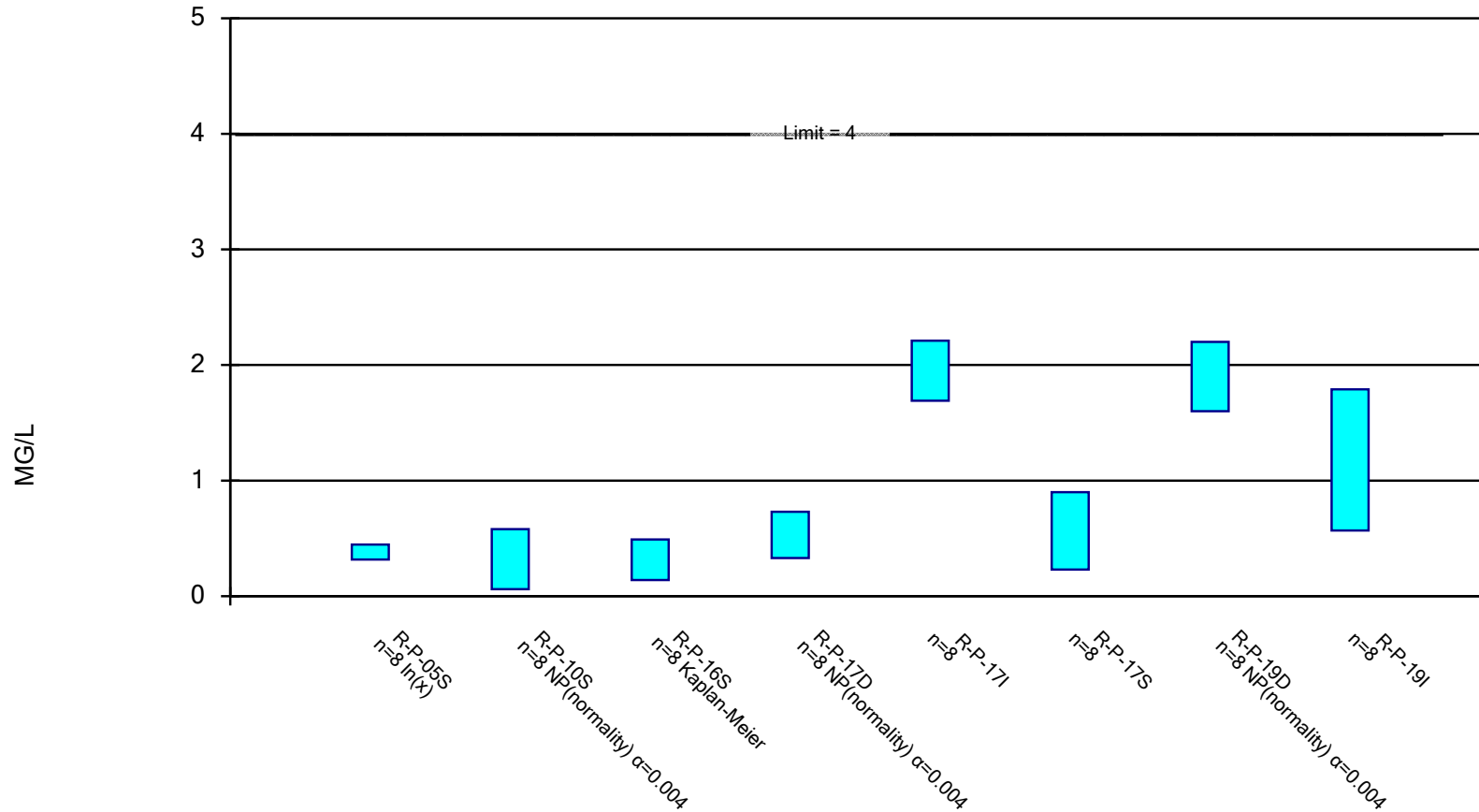


Constituent: COBALT, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

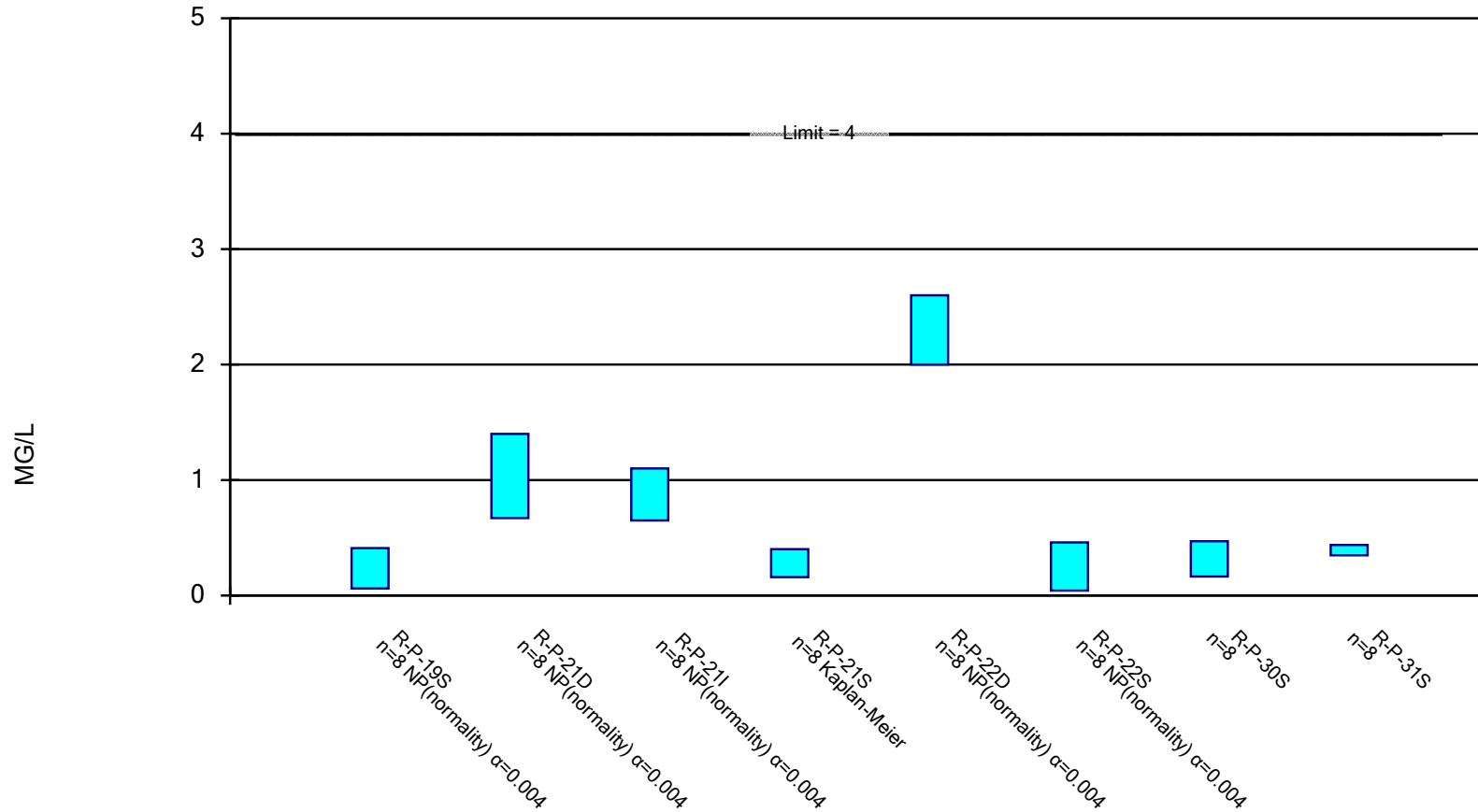


Constituent: FLUORIDE, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



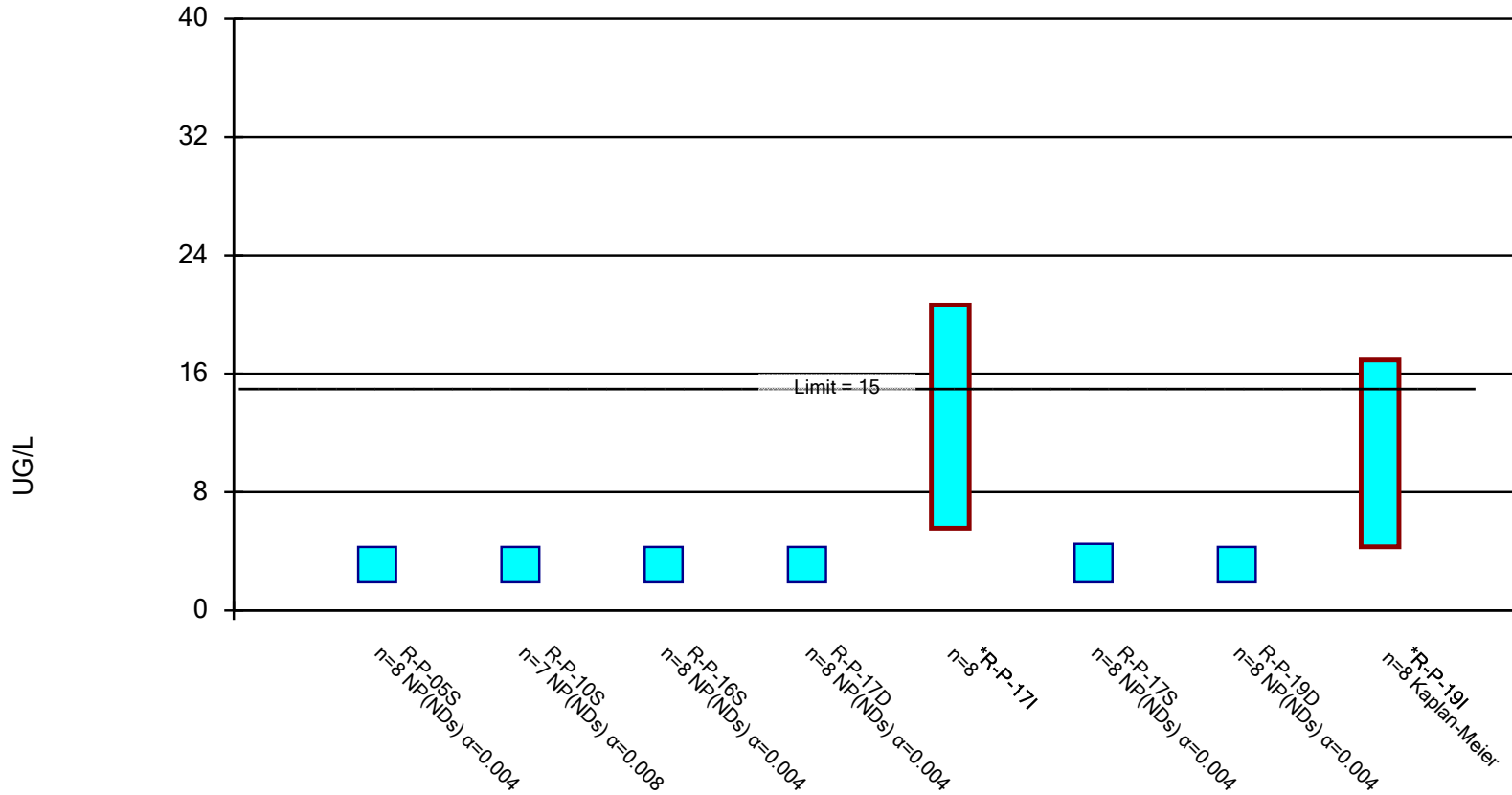
Constituent: FLUORIDE, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

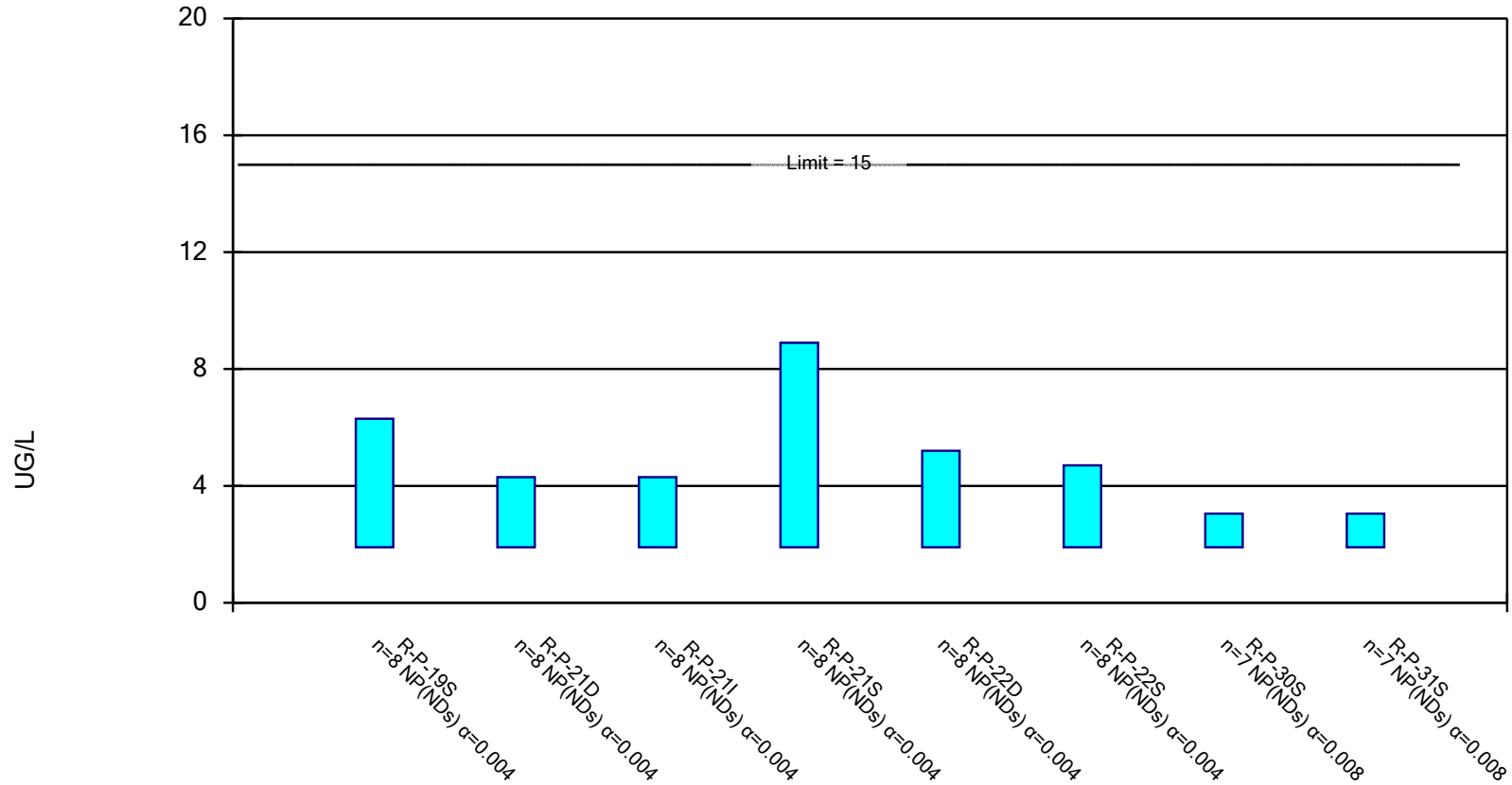


Constituent: LEAD, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

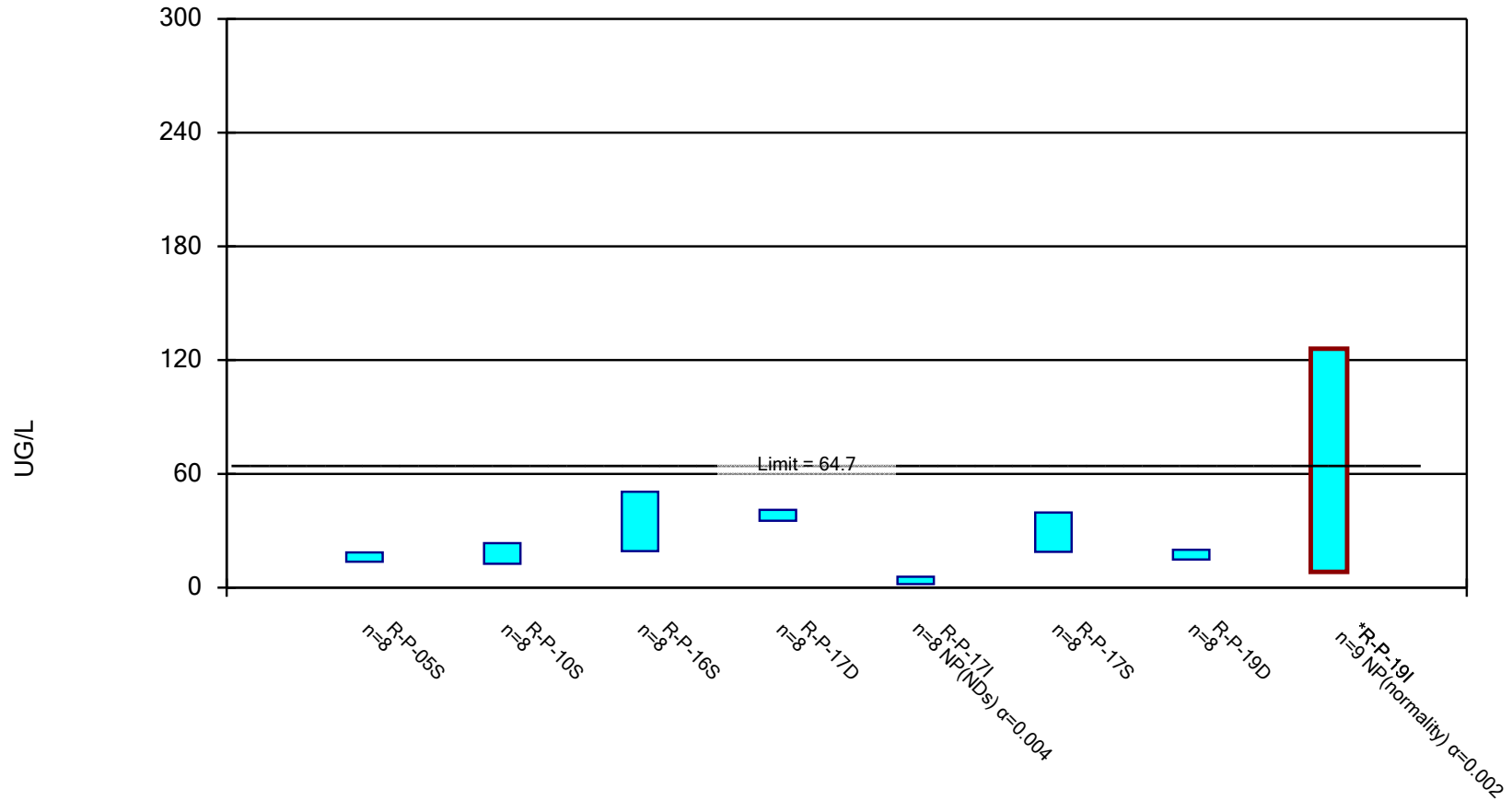


Constituent: LEAD, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

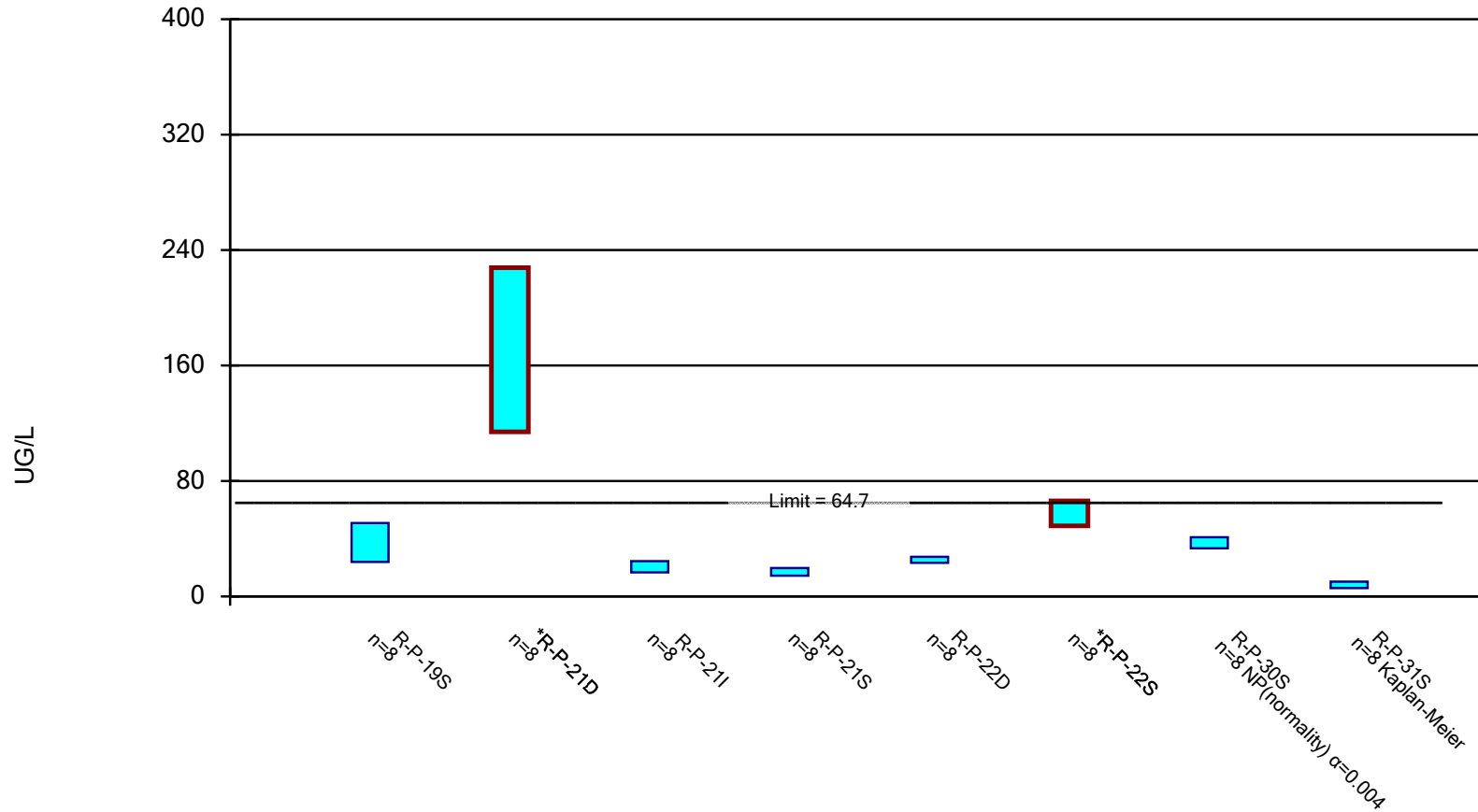


Constituent: LITHIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

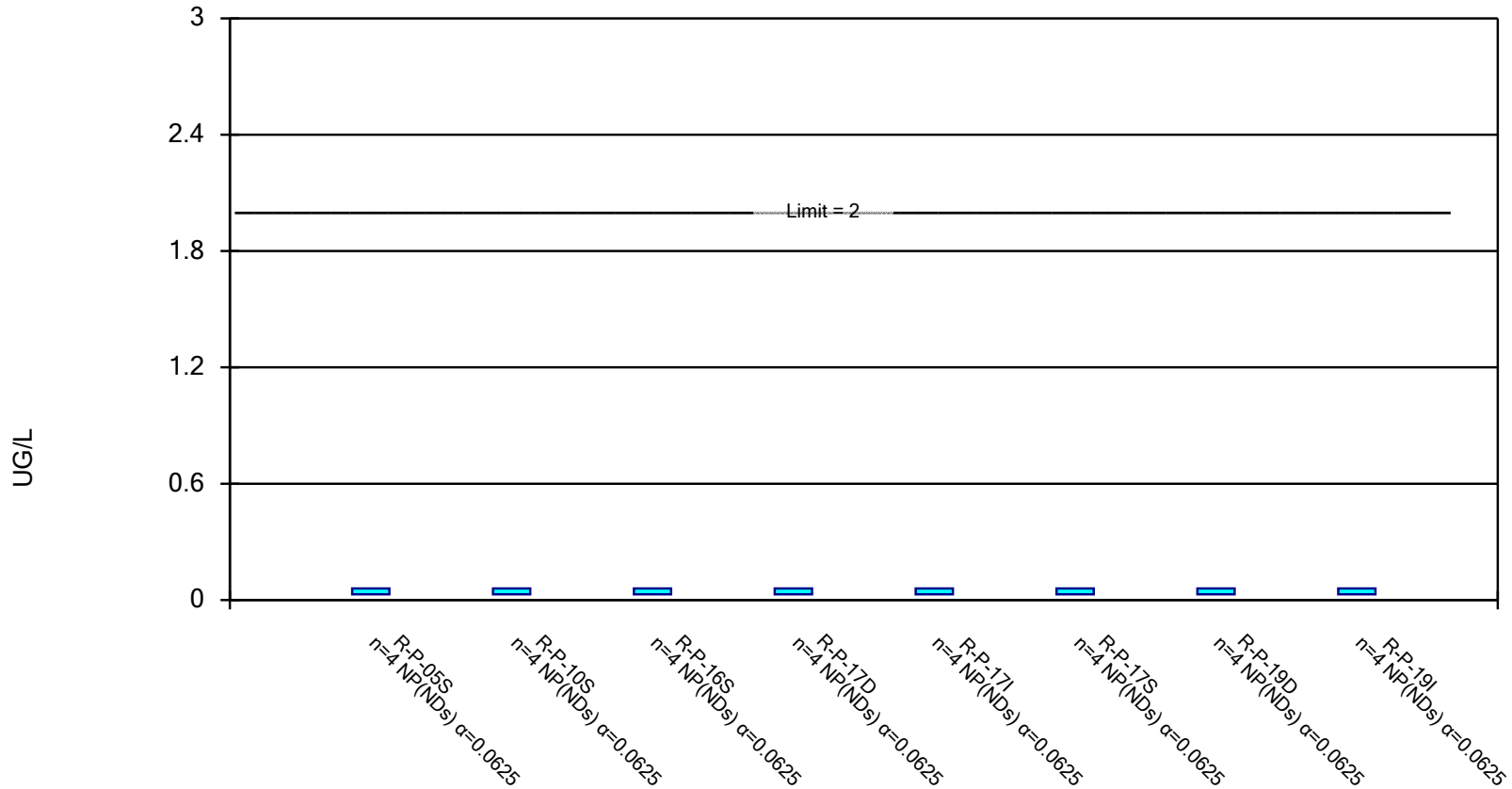


Constituent: LITHIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

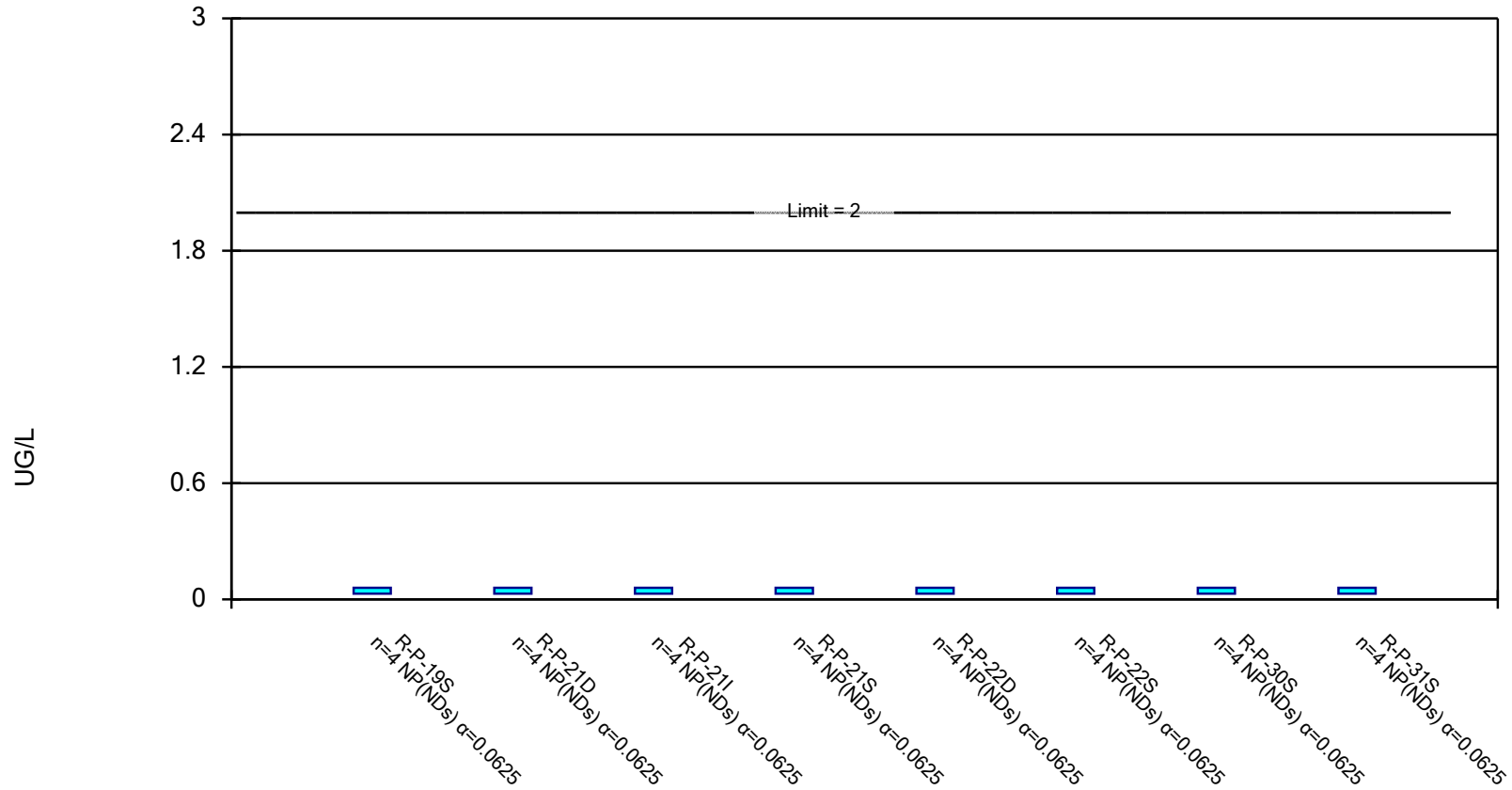


Constituent: MERCURY, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

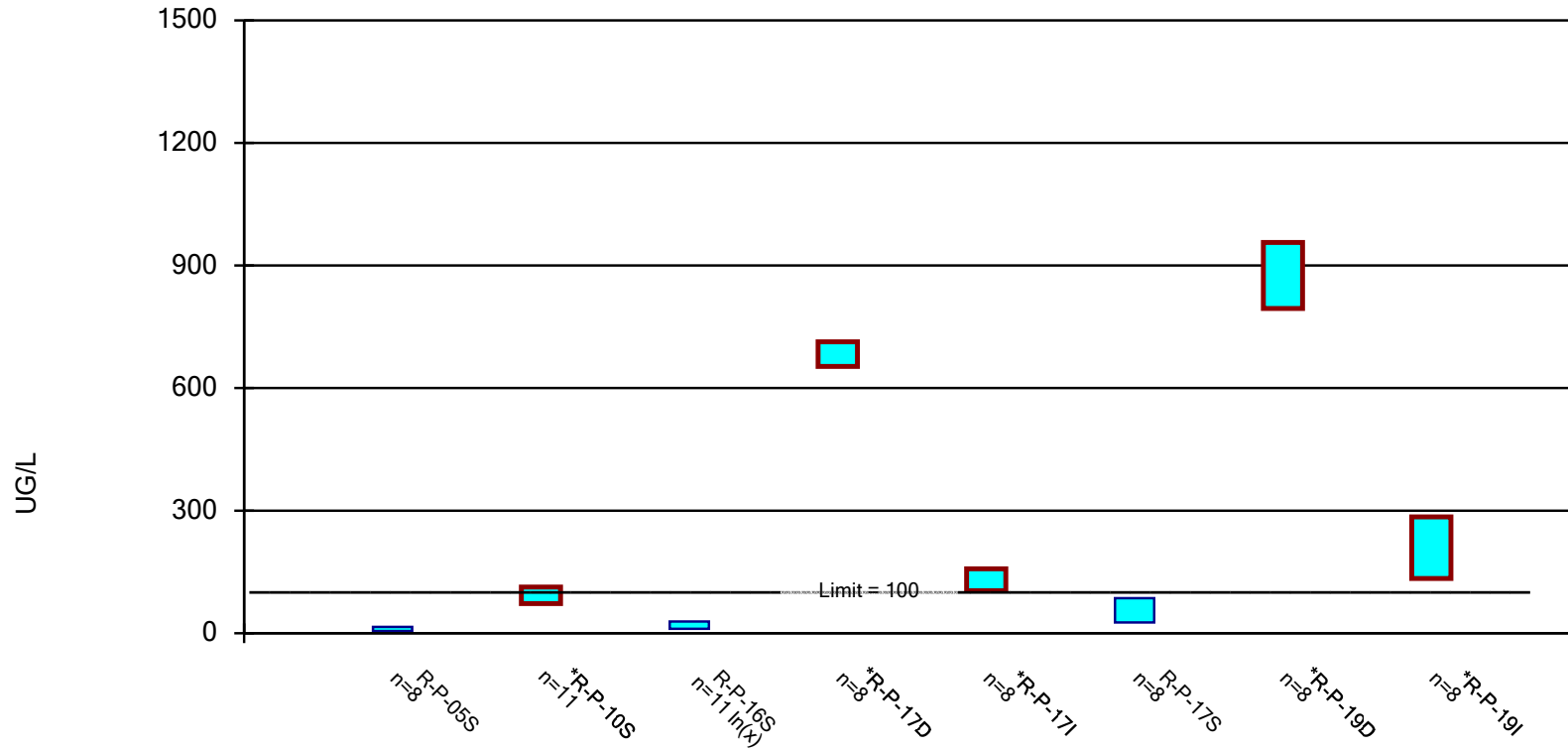


Constituent: MERCURY, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Parametric Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

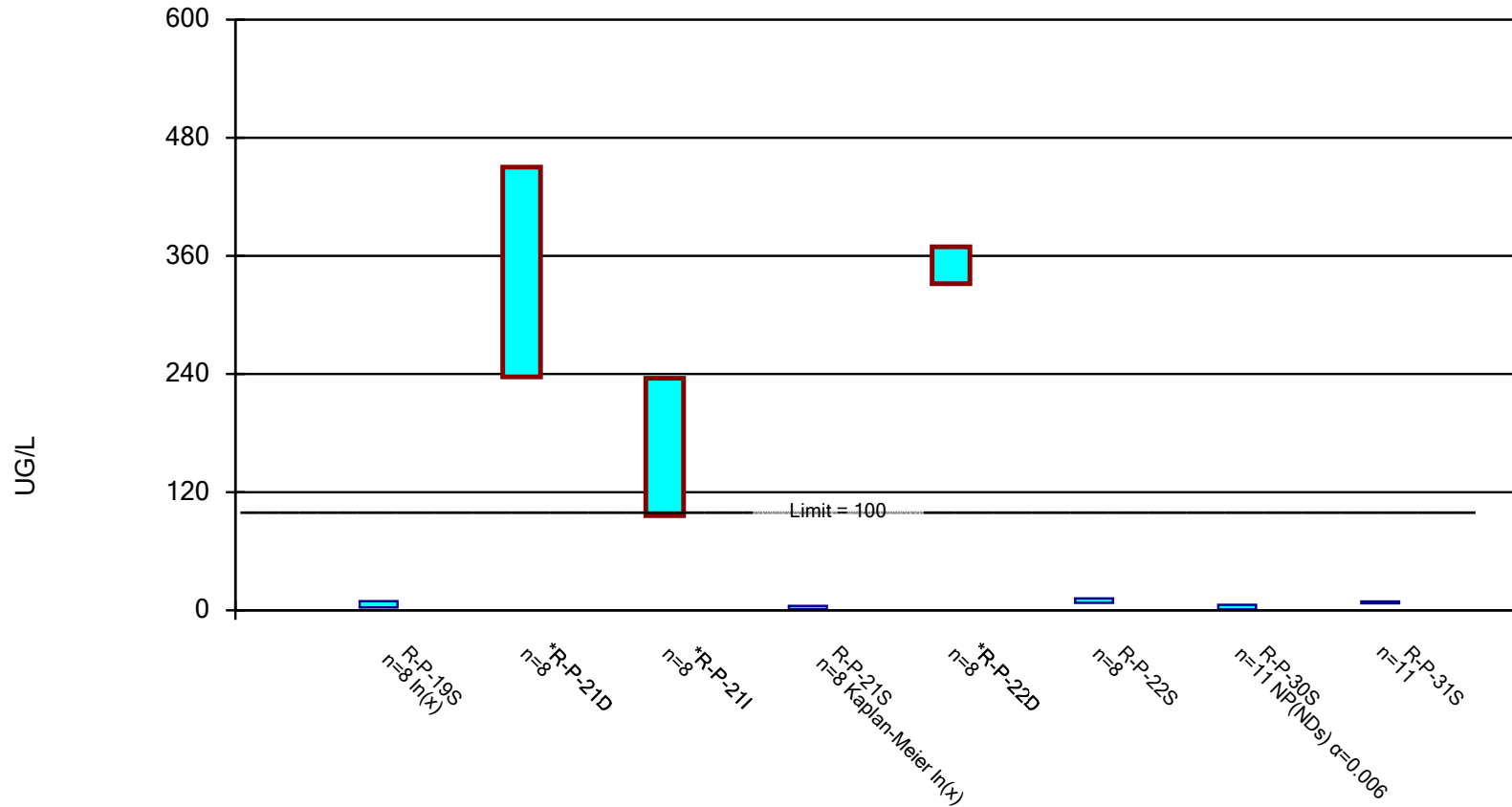


Constituent: MOLYBDENUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance limit is exceeded.\* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



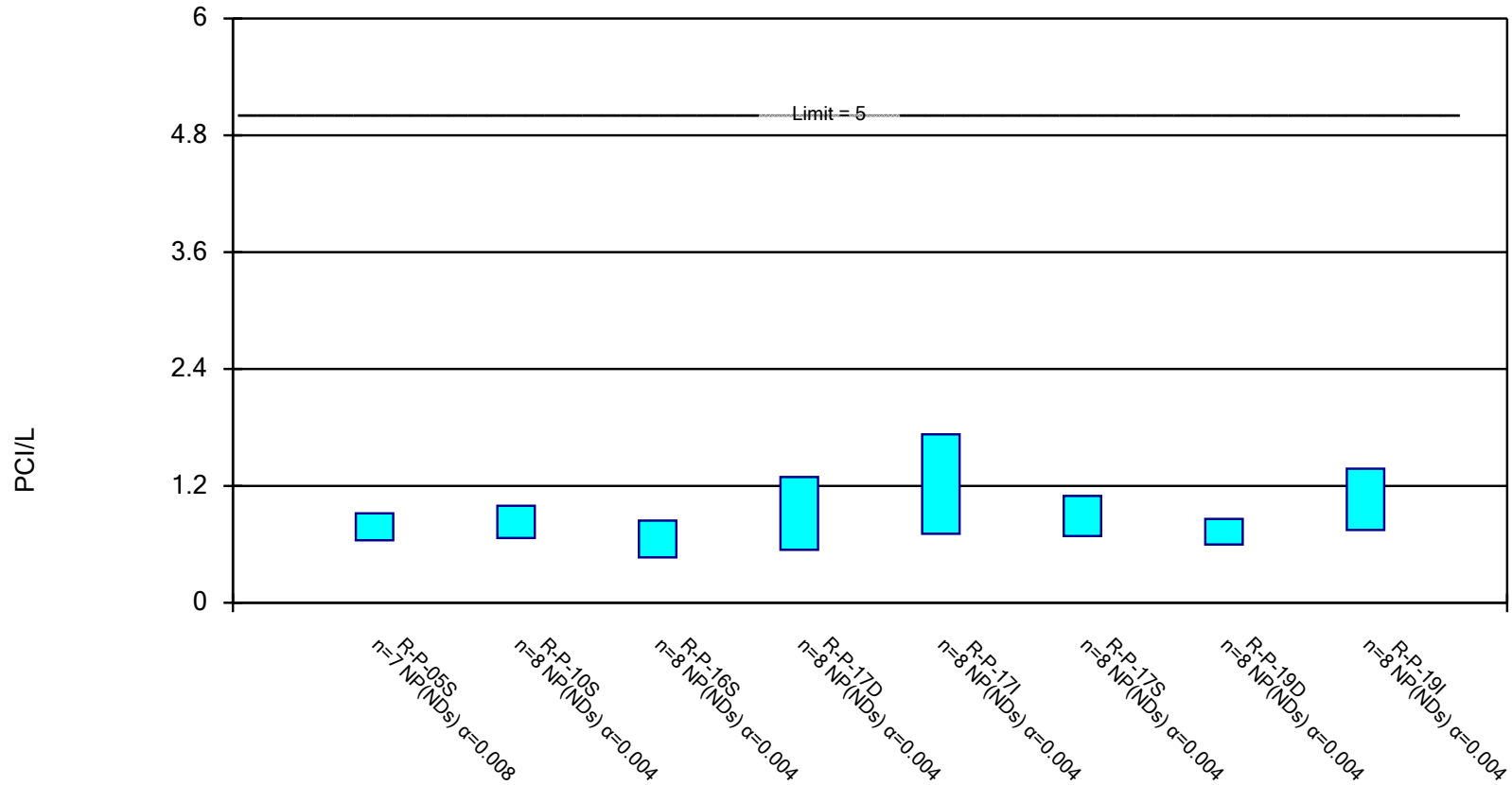
Constituent: MOLYBDENUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



## Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

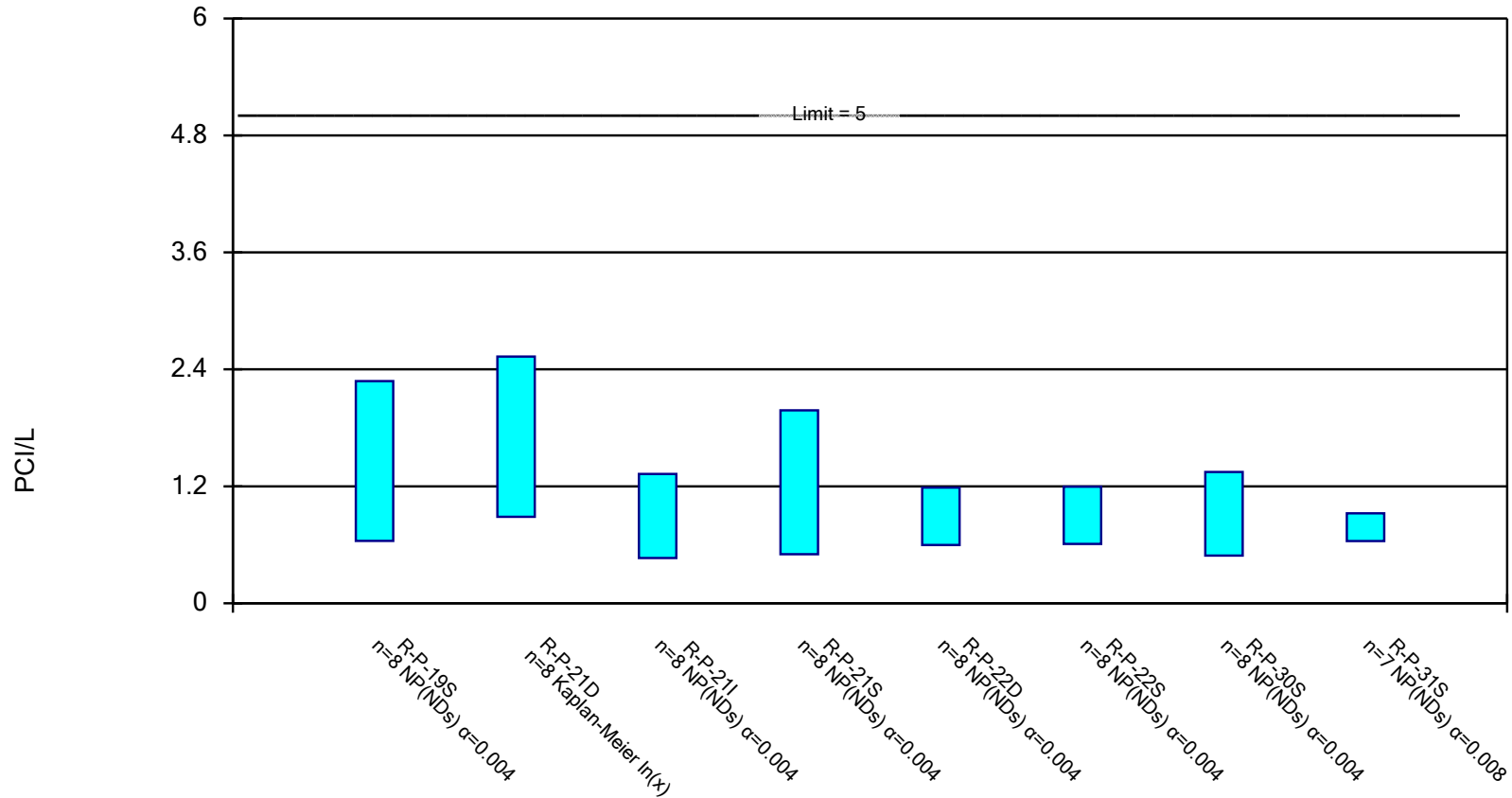


Constituent: RADIUM [226 + 228] Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

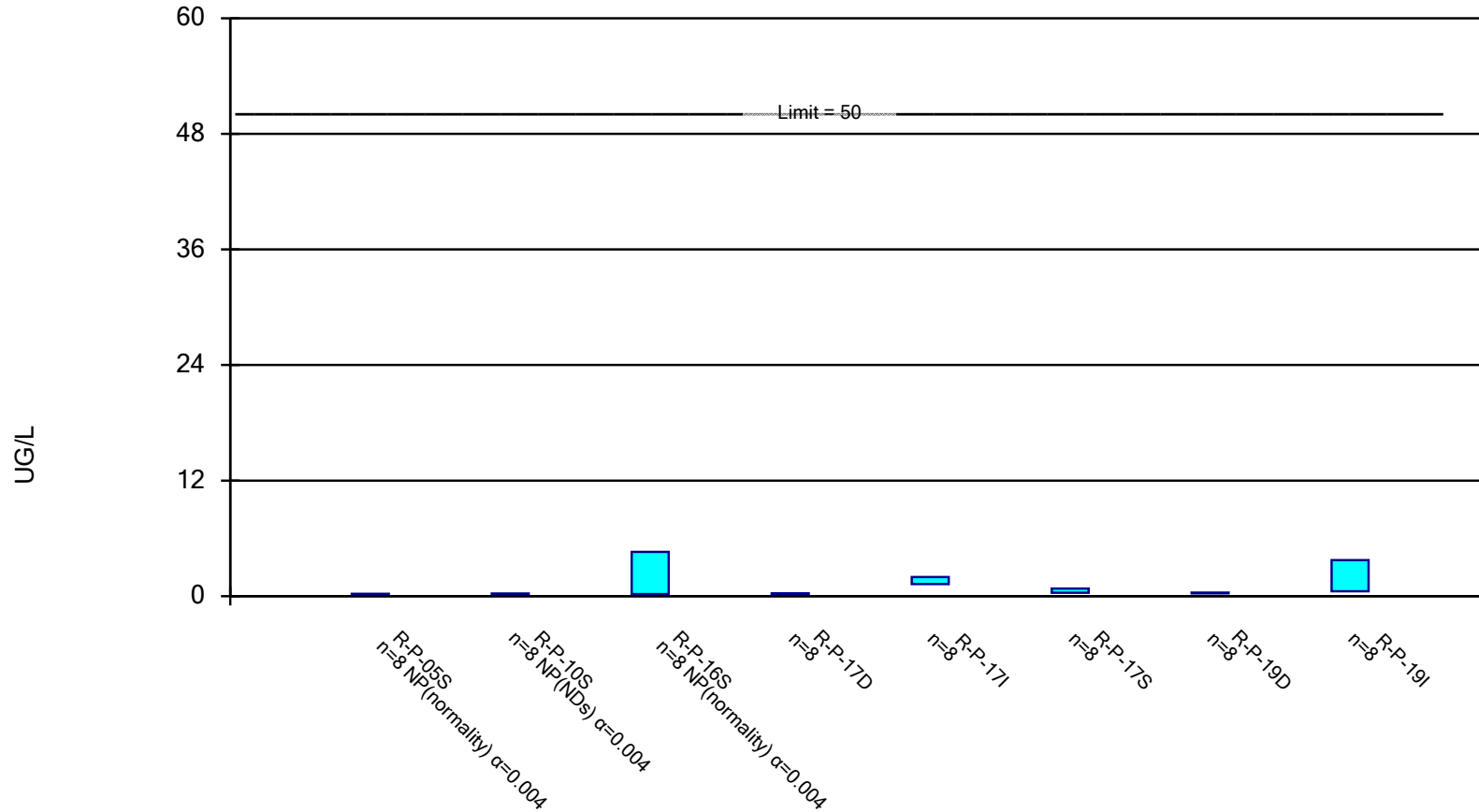


Constituent: RADIUM [226 + 228] Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

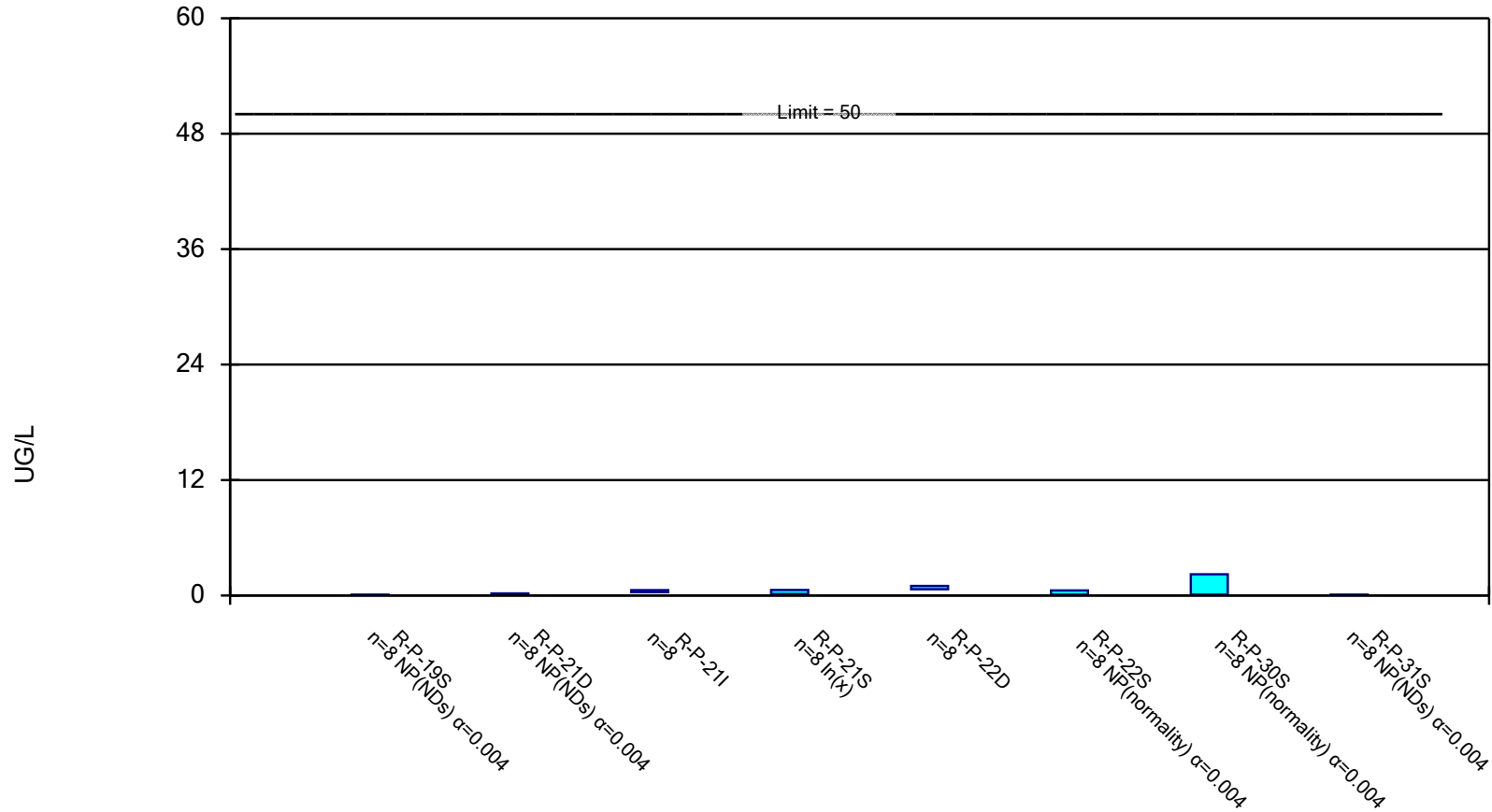


Constituent: SELENIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

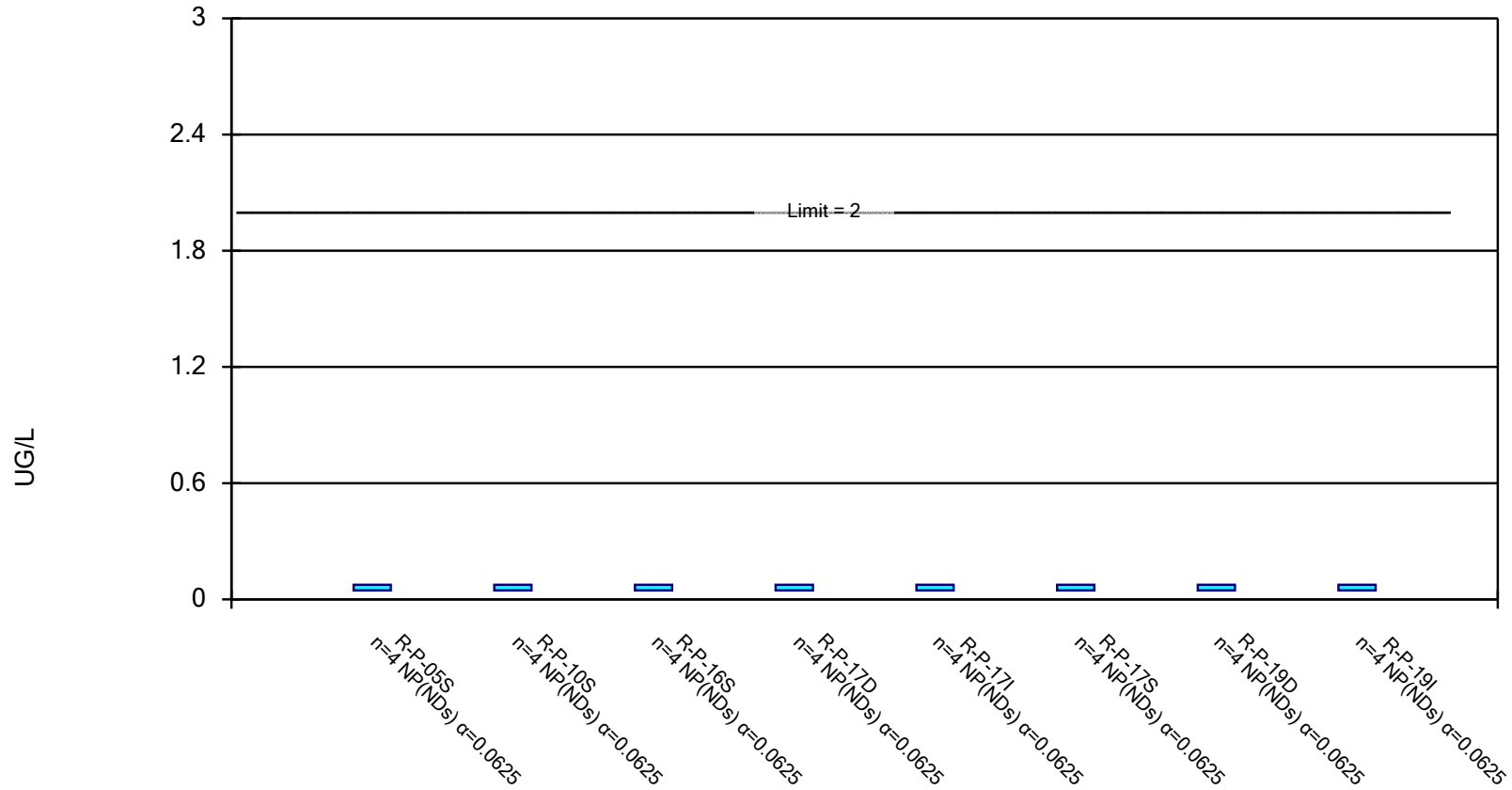


Constituent: SELENIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

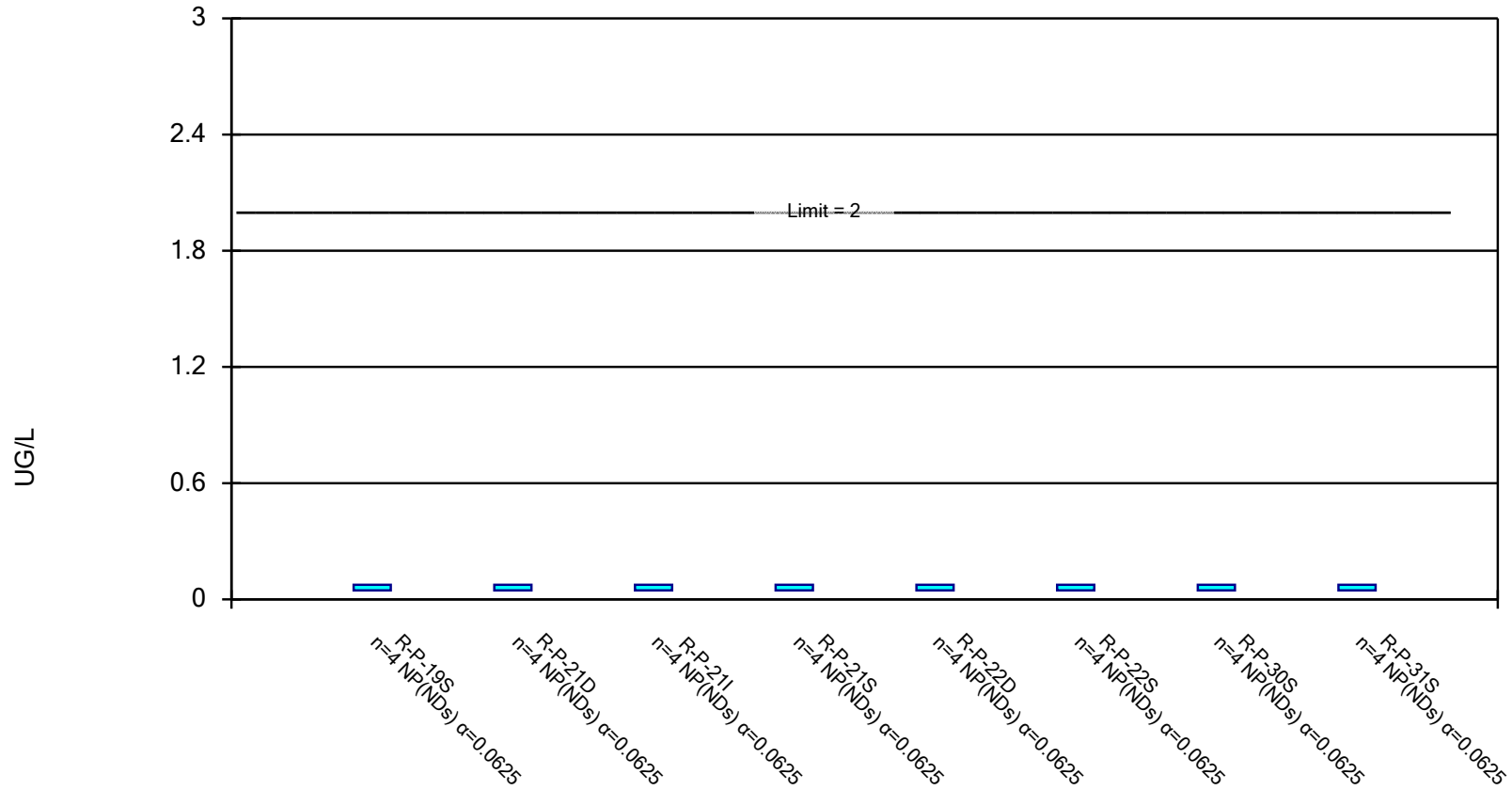


Constituent: THALLIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



Constituent: THALLIUM, TOTAL Analysis Run 7/21/2023 10:31 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

# Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/21/2023, 10:32 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	R-P-05S	0.06	0.0485	6	No	8	100	No	0.004	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-10S	0.14	0.0485	6	No	8	62.5	No	0.004	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-16S	0.14	0.0485	6	No	8	87.5	No	0.004	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-17D	0.06	0.0485	6	No	8	100	No	0.004	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-17I	0.5499	0.2376	6	No	8	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-17S	0.46	0.0485	6	No	8	50	No	0.004	NP (normality)
ANTIMONY, TOTAL (UG/L)	R-P-19D	0.06	0.0485	6	No	8	100	No	0.004	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-19I	5.288	1.015	6	No	8	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-19S	0.15	0.0485	6	No	8	87.5	No	0.004	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21D	0.06	0.0485	6	No	8	100	No	0.004	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21I	0.06	0.0485	6	No	8	100	No	0.004	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21S	0.19	0.0485	6	No	8	87.5	No	0.004	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-22D	0.1885	0.09998	6	No	8	25	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-22S	0.06	0.0485	6	No	8	100	No	0.004	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-30S	0.06	0.0485	6	No	7	100	No	0.008	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-31S	0.06	0.0485	6	No	8	100	No	0.004	NP (NDs)
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-P-05S</b>	<b>190.5</b>	<b>145.3</b>	<b>30</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
ARSENIC, TOTAL (UG/L)	R-P-10S	9.963	4.182	30	No	11	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-16S	2.05	1.095	30	No	11	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-17D	1.3	1.1	30	No	8	0	No	0.004	NP (normality)
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-P-17I</b>	<b>66.36</b>	<b>40.37</b>	<b>30</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-P-17S</b>	<b>37.92</b>	<b>24.78</b>	<b>30</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
ARSENIC, TOTAL (UG/L)	R-P-19D	0.7829	0.5921	30	No	8	0	No	0.01	Param.
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-P-19I</b>	<b>288.1</b>	<b>57.93</b>	<b>30</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
ARSENIC, TOTAL (UG/L)	R-P-19S	24.37	10.31	30	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-21D	0.6053	0.5022	30	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-21I	5.9	5	30	No	8	0	No	0.004	NP (normality)
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-P-21S</b>	<b>123.9</b>	<b>26.07</b>	<b>30</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
ARSENIC, TOTAL (UG/L)	R-P-22D	10.33	8.467	30	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-22S	5.357	1.17	30	No	8	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-30S	1.999	1.006	30	No	11	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-31S	24.81	15.75	30	No	10	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-05S	201.2	159.8	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-10S	195.9	118.8	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-16S	121.2	50.65	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17D	105.9	98.19	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17I	30.1	13.6	2000	No	8	0	No	0.004	NP (normality)
BARIUM, TOTAL (UG/L)	R-P-17S	152.3	59.56	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-19D	103.1	67.82	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-19I	50.4	11	2000	No	8	0	No	0.004	NP (normality)
BARIUM, TOTAL (UG/L)	R-P-19S	536.5	207	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21D	340	71.99	2000	No	8	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21I	51.39	26.51	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21S	551.2	233	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-22D	74.86	65.09	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-22S	213.4	142.9	2000	No	8	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-30S	109.3	86.91	2000	No	8	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-31S	167.1	130	2000	No	7	0	No	0.01	Param.
BERYLLIUM, TOTAL (UG/L)	R-P-05S	0.25	0.155	4	No	4	75	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-10S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)

# Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/21/2023, 10:32 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
BERYLLIUM, TOTAL (UG/L)	R-P-16S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-17D	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-17I	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-17S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-19D	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-19I	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-19S	0.245	0.155	4	No	4	75	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-21D	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-21I	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-21S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-22D	0.245	0.12	4	No	4	75	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-22S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-30S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-P-31S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-05S	0.031	0.025	5	No	7	100	No	0.008	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-10S	0.2491	0.05517	5	No	7	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-16S	0.1404	0.04404	5	No	7	28.57	ln(x)	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17D	0.2734	0.07576	5	No	7	28.57	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17I	0.6599	0.2373	5	No	7	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17S	0.1397	0.04306	5	No	7	42.86	ln(x)	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19D	0.3603	0.076	5	No	7	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19I	0.5784	0.1513	5	No	7	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19S	0.031	0.025	5	No	6	100	No	0.0155	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-21D	0.1273	0.04613	5	No	7	42.86	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-21I	0.11	0.028	5	No	7	42.86	No	0.008	NP (normality)
CADMIUM, TOTAL (UG/L)	R-P-21S	0.1287	0.03706	5	No	7	42.86	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-22D	0.1716	0.08095	5	No	7	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-22S	0.1442	0.06553	5	No	7	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-30S	0.07927	0.04721	5	No	7	42.86	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-31S	0.031	0.025	5	No	7	100	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-05S	0.6724	0.3299	100	No	8	12.5	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-10S	0.676	0.2107	100	No	8	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-16S	0.5	0.11	100	No	8	87.5	No	0.004	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-17D	0.548	0.1945	100	No	8	37.5	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-17I	1.019	0.8087	100	No	8	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-17S	0.5965	0.2235	100	No	8	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19D	0.8153	0.3722	100	No	8	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19I	0.7975	0.2625	100	No	8	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19S	0.4496	0.2379	100	No	8	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-21D	0.6	0.11	100	No	8	62.5	No	0.004	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-21I	0.55	0.22	100	No	8	12.5	No	0.004	NP (normality)
CHROMIUM, TOTAL (UG/L)	R-P-21S	0.3921	0.205	100	No	8	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-22D	1.893	1.004	100	No	8	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-22S	0.5	0.11	100	No	8	75	No	0.004	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-30S	0.5	0.11	100	No	8	62.5	No	0.004	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-31S	0.4213	0.1902	100	No	8	50	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-05S	0.75	0.39	6	No	6	100	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-10S	3.711	1.122	6	No	6	33.33	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-16S	0.75	0.475	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-17D	0.75	0.39	6	No	6	100	No	0.0155	NP (NDs)



## Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/21/2023, 10:32 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
COBALT, TOTAL (UG/L)	R-P-17I	0.75	0.39	6	No	6	100	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-17S	2.893	1.067	6	No	5	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-19D	0.79	0.475	6	No	6	83.33	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-19I	0.75	0.39	6	No	6	100	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-19S	3.631	0.556	6	No	6	50	ln(x)	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-21D	0.75	0.475	6	No	6	100	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-21I	0.75	0.39	6	No	6	100	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-21S	2.799	1.001	6	No	6	33.33	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-22D	0.75	0.475	6	No	6	100	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-22S	3.213	1.354	6	No	6	16.67	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-30S	0.75	0.475	6	No	6	100	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-31S	0.75	0.475	6	No	6	100	No	0.0155	NP (NDs)
FLUORIDE, TOTAL (MG/L)	R-P-05S	0.4469	0.3176	4	No	8	0	ln(x)	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-10S	0.58	0.06	4	No	8	25	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-16S	0.4903	0.1397	4	No	8	25	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-17D	0.73	0.33	4	No	8	0	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-17I	2.21	1.69	4	No	8	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-17S	0.8997	0.2303	4	No	8	12.5	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19D	2.2	1.6	4	No	8	0	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-19I	1.789	0.5683	4	No	8	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19S	0.41	0.06	4	No	8	12.5	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-21D	1.4	0.67	4	No	8	0	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-21I	1.1	0.65	4	No	8	0	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-21S	0.4005	0.1595	4	No	8	25	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-22D	2.6	2	4	No	8	0	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-22S	0.46	0.043	4	No	8	50	No	0.004	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-30S	0.4702	0.1648	4	No	8	12.5	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-31S	0.4374	0.3476	4	No	8	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-P-05S	4.3	1.9	15	No	8	87.5	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-10S	4.3	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-16S	4.3	1.9	15	No	8	100	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-17D	4.3	1.9	15	No	8	87.5	No	0.004	NP (NDs)
<b>LEAD, TOTAL (UG/L)</b>	<b>R-P-17I</b>	<b>20.64</b>	<b>5.559</b>	<b>15</b>	<b>Yes</b>	<b>8</b>	<b>12.5</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
LEAD, TOTAL (UG/L)	R-P-17S	4.5	1.9	15	No	8	87.5	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-19D	4.3	1.9	15	No	8	100	No	0.004	NP (NDs)
<b>LEAD, TOTAL (UG/L)</b>	<b>R-P-19I</b>	<b>16.93</b>	<b>4.31</b>	<b>15</b>	<b>Yes</b>	<b>8</b>	<b>25</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
LEAD, TOTAL (UG/L)	R-P-19S	6.3	1.9	15	No	8	87.5	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21D	4.3	1.9	15	No	8	100	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21I	4.3	1.9	15	No	8	100	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21S	8.9	1.9	15	No	8	75	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-22D	5.2	1.9	15	No	8	87.5	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-22S	4.7	1.9	15	No	8	87.5	No	0.004	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-30S	3.05	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-31S	3.05	1.9	15	No	7	100	No	0.008	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-P-05S	18.58	13.67	64.7	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-10S	23.45	12.57	64.7	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-16S	50.59	19.29	64.7	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-17D	41.04	35.23	64.7	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-17I	5.7	1.85	64.7	No	8	75	No	0.004	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-P-17S	39.63	18.9	64.7	No	8	0	No	0.01	Param.

## Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/21/2023, 10:32 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
LITHIUM, TOTAL (UG/L)	R-P-19D	19.97	14.8	64.7	No	8	0	No	0.01	Param.
<b>LITHIUM, TOTAL (UG/L)</b>	<b>R-P-19I</b>	<b>126</b>	<b>8.3</b>	<b>64.7</b>	<b>Yes</b>	<b>9</b>	<b>0</b>	<b>No</b>	<b>0.002</b>	<b>NP (normality)</b>
LITHIUM, TOTAL (UG/L)	R-P-19S	50.84	23.96	64.7	No	8	0	No	0.01	Param.
<b>LITHIUM, TOTAL (UG/L)</b>	<b>R-P-21D</b>	<b>227.8</b>	<b>114</b>	<b>64.7</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
LITHIUM, TOTAL (UG/L)	R-P-21I	24.42	16.61	64.7	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-21S	19.69	14.33	64.7	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-22D	27.44	23.34	64.7	No	8	0	No	0.01	Param.
<b>LITHIUM, TOTAL (UG/L)</b>	<b>R-P-22S</b>	<b>66.15</b>	<b>48.85</b>	<b>64.7</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
LITHIUM, TOTAL (UG/L)	R-P-30S	41	33.3	64.7	No	8	0	No	0.004	NP (normality)
LITHIUM, TOTAL (UG/L)	R-P-31S	10.28	5.746	64.7	No	8	25	No	0.01	Param.
MERCURY, TOTAL (UG/L)	R-P-05S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-10S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-16S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-17D	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-17I	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-17S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-19D	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-19I	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-19S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-21D	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-21I	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-21S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-22D	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-22S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-30S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	R-P-31S	0.06	0.029	2	No	4	100	No	0.0625	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-P-05S	15.35	5.204	100	No	8	0	No	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-10S</b>	<b>113.1</b>	<b>72.45</b>	<b>100</b>	<b>Yes</b>	<b>11</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
MOLYBDENUM, TOTAL (UG/L)	R-P-16S	28.79	10.82	100	No	11	0	ln(x)	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-17D</b>	<b>713.1</b>	<b>653.1</b>	<b>100</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-17I</b>	<b>157.7</b>	<b>104</b>	<b>100</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
MOLYBDENUM, TOTAL (UG/L)	R-P-17S	85.64	26.31	100	No	8	0	No	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-19D</b>	<b>956.6</b>	<b>794.7</b>	<b>100</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-19I</b>	<b>284.6</b>	<b>133.9</b>	<b>100</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
MOLYBDENUM, TOTAL (UG/L)	R-P-19S	9.271	2.942	100	No	8	0	ln(x)	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-21D</b>	<b>450.2</b>	<b>237.1</b>	<b>100</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-21I</b>	<b>235.7</b>	<b>96.1</b>	<b>100</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
MOLYBDENUM, TOTAL (UG/L)	R-P-21S	4.494	1.066	100	No	8	37.5	ln(x)	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-22D</b>	<b>369.2</b>	<b>331.8</b>	<b>100</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
MOLYBDENUM, TOTAL (UG/L)	R-P-22S	12.06	7.567	100	No	8	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-30S	5.6	0.85	100	No	11	54.55	No	0.006	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-P-31S	8.908	7.074	100	No	11	9.091	No	0.01	Param.
RADIUM [226 + 228] (PC/L)	R-P-05S	0.9175	0.642	5	No	7	100	No	0.008	NP (NDs)
RADIUM [226 + 228] (PC/L)	R-P-10S	0.995	0.664	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PC/L)	R-P-16S	0.8435	0.4655	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PC/L)	R-P-17D	1.291	0.544	5	No	8	87.5	No	0.004	NP (NDs)
RADIUM [226 + 228] (PC/L)	R-P-17I	1.729	0.7075	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PC/L)	R-P-17S	1.096	0.6855	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PC/L)	R-P-19D	0.861	0.598	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PC/L)	R-P-19I	1.377	0.7475	5	No	8	100	No	0.004	NP (NDs)

# Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/21/2023, 10:32 AM

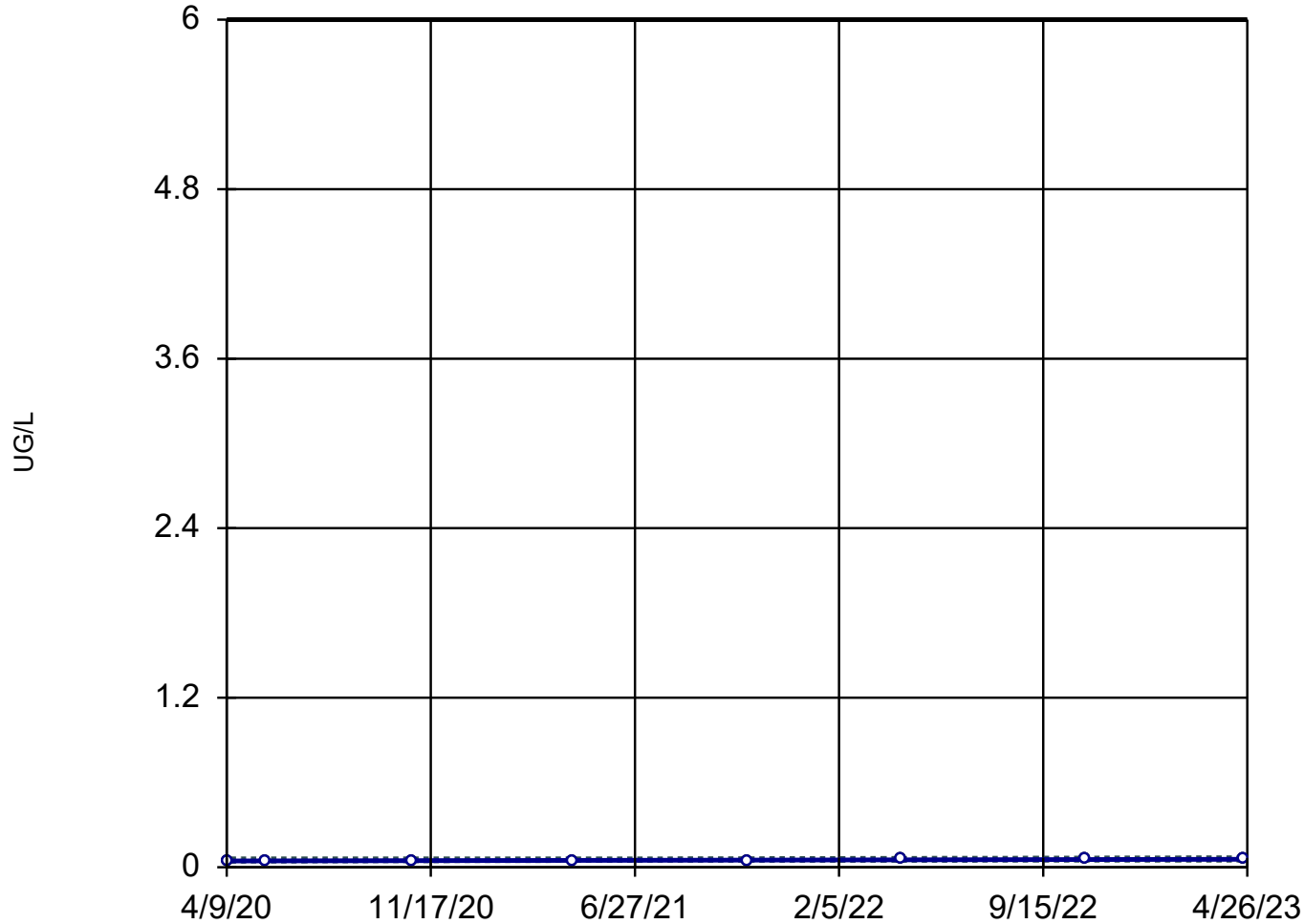
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
RADIUM [226 + 228] (PCI/L)	R-P-19S	2.279	0.6405	5	No	8	62.5	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-21D	2.532	0.8874	5	No	8	50	ln(x)	0.01	Param.
RADIUM [226 + 228] (PCI/L)	R-P-21I	1.327	0.465	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-21S	1.98	0.5025	5	No	8	87.5	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-22D	1.187	0.5985	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-22S	1.196	0.609	5	No	8	87.5	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-30S	1.347	0.4895	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-31S	0.922	0.6385	5	No	7	100	No	0.008	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-05S	0.25	0.09	50	No	8	25	No	0.004	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-10S	0.28	0.09	50	No	8	62.5	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-16S	4.6	0.22	50	No	8	0	No	0.004	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-17D	0.2975	0.2175	50	No	8	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17I	1.991	1.259	50	No	8	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17S	0.7893	0.3507	50	No	8	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19D	0.3684	0.2916	50	No	8	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19I	3.735	0.5054	50	No	8	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19S	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-21D	0.22	0.09	50	No	8	87.5	No	0.004	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-21I	0.5603	0.3422	50	No	8	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-21S	0.5724	0.1549	50	No	8	12.5	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-22D	0.9984	0.6441	50	No	8	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-22S	0.52	0.09	50	No	8	37.5	No	0.004	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-30S	2.2	0.09	50	No	8	37.5	No	0.004	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-31S	0.09	0.09	50	No	8	100	No	0.004	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-05S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-10S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-16S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-17D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-17I	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-17S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-19D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-19I	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-19S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-21D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-21I	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-21S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-22D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-22S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-30S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-P-31S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)

## Appendix B

# Sanitas Trending Confidence Bands Statistical Output

## Sen's Slope and 95% Confidence Band

R-P-05S



n = 8

Slope = 0.003868  
units per year.

Mann-Kendall  
statistic = 21  
critical = 20

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

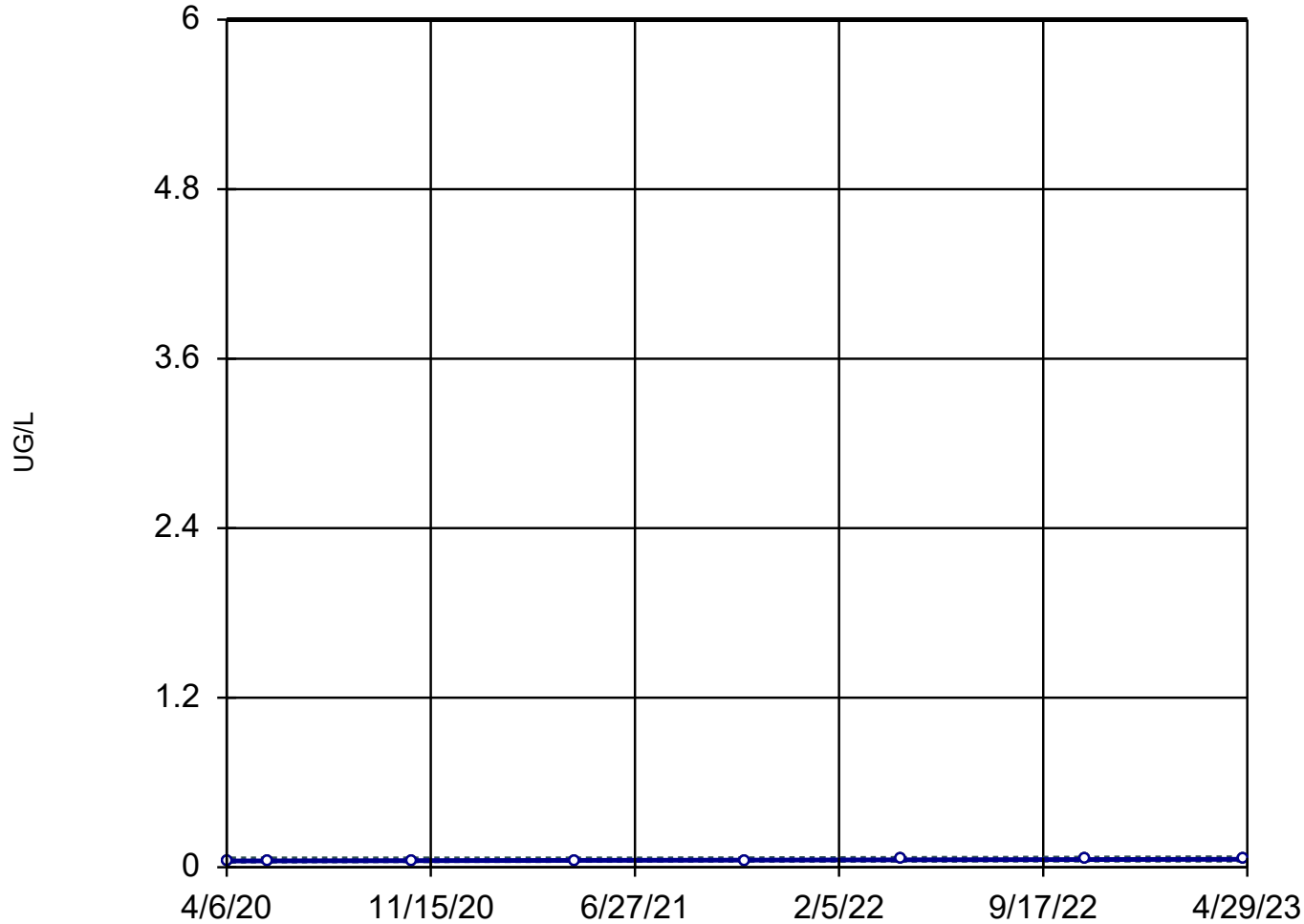
Confidence band is  
below GWPS (6).

Constituent: ANTIMONY, TOTAL Analysis Run 7/21/2023 12:54 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

R-P-17D



n = 8

Slope = 0.003849  
units per year.

Mann-Kendall  
statistic = 21  
critical = 20

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

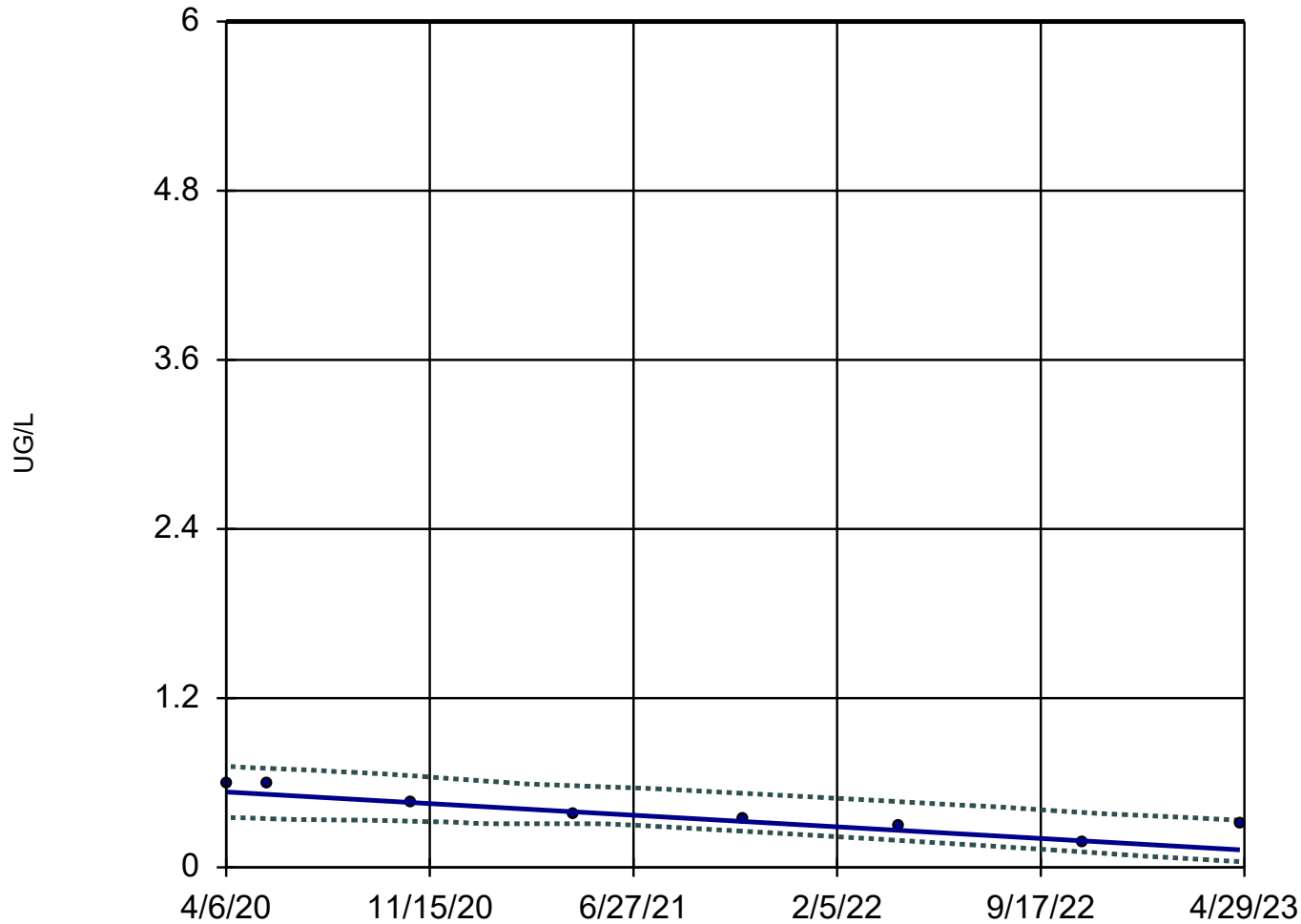
Confidence band is  
below GWPS (6).

Constituent: ANTIMONY, TOTAL Analysis Run 7/21/2023 12:54 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-P-17I



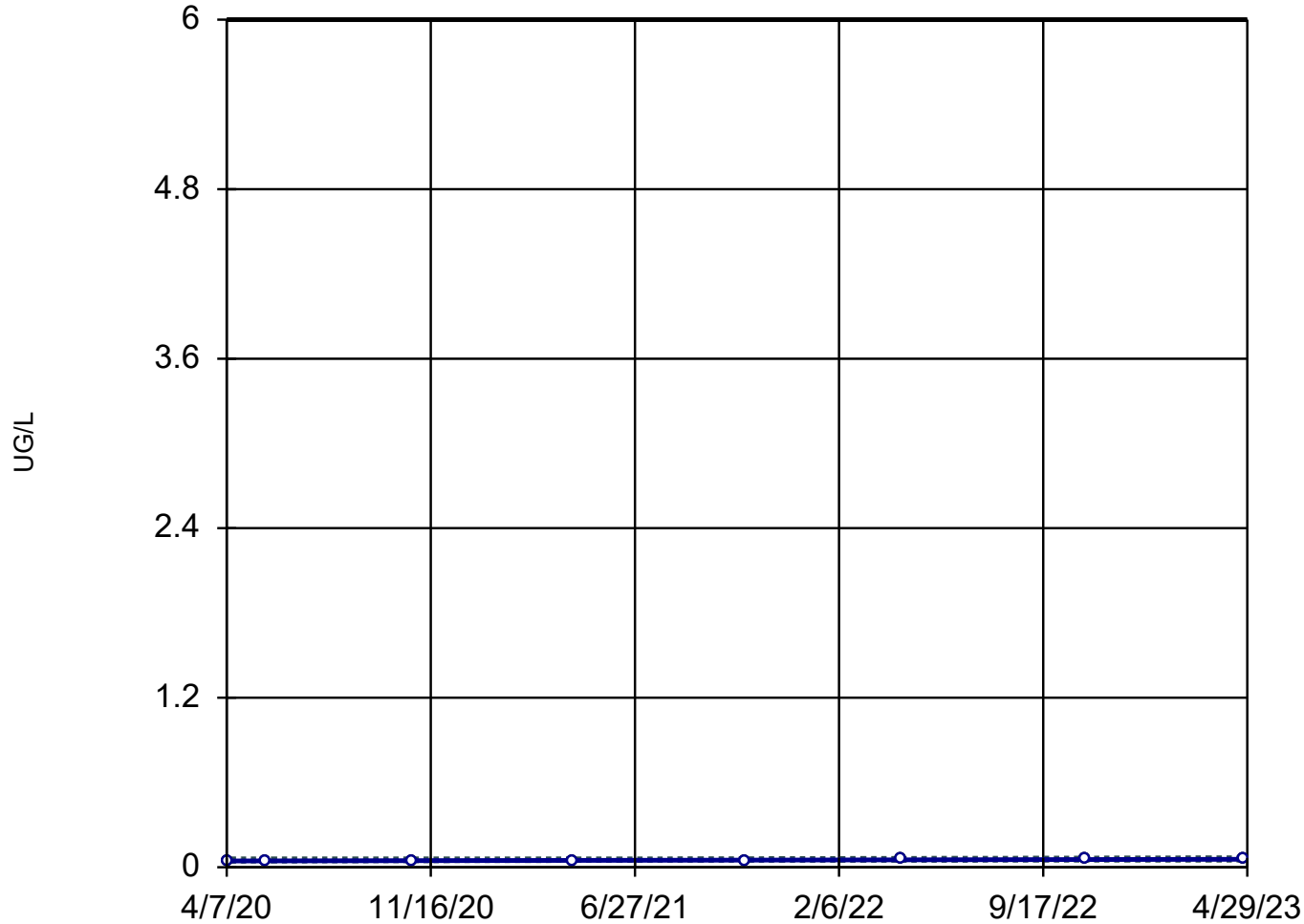
n = 8  
Slope = -0.1346 units per year.  
Mann-Kendall statistic = -22  
critical = -20  
Decreasing trend significant at 98% confidence level ( $\alpha = 0.01$  per tail).  
Confidence band is below GWPS (6).

Constituent: ANTIMONY, TOTAL Analysis Run 7/21/2023 12:54 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

R-P-19D



n = 8

Slope = 0.003851  
units per year.

Mann-Kendall  
statistic = 21  
critical = 20

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (6).

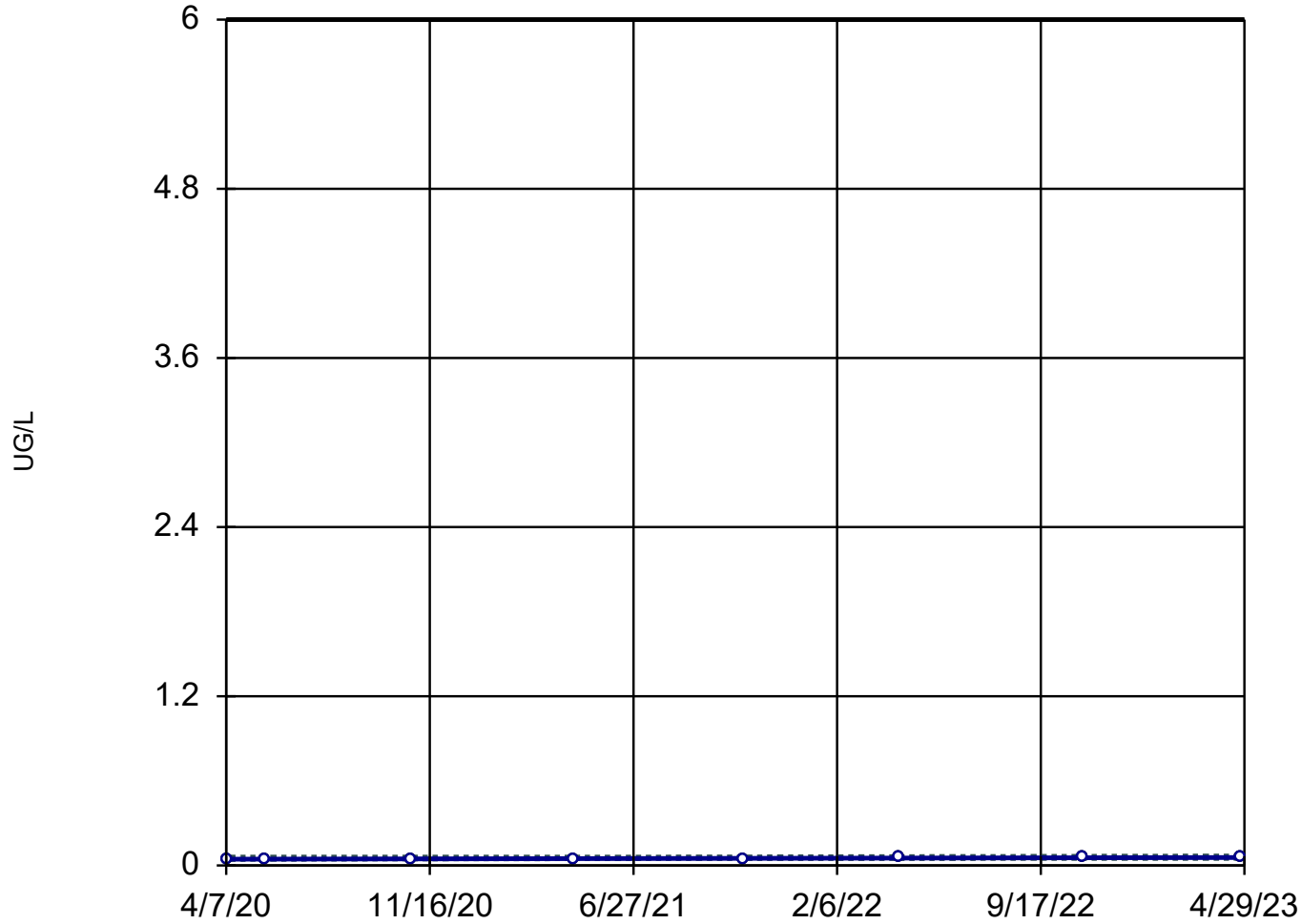
Constituent: ANTIMONY, TOTAL Analysis Run 7/21/2023 12:54 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



### Sen's Slope and 95% Confidence Band

R-P-21D



n = 8

Slope = 0.003849  
units per year.

Mann-Kendall  
statistic = 21  
critical = 20

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

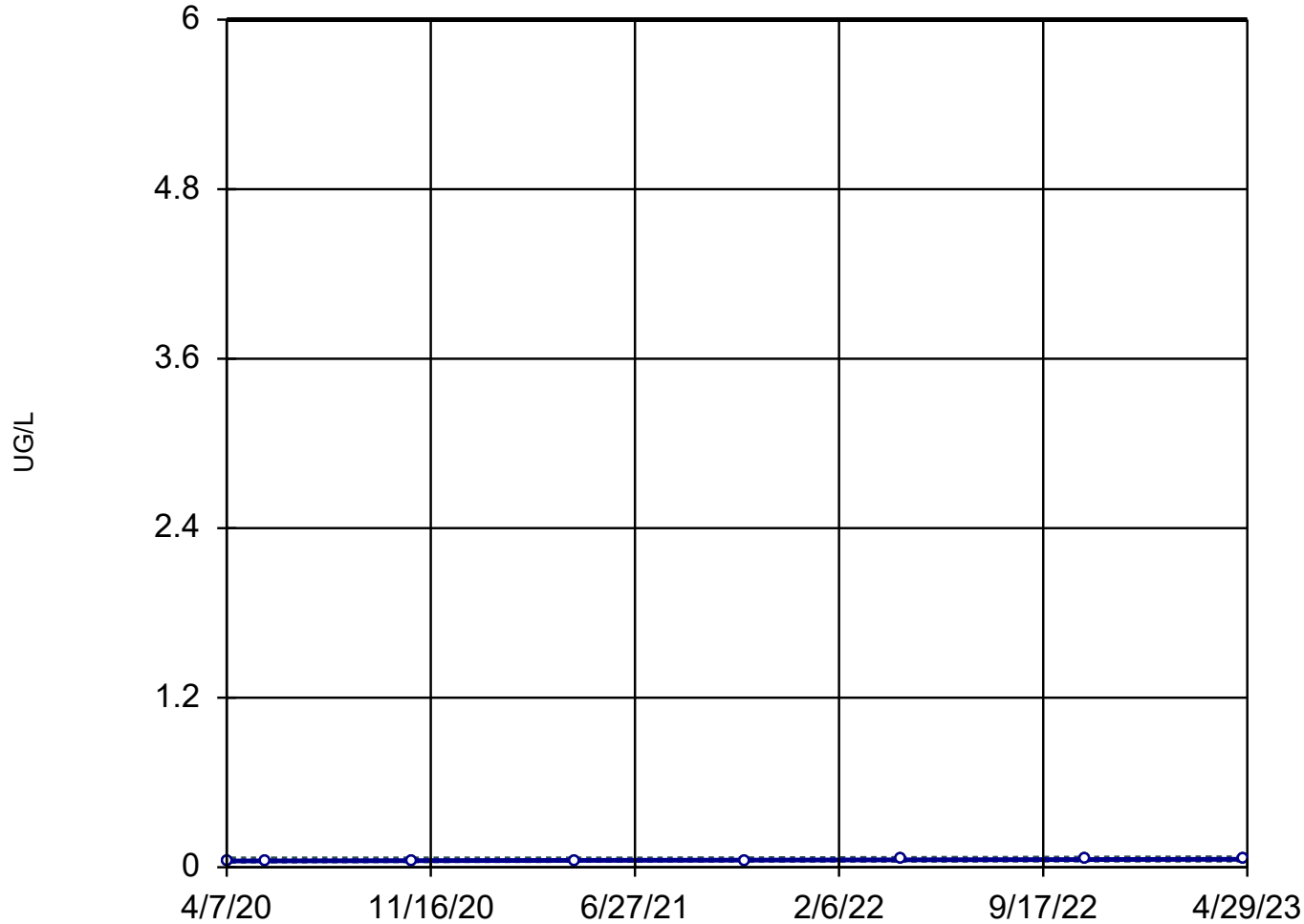
Confidence band is  
below GWPS (6).

Constituent: ANTIMONY, TOTAL Analysis Run 7/21/2023 12:55 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

R-P-21I



n = 8

Slope = 0.003849  
units per year.

Mann-Kendall  
statistic = 21  
critical = 20

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

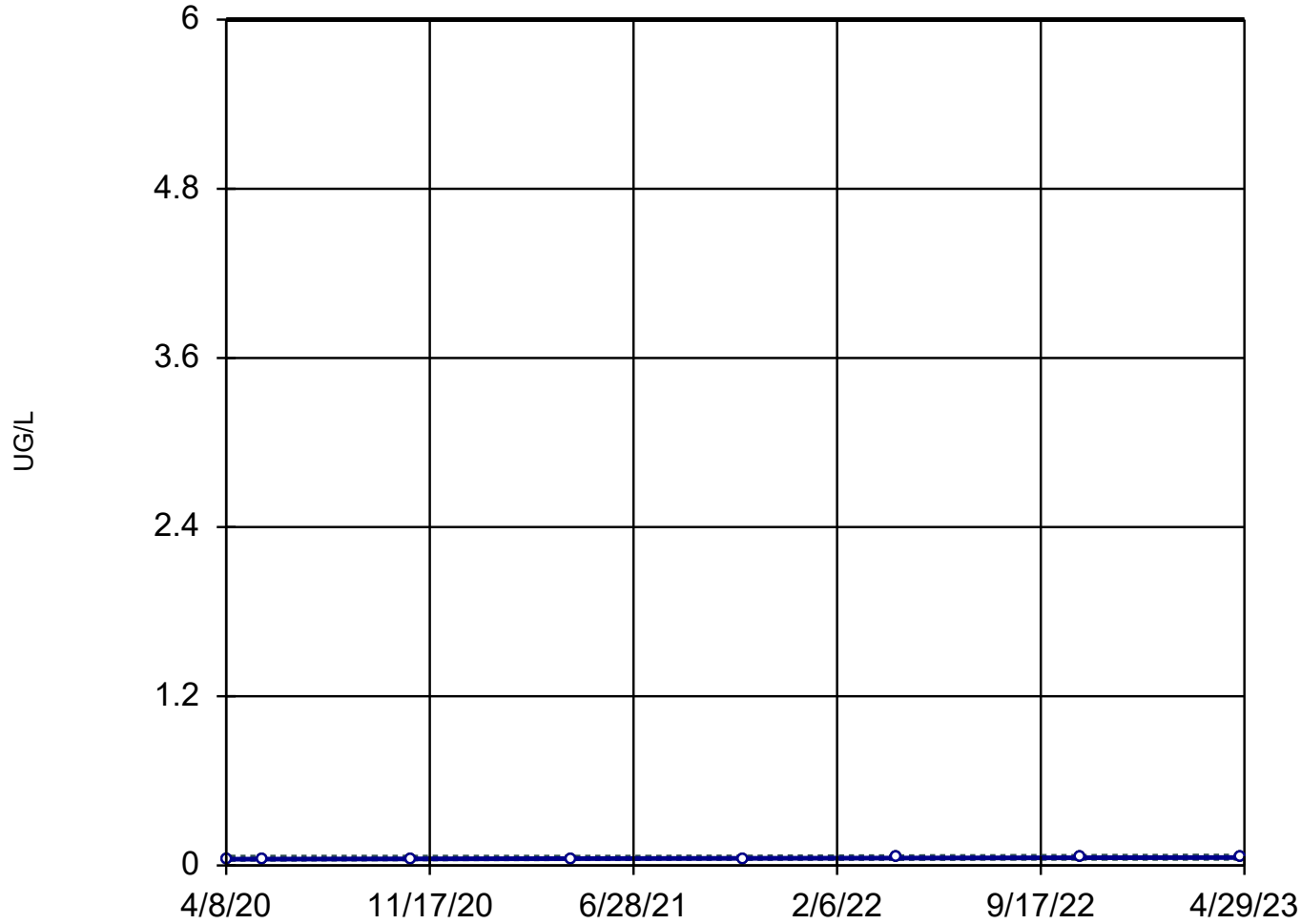
Confidence band is  
below GWPS (6).

Constituent: ANTIMONY, TOTAL Analysis Run 7/21/2023 12:55 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-P-22S



n = 8

Slope = 0.003851  
units per year.

Mann-Kendall  
statistic = 21  
critical = 20

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

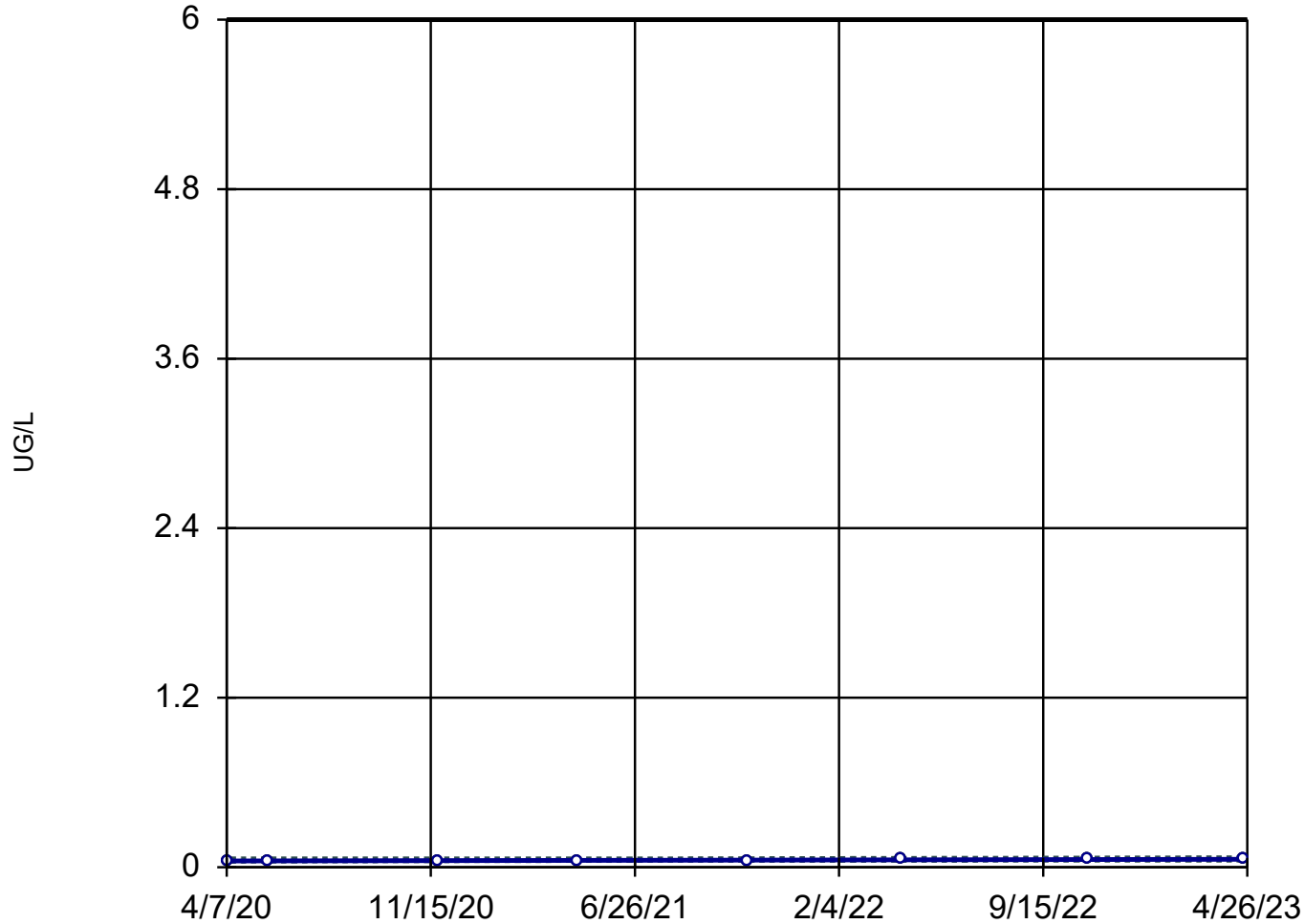
Confidence band is  
below GWPS (6).

Constituent: ANTIMONY, TOTAL Analysis Run 7/21/2023 12:55 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

R-P-31S



n = 8

Slope = 0.003865  
units per year.

Mann-Kendall  
statistic = 21  
critical = 20

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

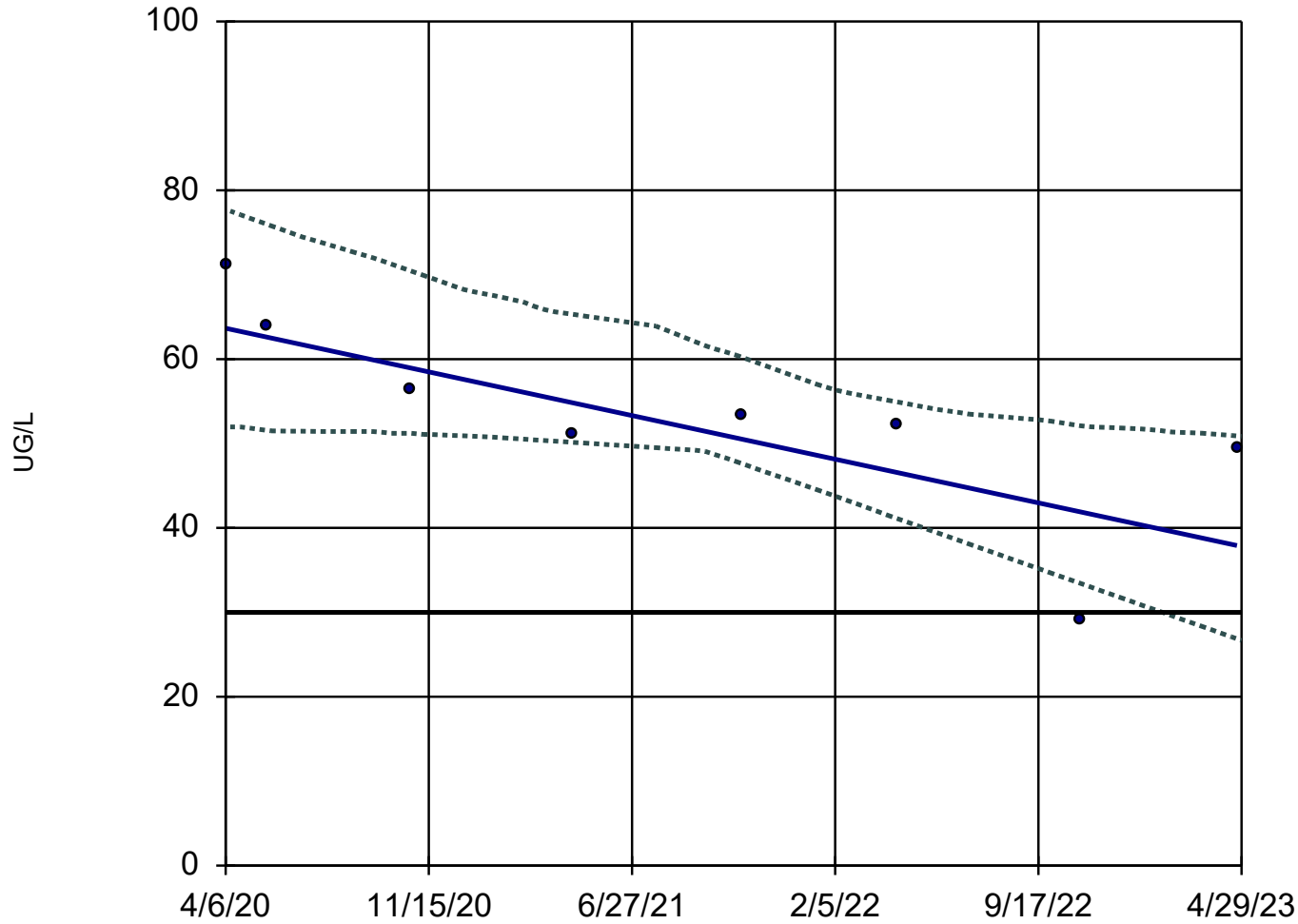
Confidence band is  
below GWPS (6).

Constituent: ANTIMONY, TOTAL Analysis Run 7/21/2023 12:55 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

# Sen's Slope and 95% Confidence Band

R-P-171



n = 8

Slope = -8.44  
units per year.

Mann-Kendall  
statistic = -22  
critical = -20

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

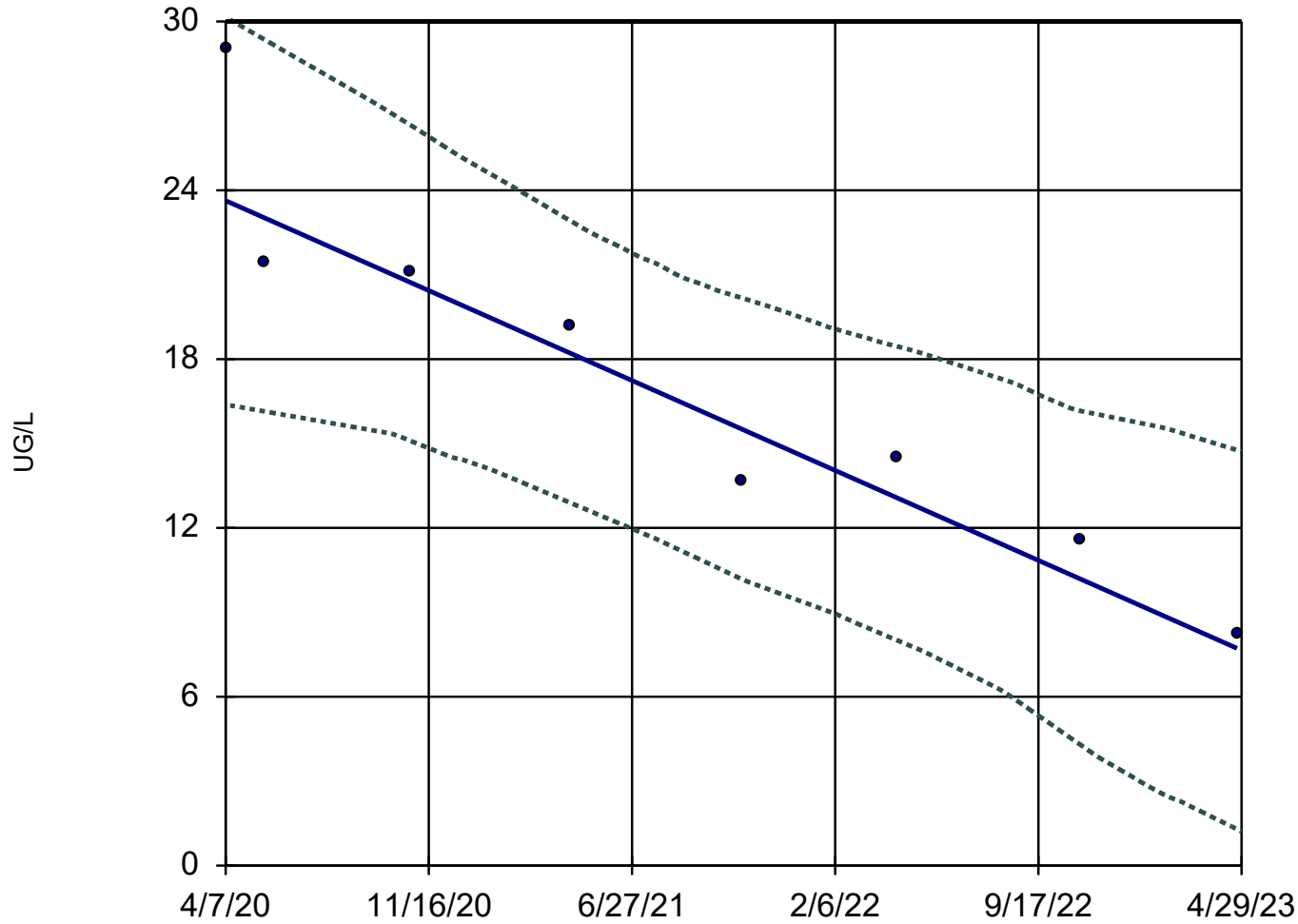
Confidence band intersects  
GWPS (30) on 02/10/23.

Constituent: ARSENIC, TOTAL Analysis Run 7/21/2023 10:56 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-P-19S



n = 8

Slope = -5.223  
units per year.

Mann-Kendall  
statistic = -26  
critical = -20

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

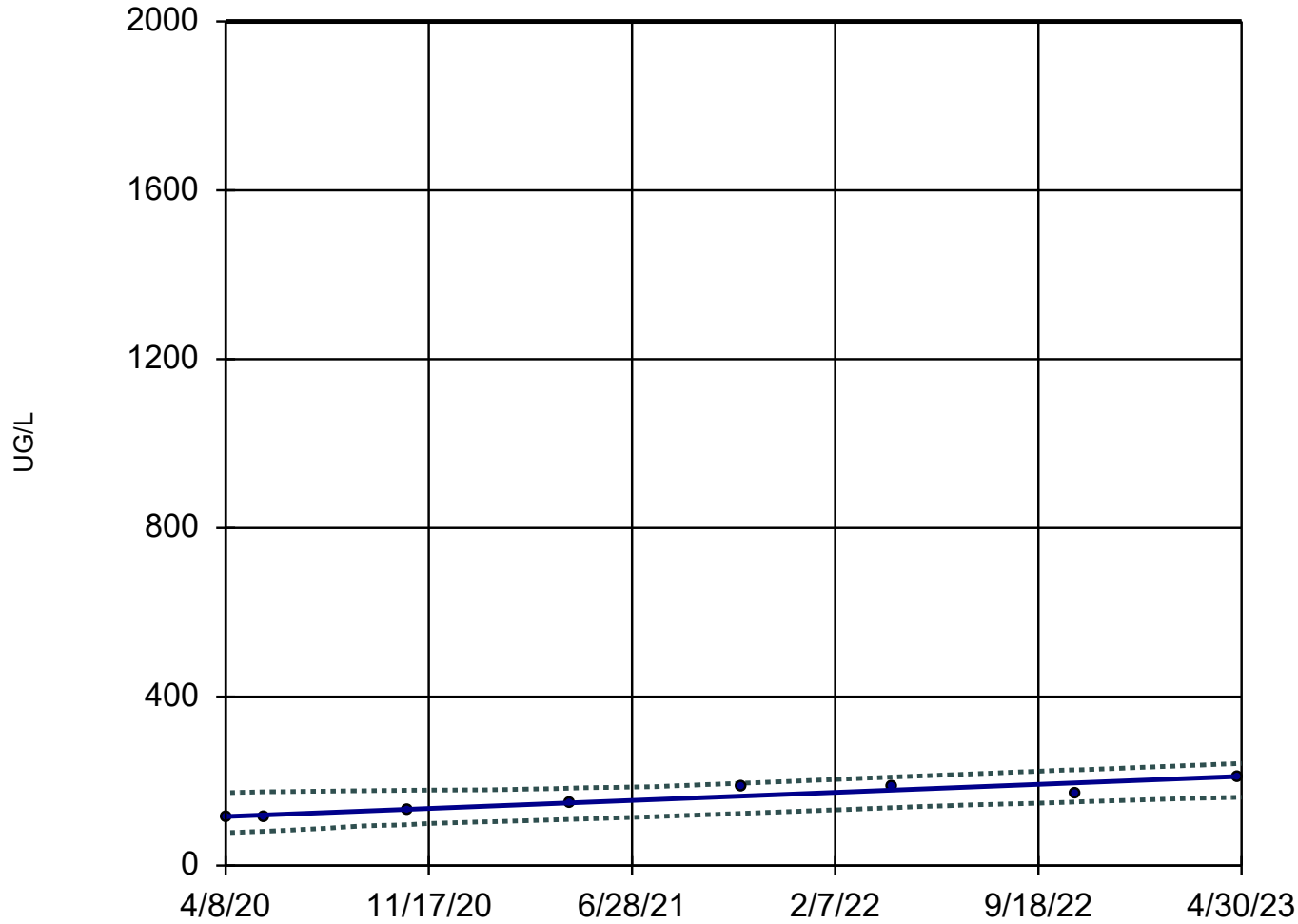
Confidence band intersects  
GWPS (30) on 04/23/20.

Constituent: ARSENIC, TOTAL Analysis Run 7/21/2023 12:55 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-P-10S



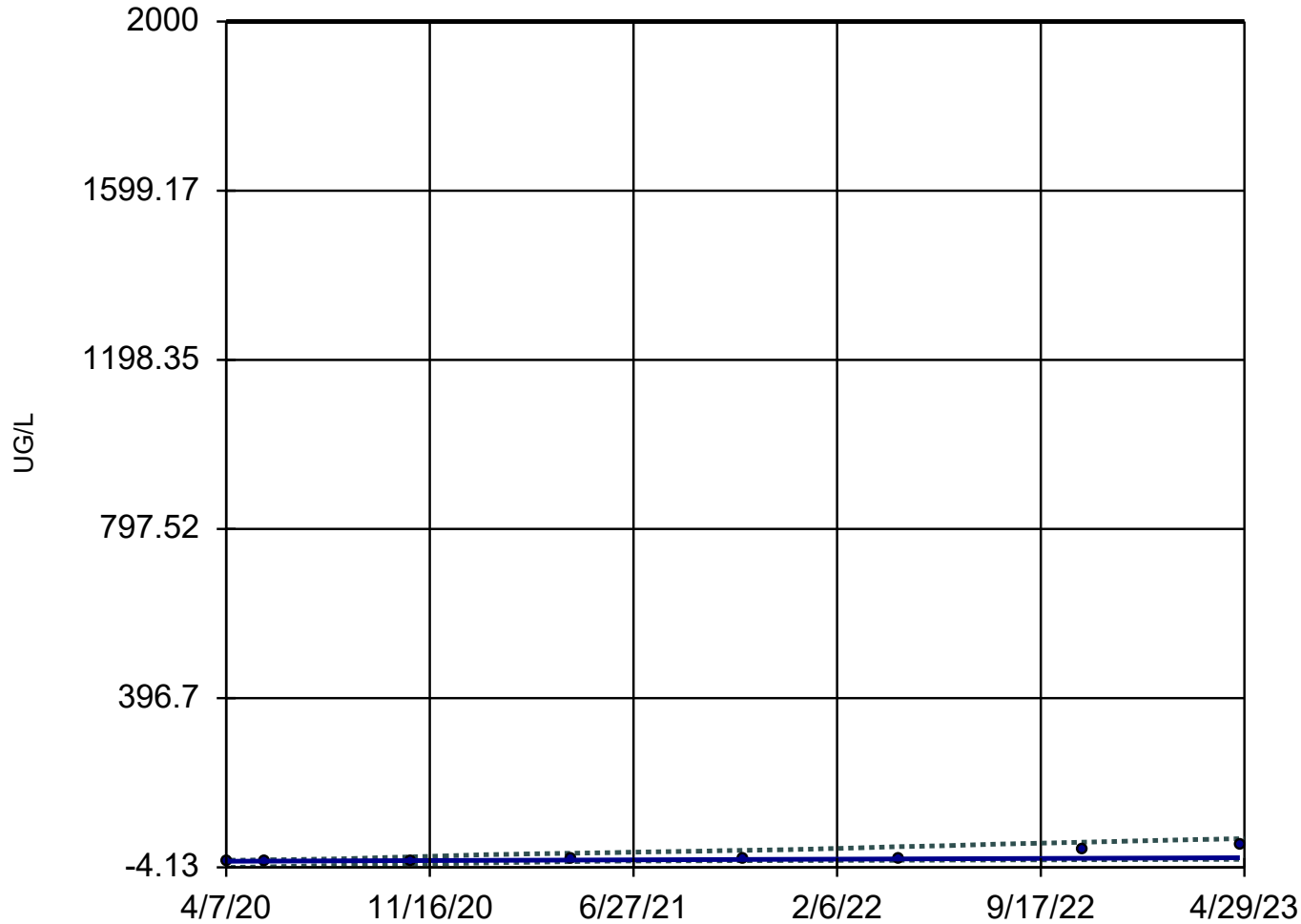
n = 8  
Slope = 31.22 units per year.  
Mann-Kendall statistic = 22  
critical = 20  
Increasing trend significant at 98% confidence level ( $\alpha = 0.01$  per tail).  
Confidence band is below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 7/21/2023 12:55 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-P-19I



n = 8

Slope = 2.844  
units per year.

Mann-Kendall  
statistic = 28  
critical = 20

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (2000).

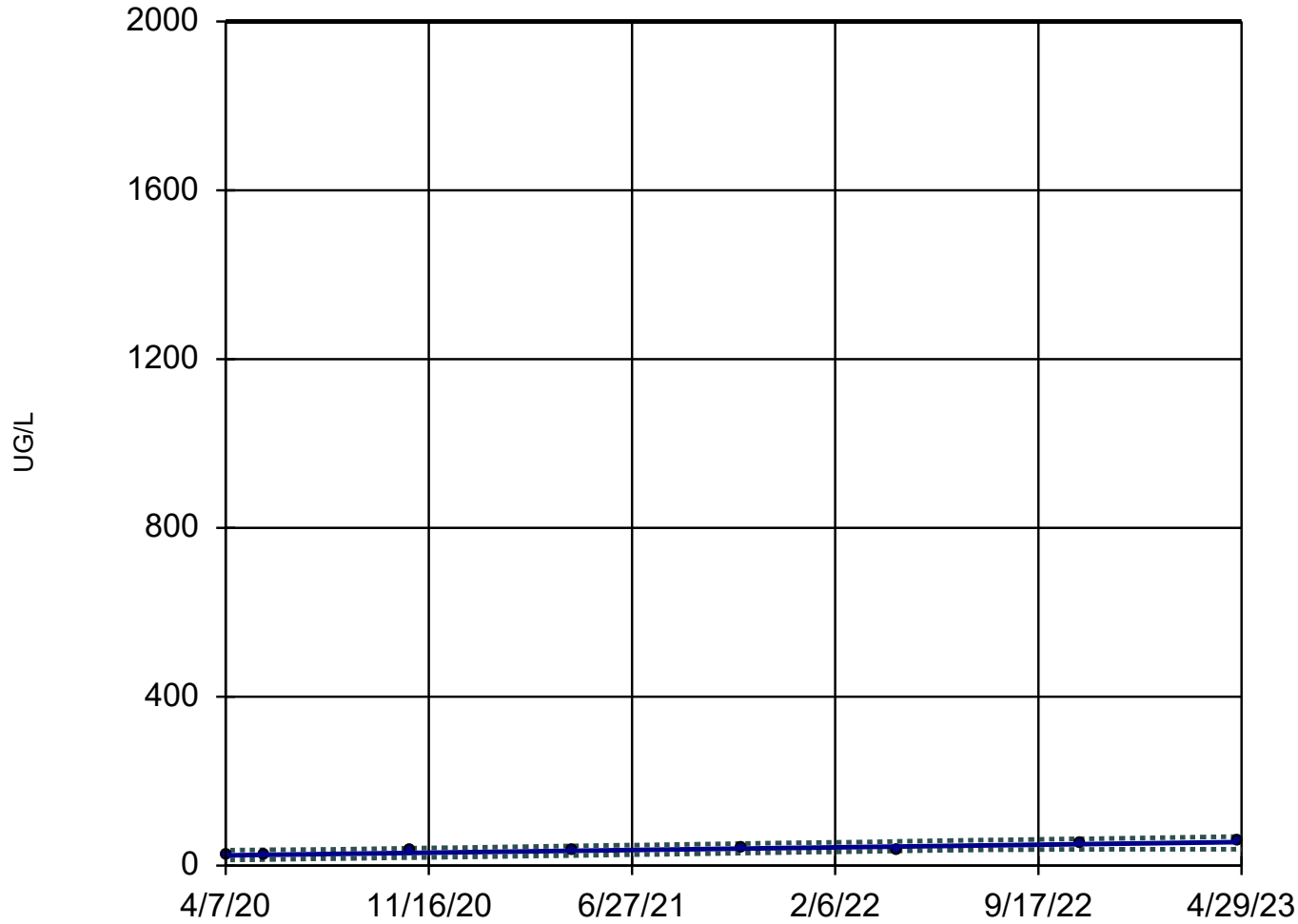
Constituent: BARIUM, TOTAL Analysis Run 7/21/2023 12:55 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data



### Sen's Slope and 95% Confidence Band

R-P-21I



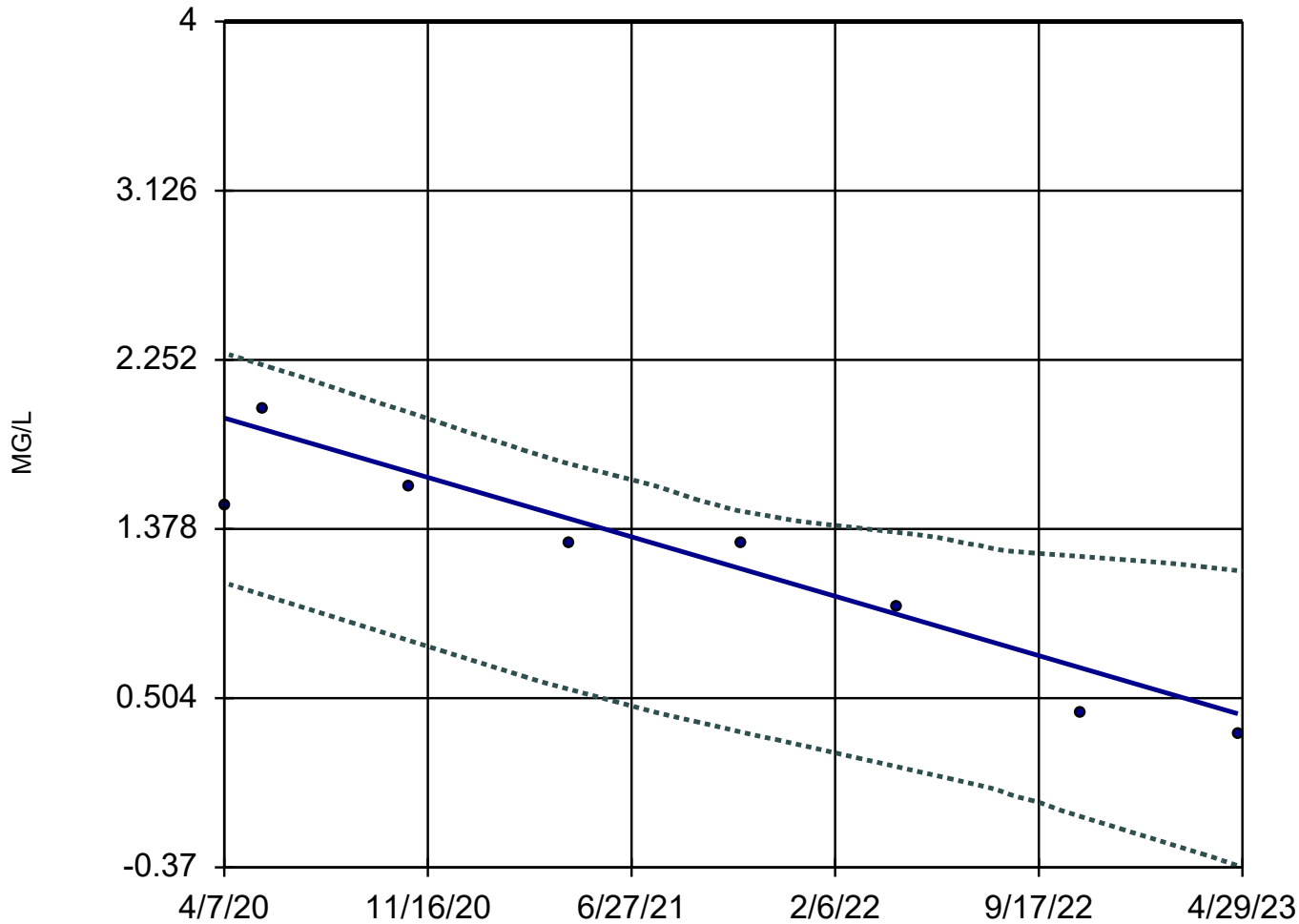
n = 8  
Slope = 10.35 units per year.  
Mann-Kendall statistic = 24 critical = 20  
Increasing trend significant at 98% confidence level ( $\alpha = 0.01$  per tail).  
Confidence band is below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 7/21/2023 12:55 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-P-19I



n = 8

Slope = -0.5013  
units per year.

Mann-Kendall  
statistic = -23  
critical = -20

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

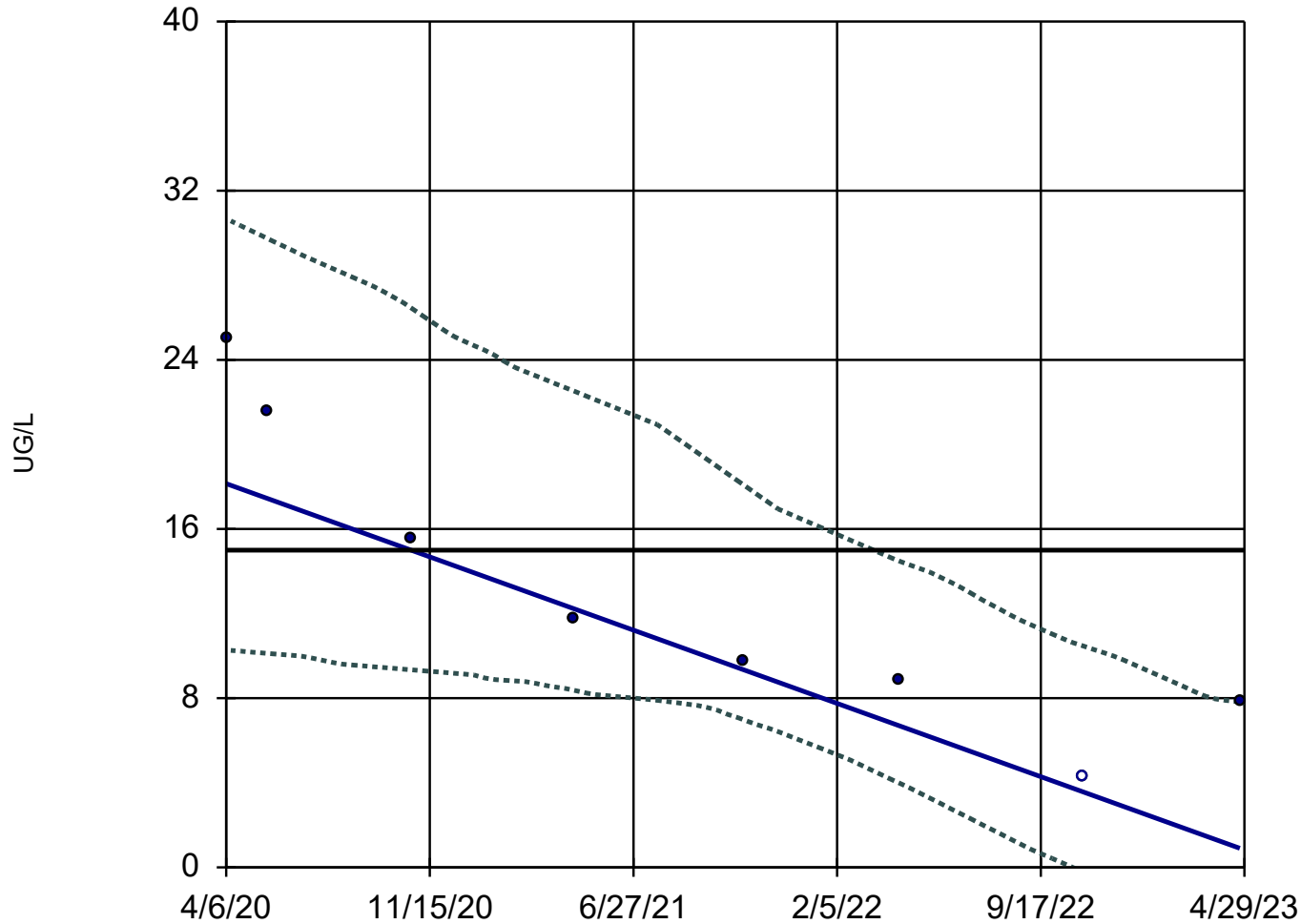
Confidence band is  
below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 7/21/2023 12:55 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

R-P-171



n = 8

Slope = -5.654  
units per year.

Mann-Kendall  
statistic = -26  
critical = -20

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

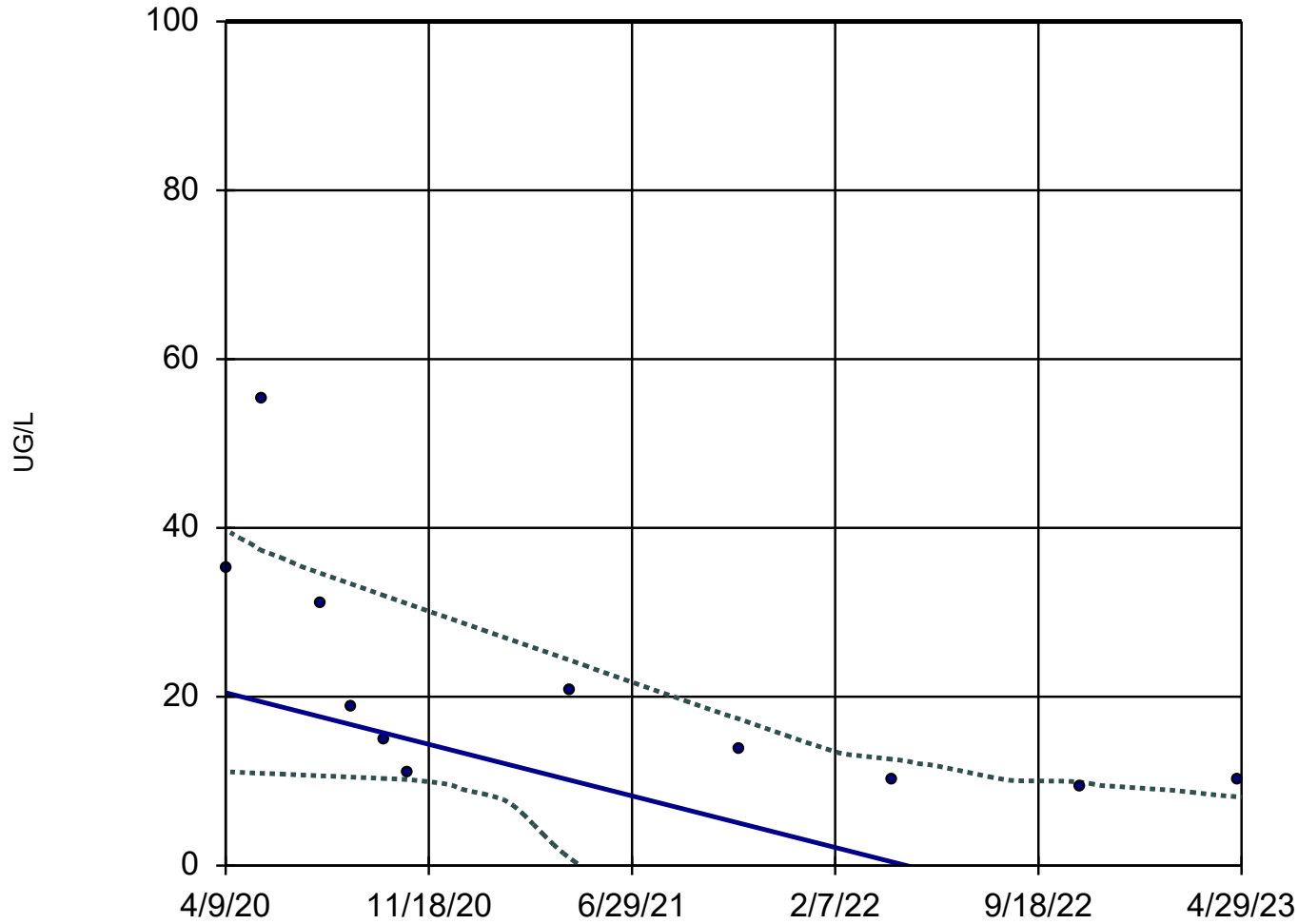
Confidence band intersects  
GWPS (15) on 03/24/22.

Constituent: LEAD, TOTAL Analysis Run 7/21/2023 11:01 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

### Sen's Slope and 95% Confidence Band

R-P-16S



n = 11

Slope = -10  
units per year.

Mann-Kendall  
statistic = -43  
critical = -31

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

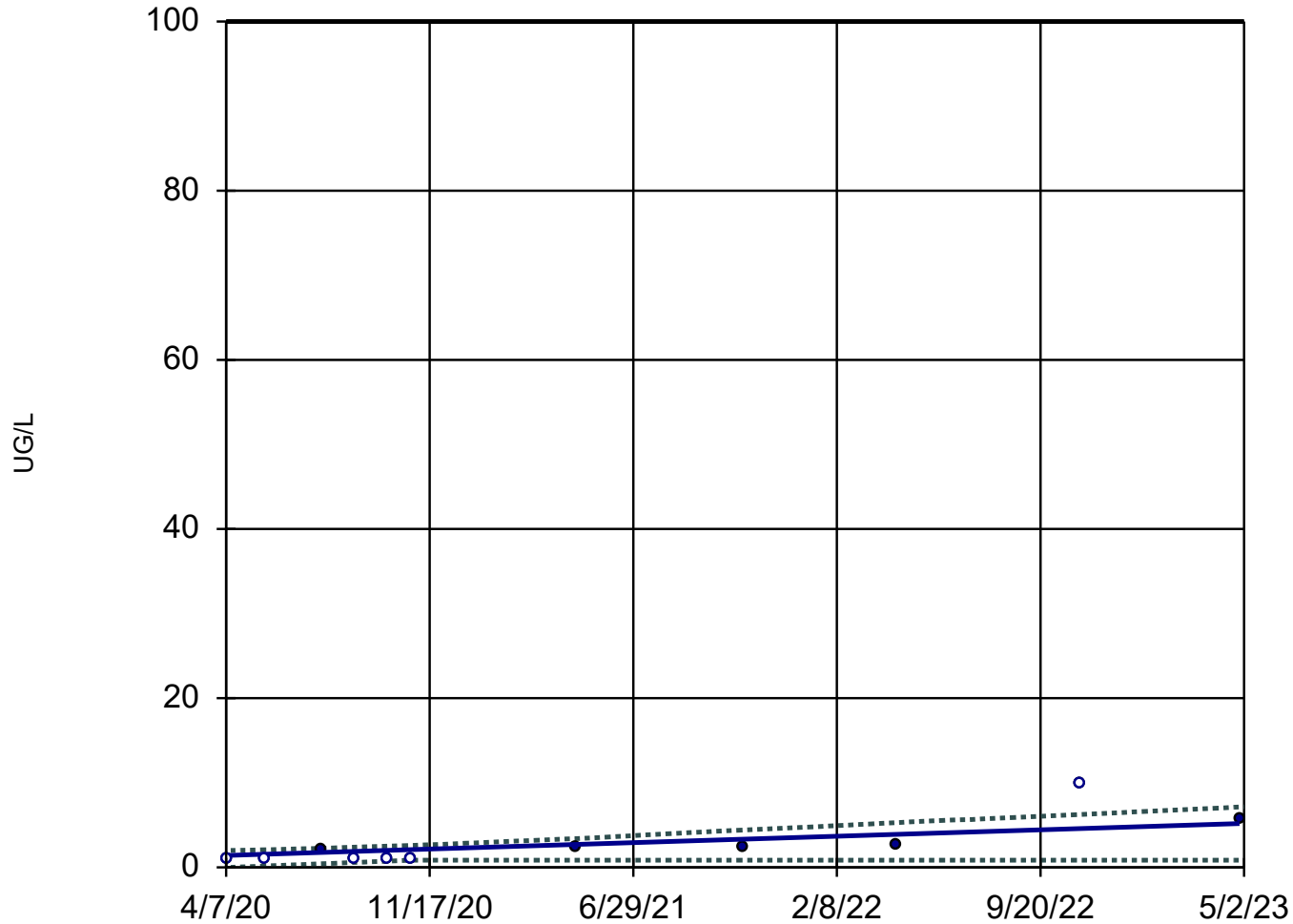
Confidence band is  
below GWPS (100).

Constituent: MOLYBDENUM, TOTAL Analysis Run 7/21/2023 12:56 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

## Sen's Slope and 95% Confidence Band

R-P-30S



n = 11

Slope = 1.234  
units per year.

Mann-Kendall  
statistic = 36  
critical = 31

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Confidence band is  
below GWPS (100).

Constituent: MOLYBDENUM, TOTAL Analysis Run 7/21/2023 12:56 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

# Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/21/2023, 12:57 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-P-05S</b>	<b>0.003868</b>	<b>21</b>	<b>20</b>	<b>Yes</b>	<b>8</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ANTIMONY, TOTAL (UG/L)	R-P-10S	0.001205	4	20	No	8	62.5	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-P-16S	0.004201	16	20	No	8	87.5	n/a	n/a	0.02	NP
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-P-17D</b>	<b>0.003849</b>	<b>21</b>	<b>20</b>	<b>Yes</b>	<b>8</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-P-17I</b>	<b>-0.1346</b>	<b>-22</b>	<b>-20</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ANTIMONY, TOTAL (UG/L)	R-P-17S	0.04403	14	20	No	8	50	n/a	n/a	0.02	NP
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-P-19D</b>	<b>0.003851</b>	<b>21</b>	<b>20</b>	<b>Yes</b>	<b>8</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ANTIMONY, TOTAL (UG/L)	R-P-19I	-1.571	-16	-20	No	8	0	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-P-19S	0.0027	13	20	No	8	87.5	n/a	n/a	0.02	NP
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-P-21D</b>	<b>0.003849</b>	<b>21</b>	<b>20</b>	<b>Yes</b>	<b>8</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-P-21I</b>	<b>0.003849</b>	<b>21</b>	<b>20</b>	<b>Yes</b>	<b>8</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ANTIMONY, TOTAL (UG/L)	R-P-21S	0.004197	16	20	No	8	87.5	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-P-22D	0.04076	17	20	No	8	25	n/a	n/a	0.02	NP
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-P-22S</b>	<b>0.003851</b>	<b>21</b>	<b>20</b>	<b>Yes</b>	<b>8</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ANTIMONY, TOTAL (UG/L)	R-P-30S	0.003919	15	17	No	7	100	n/a	n/a	0.02	NP
<b>ANTIMONY, TOTAL (UG/L)</b>	<b>R-P-31S</b>	<b>0.003865</b>	<b>21</b>	<b>20</b>	<b>Yes</b>	<b>8</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ARSENIC, TOTAL (UG/L)	R-P-05S	13.47	14	20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-P-10S	0.6952	5	31	No	11	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-P-16S	-0.3996	-30	-31	No	11	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-P-17D	0	-7	-20	No	8	0	n/a	n/a	0.02	NP
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-P-17I</b>	<b>-8.44</b>	<b>-22</b>	<b>-20</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ARSENIC, TOTAL (UG/L)	R-P-17S	-1.064	-2	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-P-19D	0.007228	4	20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-P-19I	-81.17	-19	-20	No	8	0	n/a	n/a	0.02	NP
<b>ARSENIC, TOTAL (UG/L)</b>	<b>R-P-19S</b>	<b>-5.223</b>	<b>-26</b>	<b>-20</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ARSENIC, TOTAL (UG/L)	R-P-21D	-0.02534	-12	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-P-21I	0	-7	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-P-21S	-11.43	-2	-20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-P-22D	0.4845	9	20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-P-22S	0.9198	11	20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-P-30S	-0.08753	-10	-31	No	11	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-P-31S	3.413	25	27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-P-05S	13.35	12	20	No	8	0	n/a	n/a	0.02	NP
<b>BARIUM, TOTAL (UG/L)</b>	<b>R-P-10S</b>	<b>31.22</b>	<b>22</b>	<b>20</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
BARIUM, TOTAL (UG/L)	R-P-16S	-3.568	-2	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-P-17D	-1.991	-13	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-P-17I	2.444	14	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-P-17S	11.1	6	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-P-19D	1.964	2	20	No	8	0	n/a	n/a	0.02	NP
<b>BARIUM, TOTAL (UG/L)</b>	<b>R-P-19I</b>	<b>2.844</b>	<b>28</b>	<b>20</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
BARIUM, TOTAL (UG/L)	R-P-19S	-124.8	-18	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-P-21D	-63.12	-8	-20	No	8	0	n/a	n/a	0.02	NP
<b>BARIUM, TOTAL (UG/L)</b>	<b>R-P-21I</b>	<b>10.35</b>	<b>24</b>	<b>20</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
BARIUM, TOTAL (UG/L)	R-P-21S	-116.3	-18	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-P-22D	-1.31	-6	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-P-22S	-24.14	-14	-20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-P-30S	5.764	12	20	No	8	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-P-31S	4.937	7	17	No	7	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-05S	-0.01266	-3	-20	No	8	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-10S	-0.08096	-17	-20	No	8	25	n/a	n/a	0.02	NP

## Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/21/2023, 12:57 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-P-16S	-0.04236	-7	-20	No	8	25	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-17D	-0.03488	-8	-20	No	8	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-17I	-0.2087	-20	-20	No	8	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-17S	-0.1736	-10	-20	No	8	12.5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-19D	-0.1352	-10	-20	No	8	0	n/a	n/a	0.02	NP
<b>FLUORIDE, TOTAL (MG/L)</b>	<b>R-P-19I</b>	<b>-0.5013</b>	<b>-23</b>	<b>-20</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
FLUORIDE, TOTAL (MG/L)	R-P-19S	-0.03715	-10	-20	No	8	12.5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-21D	0.02626	3	20	No	8	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-21I	-0.05452	-8	-20	No	8	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-21S	-0.08028	-17	-20	No	8	25	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-22D	0.02032	4	20	No	8	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-22S	-0.1089	-10	-20	No	8	50	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-30S	-0.08419	-9	-20	No	8	12.5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-P-31S	0	-1	-20	No	8	0	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-05S	-0.03719	-4	-20	No	8	87.5	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-10S	0	1	17	No	7	100	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-16S	0	0	20	No	8	100	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-17D	-0.03704	-4	-20	No	8	87.5	n/a	n/a	0.02	NP
<b>LEAD, TOTAL (UG/L)</b>	<b>R-P-17I</b>	<b>-5.654</b>	<b>-26</b>	<b>-20</b>	<b>Yes</b>	<b>8</b>	<b>12.5</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
LEAD, TOTAL (UG/L)	R-P-17S	-0.07649	-6	-20	No	8	87.5	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-19D	-0.03709	-6	-20	No	8	100	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-19I	-3.728	-14	-20	No	8	25	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-19S	-0.07648	-6	-20	No	8	87.5	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-21D	0	0	20	No	8	100	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-21I	-0.03714	-6	-20	No	8	100	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-21S	-0.146	-8	-20	No	8	75	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-22D	0	-2	-20	No	8	87.5	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-22S	0	0	20	No	8	87.5	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-30S	0	-5	-17	No	7	100	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-P-31S	0	-5	-17	No	7	100	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-05S	-1.616	-14	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-10S	2.771	6	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-16S	-7.601	-20	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-17D	-2.204	-20	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-17I	-0.5029	-10	-20	No	8	75	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-17S	0.7301	2	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-19D	0.1982	2	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-19I	24.74	21	23	No	9	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-19S	-9.568	-18	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-21D	-30.19	-6	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-21I	2.642	18	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-21S	-2.097	-20	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-22D	-0.8206	-8	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-22S	-4.579	-12	-20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-30S	0.7451	5	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-P-31S	-0.596	-4	-20	No	8	25	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-P-05S	-1.888	-12	-20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-P-10S	-12.14	-20	-31	No	11	0	n/a	n/a	0.02	NP
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-16S</b>	<b>-10</b>	<b>-43</b>	<b>-31</b>	<b>Yes</b>	<b>11</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
MOLYBDENUM, TOTAL (UG/L)	R-P-17D	-4.009	-4	-20	No	8	0	n/a	n/a	0.02	NP

## Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/21/2023, 12:57 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
MOLYBDENUM, TOTAL (UG/L)	R-P-17I	16.73	14	20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-P-17S	-5.947	-2	-20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-P-19D	-31.39	-8	-20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-P-19I	-29.67	-10	-20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-P-19S	-0.1634	-2	-20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-P-21D	65.41	16	20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-P-21I	48.77	14	20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-P-21S	-0.5731	-9	-20	No	8	37.5	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-P-22D	-11.03	-8	-20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-P-22S	0.8863	4	20	No	8	0	n/a	n/a	0.02	NP
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>R-P-30S</b>	<b>1.234</b>	<b>36</b>	<b>31</b>	<b>Yes</b>	<b>11</b>	<b>54.55</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
MOLYBDENUM, TOTAL (UG/L)	R-P-31S	0.7278	19	31	No	11	9.091	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-05S	0.04094	5	17	No	7	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-10S	0.04558	8	20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-16S	0.01376	2	20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-17D	-0.03114	-2	-20	No	8	87.5	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-17I	-0.08119	-2	-20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-17S	0.02124	6	20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-19D	-0.03817	-14	-20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-19I	-0.02149	-6	-20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-19S	-0.2287	-4	-20	No	8	62.5	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-21D	-0.7824	-14	-20	No	8	50	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-21I	-0.1126	-8	-20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-21S	-0.1387	-6	-20	No	8	87.5	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-22D	-0.07427	-4	-20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-22S	-0.03789	-2	-20	No	8	87.5	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-30S	-0.07023	-4	-20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PC/L)	R-P-31S	-0.01978	-1	-17	No	7	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-05S	0.004919	5	20	No	8	25	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-10S	0	0	20	No	8	62.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-16S	0.4797	8	20	No	8	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-17D	-0.02203	-14	-20	No	8	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-17I	-0.2634	-20	-20	No	8	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-17S	0.08954	10	20	No	8	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-19D	-0.0236	-14	-20	No	8	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-19I	-0.72	-10	-20	No	8	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-19S	0	0	20	No	8	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-21D	0	5	20	No	8	87.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-21I	-0.06037	-19	-20	No	8	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-21S	-0.06743	-15	-20	No	8	12.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-22D	0.08115	19	20	No	8	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-22S	0.06267	10	20	No	8	37.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-30S	0	-1	-20	No	8	37.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-P-31S	0	0	20	No	8	100	n/a	n/a	0.02	NP



# Appendix F

## 2023 Potentiometric Surface Maps



# JANUARY 5, 2023 POTENTIOMETRIC SURFACE MAP - SHALLOW ALLUVIAL AQUIFER ZONE



- LEGEND**
- Approximate Rush Island Energy Center Property Boundary
  - RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
- Mississippi River Gauge
  - Corrective Action Monitoring Well
  - Monitoring Well Used for Water Level Elevation Measurements Only
- Groundwater Elevation Contours**
- Groundwater Elevation Contour (FT MSL)
  - Inferred Groundwater Elevation Contour (FT MSL)
  - ↗ Groundwater Flow Direction

- NOTES**
1. All locations and boundaries are approximate.
  2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
  3. Groundwater elevation measurements collected by WSP.
  4. Mississippi River level provided by Ameren.
  5. P17S was not used in potentiometric surface map contouring; well screen interval is in lower permeability aquifer materials and its water level response is slower than other wells in the aquifer.
  6. P21S was not used in potentiometric surface map contouring.

- REFERENCES**
1. Ameren Missouri Rush Island Energy Center, Rush Island Property Control Map, January 2012.
  2. Coordinate system: NAD 1983 State Plane Missouri East FIPS 2401 feet.



PROJECT  
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER



DESIGN	GTM	YYYY-MM-DD	2023-08-30
PREPARED	GTM	PROJECT No.	23008
REVIEW	JSI	<b>FIGURE F1</b>	
APPROVED	MNH		

Path: C:\Users\Graham\OneDrive\Documents\Rocksmith Geodesigning\2023\2023-08-30\23008-CCR Rule Groundwater Monitoring Program\23008-CCR Rule Groundwater Monitoring Program.dwg

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



# JANUARY 5, 2023 POTENTIOMETRIC SURFACE MAP - INTERMEDIATE ALLUVIAL AQUIFER ZONE



- LEGEND**
- Approximate Rush Island Energy Center Property Boundary
  - RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
- Mississippi River Gauge
  - + CCR Rule Monitoring Well
  - Corrective Action Monitoring Well
  - + Monitoring Well Used for Water Level Elevation Measurements Only
- Groundwater Elevation Contour**
- Groundwater Elevation Contour (FT MSL)
  - ↗ Groundwater Flow Direction

- NOTES**
1. All locations and boundaries are approximate.
  2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
  3. Groundwater elevation measurements collected by WSP.
  4. Mississippi River level provided by Ameren.

- REFERENCES**
1. Ameren Missouri Rush Island Energy Center, Rush Island Property Control Map, January 2012.
  2. Coordinate system: NAD 1983 State Plane Missouri East FIPS 2401 feet.



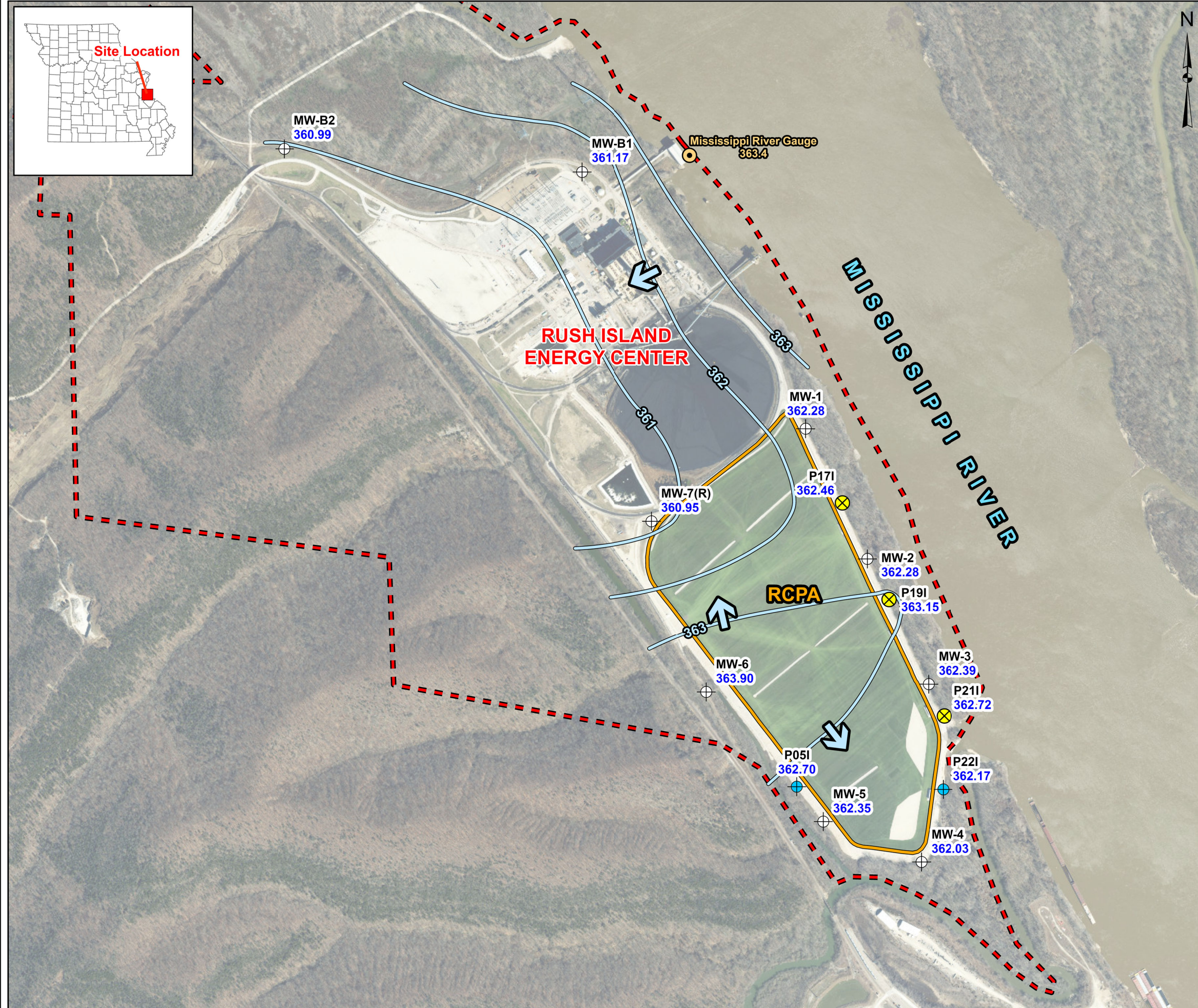
PROJECT  
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER

	DESIGN	GTM	YYYY-MM-DD	2023-08-31
	PREPARED	GTM	PROJECT No.	23008
	REVIEW	JSI	<b>FIGURE F2</b>	
	APPROVED	MNH		

Path: C:\Users\Graham\OneDrive\RockSmith Geodesign\Engineering\LLC\23007 - Ameren GTM - Documents\400 - Drawings - Figures\4.2-REC\4.2.2 - Production\PT MAFS\2023 Annual Report\230105\_REC\_Int\_Potential.mxd

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:





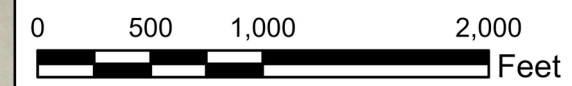
# JANUARY 5, 2023 POTENTIOMETRIC SURFACE MAP - DEEP ALLUVIAL AQUIFER ZONE



- LEGEND**
- Approximate Rush Island Energy Center Property
  - Boundary
  - RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
- Mississippi River Gauge
  - + CCR Rule Monitoring Wells
  - X Corrective Action Monitoring Wells
- Groundwater Elevation Contour**
- Groundwater Elevation Contour (FT MSL)
  - ↗ Groundwater Flow Direction

- NOTES**
1. All locations and boundaries are approximate.
  2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
  3. Groundwater elevation measurements collected by WSP.
  4. Mississippi River level provided by Ameren.

- REFERENCES**
1. Ameren Missouri Rush Island Energy Center, Rush Island Property Control Map, January 2012.
  2. Coordinate system: NAD 1983 State Plane Missouri East FIPS 2401 feet.



PROJECT  
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER



DESIGN	GTM	YYYY-MM-DD	2023-08-31
PREPARED	GTM	PROJECT No.	23008
REVIEW	JSI	<b>FIGURE F3</b>	
APPROVED	MNH		

Path: C:\Users\Graham\Rocksmith Geodesigning LLC\23007 - Ameren GTM - Documents\400 - Drawings - Figures\4.2-RECA\4.2 - Production\PT MAFS\2023 Annual Report\230105\_RECA\_Deep\_PotMap.aprx

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



# APRIL 21, 2023 POTENTIOMETRIC SURFACE MAP - SHALLOW ALLUVIAL AQUIFER ZONE



- LEGEND**
- Approximate Rush Island Energy Center Property
  - Boundary
  - RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
- Mississippi River Gauge
  - Corrective Action Monitoring Well
  - Monitoring Well Used for Water Level Elevation Measurements Only
- Groundwater Elevation Contour**
- Groundwater Elevation Contour (FT MSL)
  - ↗ Groundwater Flow Direction

- NOTES**
1. All locations and boundaries are approximate.
  2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
  3. Groundwater elevation measurements collected by Rocksmith.
  4. Mississippi River level provided by Ameren.
  5. P17S was not used in potentiometric surface map contouring; well screen interval is in lower permeability aquifer materials and its water level response is slower than other wells in the aquifer.

- REFERENCES**
1. Ameren Missouri Rush Island Energy Center, Rush Island Property Control Map, January 2012.
  2. Coordinate system: NAD 1983 State Plane Missouri East FIPS 2401 feet.



PROJECT  
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER



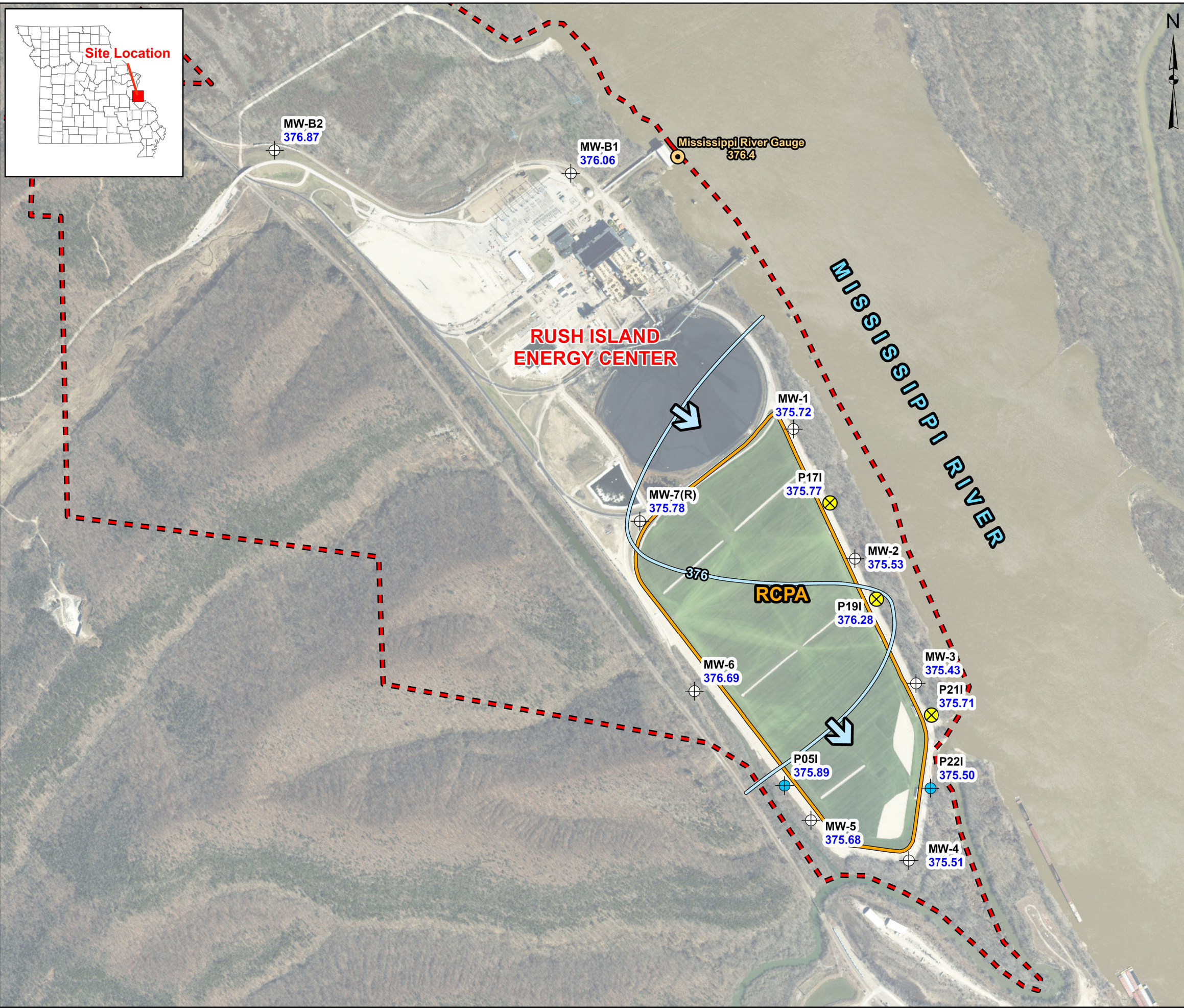
DESIGN	GTM	YYYY-MM-DD	2023-08-31
PREPARED	GTM	PROJECT No.	23008
REVIEW	JSI	<b>FIGURE F4</b>	
APPROVED	MNH		

Path: C:\Users\Graham\Rocksmith Geodesigning LLC\202307 - Ameren GTM - Documents\400 - Drawings - Figures\4.2-REC\4.2.2 - Production\PT MAFS\2023 Annual Report\230421\_REC\_SH\_PathMap.aprx

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



# APRIL 21, 2023 POTENTIOMETRIC SURFACE MAP - INTERMEDIATE ALLUVIAL AQUIFER ZONE



**LEGEND**

- Approximate Rush Island Energy Center Property
- Boundary
- RCPA Surface Impoundment

**Ground/Surface Water Measurement Locations**

- Mississippi River Gauge
- CCR Rule Monitoring Well
- Corrective Action Monitoring Well
- Monitoring Well Used for Water Level Elevation Measurements Only

**Groundwater Elevation Contour**

- Groundwater Elevation Contour (FT MSL)
- Groundwater Flow Direction

- NOTES**
- All locations and boundaries are approximate.
  - Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
  - Groundwater elevation measurements collected by Rocksmith.
  - Mississippi River level provided by Ameren.

- REFERENCES**
- Ameren Missouri Rush Island Energy Center, Rush Island Property Control Map, January 2012.
  - Coordinate system: NAD 1983 State Plane Missouri East FIPS 2401 feet.



PROJECT  
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER



	DESIGN	GTM	YYYY-MM-DD	2023-08-31
	PREPARED	GTM	PROJECT No.	23008
	REVIEW	JSI	<b>FIGURE F5</b>	
	APPROVED	MNH		

Path: C:\Users\Graham\Rocksmith Geodesigning LLC\2023\07 - Ameren GTM - Documents\400 - Drawings - Figures\4.2-RECA\4.2.2 - Production\PT MAFS\2023 Annual Report\2023\4.2-RECA\_4.2-PT MAFS.aprx

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



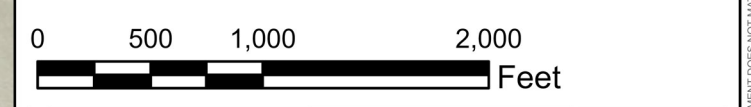
# APRIL 21, 2023 POTENTIOMETRIC SURFACE MAP - DEEP ALLUVIAL AQUIFER ZONE



- LEGEND**
- Approximate Rush Island Energy Center Property
  - Boundary
  - RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
- Mississippi River Gauge
  - + CCR Rule Monitoring Wells
  - X Corrective Action Monitoring Wells
- Groundwater Elevation Contour**
- Groundwater Elevation Contour (FT MSL)
  - ➔ Groundwater Flow Direction

- NOTES**
1. All locations and boundaries are approximate.
  2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
  3. Groundwater elevation measurements collected by Rocksmith.
  4. Mississippi River level provided by Ameren.

- REFERENCES**
1. Ameren Missouri Rush Island Energy Center, Rush Island Property Control Map, January 2012.
  2. Coordinate system: NAD 1983 State Plane Missouri East FIPS 2401 feet.



PROJECT  
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER



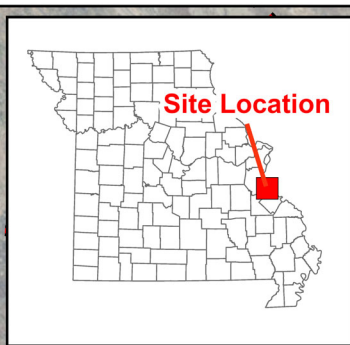
	DESIGN	GTM	YYYY-MM-DD	2023-08-31
	PREPARED	GTM	PROJECT No.	23008
	REVIEW	JSI		
	APPROVED	MNH		
<b>FIGURE F6</b>				

Path: C:\Users\Graham\Rocksmith Geodesigning LLC\20207 - Ameren GTM - Documents\400 - Drawings - Figures\4.2-REC\4.2.2 - Production\POT MAPS\2023 Annual Report\2023\4.2\_REC\_Deep\_PotMap.aprx

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



# JULY 11, 2023 POTENTIOMETRIC SURFACE MAP - SHALLOW ALLUVIAL AQUIFER ZONE



- LEGEND**
- Approximate Rush Island Energy Center Property
  - Boundary
  - RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
- Mississippi River Gauge
  - Corrective Action Monitoring Well
  - Monitoring Well Used for Water Level Elevation Measurements Only
- Groundwater Elevation Contour**
- Groundwater Elevation Contour (FT MSL)
  - ↗ Groundwater Flow Direction

- NOTES**
1. All locations and boundaries are approximate.
  2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
  3. Groundwater elevation measurements collected by Rocksmith.
  4. Mississippi River level provided by Ameren.
  5. P17S was not used in potentiometric surface map contouring; well screen interval is in lower permeability aquifer materials and its water level response is slower than other wells in the aquifer.

- REFERENCES**
1. Ameren Missouri Rush Island Energy Center, Rush Island Property Control Map, January 2012.
  2. Coordinate system: NAD 1983 State Plane Missouri East FIPS 2401 feet.



PROJECT  
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER



	DESIGN	GTM	YYYY-MM-DD	2023-08-31
	PREPARED	GTM	PROJECT No.	23008
	REVIEW	JSI	<b>FIGURE F7</b>	
	APPROVED	MNH		

Path: C:\Users\Graham\Rocksmith\Geoenvironmenting\LLC\23007 - Ameren GTM - Documents\400 - Drawings - Figures\4.2-RECC\4.2 - Production\PT MAFS\2023 Annual Report\230711\_RECC\_SH\_PathMap.aprx

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



# JULY 11, 2023 POTENTIOMETRIC SURFACE MAP - INTERMEDIATE ALLUVIAL AQUIFER ZONE



- LEGEND**
- Approximate Rush Island Energy Center Property Boundary
  - RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
- Mississippi River Gauge
  - CCR Rule Monitoring Well
  - Corrective Action Monitoring Well
  - Monitoring Well Used for Water Level Elevation Measurements Only
- Groundwater Elevation Contour**
- Groundwater Elevation Contour (FT MSL)
  - ↗ Groundwater Flow Direction

- NOTES**
1. All locations and boundaries are approximate.
  2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
  3. Groundwater elevation measurements collected by Rocksmith.
  4. Mississippi River level provided by Ameren.

- REFERENCES**
1. Ameren Missouri Rush Island Energy Center, Rush Island Property Control Map, January 2012.
  2. Coordinate system: NAD 1983 State Plane Missouri East FIPS 2401 feet.



PROJECT  
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER



	DESIGN	GTM	YYYY-MM-DD	2023-08-31
	PREPARED	GTM	PROJECT No.	23008
	REVIEW	JSI	<b>FIGURE F8</b>	
	APPROVED	MNH		

Path: C:\Users\Graham\Rocksmith Geodesigning LLC\23007 - Ameren GTM - Documents\400 - Drawings - Figures\4.2-REC\4.2.2 - Production\PT MAPS\2023 Annual Report\230711\_REC\_1m\_Potential.mxd

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



**JULY 11, 2023 POTENTIOMETRIC SURFACE  
MAP - DEEP ALLUVIAL AQUIFER ZONE**



- LEGEND**
- Approximate Rush Island Energy Center Property
  - Boundary
  - RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
- Mississippi River Gauge
  - CCR Rule Monitoring Wells
  - Corrective Action Monitoring Wells
- Groundwater Elevation Contour**
- Groundwater Elevation Contour (FT MSL)
  - ➔ Groundwater Flow Direction

- NOTES**
1. All locations and boundaries are approximate.
  2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
  3. Groundwater elevation measurements collected by Rocksmith.
  4. Mississippi River level provided by Ameren.

- REFERENCES**
1. Ameren Missouri Rush Island Energy Center, Rush Island Property Control Map, January 2012.
  2. Coordinate system: NAD 1983 State Plane Missouri East FIPS 2401 feet.



PROJECT  
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER



DESIGN	GTM	YYYY-MM-DD	2023-08-31
PREPARED	GTM	PROJECT No.	23008
REVIEW	JSI	<b>FIGURE F9</b>	
APPROVED	MNH		

Path: C:\Users\Graham\Rocksmith Geodesigning LLC\20207 - Ameren GTM - Documents\400 - Drawings - Figures\4.2-REC\4.2.2 - Production\PT MAFS\2023 Annual Report\2023\11\_FIEC\_Deep\_PotMap.aprx

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:





**NOVEMBER 6, 2023 POTENTIOMETRIC SURFACE MAP - SHALLOW ALLUVIAL AQUIFER ZONE**

- LEGEND**
- Approximate Rush Island Energy Center Property
  - Boundary
  - RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
- Mississippi River Gauge
  - ⊗ Corrective Action Monitoring Well
  - ⊕ Monitoring Well Used for Water Level Elevation Measurements Only
- Groundwater Elevation Contours**
- Groundwater Elevation Contour (FT MSL)
  - = = = Inferred Groundwater Elevation Contour (FT MSL)
  - ↗ Groundwater Flow Direction

- NOTES**
1. All locations and boundaries are approximate.
  2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
  3. Groundwater elevation measurements collected by Rocksmith.
  4. Mississippi River level provided by Ameren.
  5. P17S was not used in potentiometric surface map contouring; well screen interval is in lower permeability aquifer materials and its water level response is slower than other wells in the aquifer.

- REFERENCES**
1. Ameren Missouri Rush Island Energy Center, Rush Island Property Control Map, January 2012.
  2. Coordinate system: NAD 1983 State Plane Missouri East FIPS 2401 feet.



PROJECT  
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER

	DESIGN	GTM	YYYY-MM-DD	2023-12-18
	PREPARED	GTM	PROJECT No.	23008
	REVIEW	JSI	<b>FIGURE F10</b>	
	APPROVED	MNH		

Path: C:\Users\Graham\Rocksmith\Geodesigning\LLC\23007 - Ameren GTM - Documents\400 - Drawings - Figures\4.2-RECA\4.2.2 - Production\PT MAFS\2023 Annual Report\231106\_RECA\_SH\_PathMap.aprx

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



# NOVEMBER 6, 2023 POTENTIOMETRIC SURFACE MAP - INTERMEDIATE ALLUVIAL AQUIFER ZONE



- LEGEND**
- Approximate Rush Island Energy Center Property
  - Boundary
  - RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
- Mississippi River Gauge
  - + CCR Rule Monitoring Well
  - Corrective Action Monitoring Well
  - + Monitoring Well Used for Water Level Elevation Measurements Only
- Groundwater Elevation Contour**
- Groundwater Elevation Contour (FT MSL)
  - ↖ Groundwater Flow Direction

- NOTES**
1. All locations and boundaries are approximate.
  2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
  3. Groundwater elevation measurements collected by Rocksmith.
  4. Mississippi River level provided by Ameren.

- REFERENCES**
1. Ameren Missouri Rush Island Energy Center, Rush Island Property Control Map, January 2012.
  2. Coordinate system: NAD 1983 State Plane Missouri East FIPS 2401 feet.



PROJECT  
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER



	DESIGN	GTM	YYYY-MM-DD	2023-12-18
	PREPARED	GTM	PROJECT No.	23008
	REVIEW	JSI	<b>FIGURE F11</b>	
	APPROVED	MNH		

Path: C:\Users\Graham\OneDrive\Rocksmith Geodesigning\LLC\23007 - Ameren GTM - Documents\400 - Drawings - Figures\4.2-RECA\4.2 - Production\PT MAFS\2023 Annual Report\231106\_RECA\_111\_Potential.mxd

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



# NOVEMBER 6, 2023 POTENTIOMETRIC SURFACE MAP - DEEP ALLUVIAL AQUIFER ZONE



- LEGEND**
- Approximate Rush Island Energy Center Property
  - Boundary
  - RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
- Mississippi River Gauge
  - + CCR Rule Monitoring Wells
  - Corrective Action Monitoring Wells
- Groundwater Elevation Contour**
- Groundwater Elevation Contour (FT MSL)
  - ↘ Groundwater Flow Direction

- NOTES**
1. All locations and boundaries are approximate.
  2. Groundwater elevations displayed in FT MSL (Feet above Mean Sea Level).
  3. Groundwater elevation measurements collected by Rocksmith.
  4. Mississippi River level provided by Ameren.

- REFERENCES**
1. Ameren Missouri Rush Island Energy Center, Rush Island Property Control Map, January 2012.
  2. Coordinate system: NAD 1983 State Plane Missouri East FIPS 2401 feet.



PROJECT  
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT  
AMEREN MISSOURI  
RUSH ISLAND ENERGY CENTER



DESIGN	GTM	YYYY-MM-DD	2023-12-18
PREPARED	GTM	PROJECT No.	23008
REVIEW	JSI	<b>FIGURE F12</b>	
APPROVED	MNH		

Path: C:\Users\Graham\Rocksmith Geoenvironmenting LLC\23007 - Ameren GTM - Documents\400 - Drawings - Figures\F12-RECA-2.2 - Production\POT MAPS\2023 Annual Report\F12-RECA-2.2-RIEC\_Deep\_Potential.aprx

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: