



REPORT

2021 Annual Groundwater Monitoring and Corrective Action Report

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

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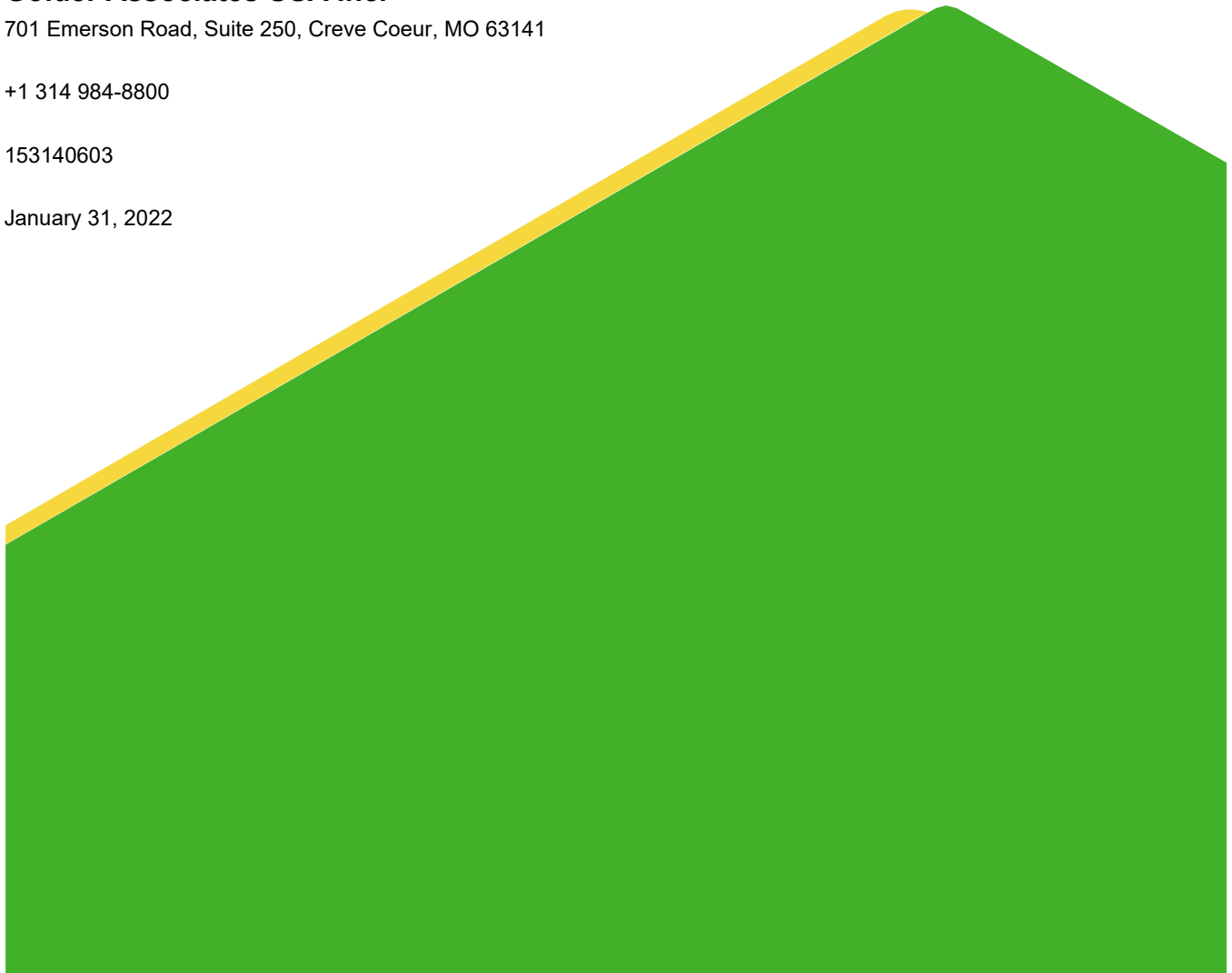
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1.0 EXECUTIVE SUMMARY AND STATUS OF THE RCPA GROUNDWATER MONITORING PROGRAM

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 RCPA Coal Combustion Residuals (CCR) Surface Impoundment at the Rush Island Energy Center (RIEC) is subject to the requirements of the CCR Rule. This Annual Report for the RCPA describes CCR Rule groundwater monitoring activities from January 1, 2021 through December 31, 2021, including verification results related to late 2020 sampling.

Throughout 2021, 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 are 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 SSLs for the past year is provided in **Table 1**.

Table 1 – Summary of 2021 RCPA Sampling Events, Previous Year Verification, and Statistical Evaluations for Detection and Assessment Monitoring Well Network

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt Date	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
October 2020 Sampling Event	Detection & Assessment Monitoring, October 26-28, 2020	November 24, 2020	Appendix III, Detected Appendix IV (See Note 1), & Major Cations and Anions	<p>pH: MW-1, MW-2, MW-3 Boron: MW-1, MW-2, MW-3, MW-4, MW-6, MW-7(R) Fluoride: MW-2, MW-3, MW-4, MW-6, MW-7(R) Sulfate: MW-1, MW-2, MW-3, MW-4 TDS: MW-1</p>	<p>Arsenic: MW-2, MW-3, MW-7(R) Molybdenum: MW-2, MW-3</p>	February 22, 2021
	Verification Sampling, January 7, 2021	January 18, 2021	Detected Appendix III parameters (See Note 2)			
April 2021 Sampling Event	Detection & Assessment Monitoring, April 22-26, 2021	June 2, 2021	Appendix III, Appendix IV, & Major Cations and Anions	<p>pH: MW-1, MW-2, MW-3 Boron: MW-1, MW-2, MW-3, MW-4, MW-6, MW-7(R) Fluoride: MW-2, MW-3, MW-4, MW-6, MW-7(R) Sulfate: MW-1, MW-2, MW-3</p>	<p>Arsenic: MW-2, MW-3, MW-7(R) Molybdenum: MW-2, MW-3</p>	August 31, 2021
	Verification Sampling, June 10, 2021	June 18, 2021	Detected Appendix III parameters (See Note 2)			

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt Date	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
October 2021 Sampling Event	Detection & Assessment Monitoring, October 25-27, 2021	January 14, 2022	Appendix III, Detected Appendix IV (See Note 3), & Major Cations and Anions	To be determined after statistical analysis and Verification Sampling are completed in 2022.		

Notes:

- 1) Testing was completed for Appendix IV analytes that were detected above the PQL during the April 2020 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 2021 sampling event.
- 4) SSI – Statistically Significant Increase.
- 5) SSL – Statistically Significant Level.
- 6) TDS – Total Dissolved Solids.

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 1×10^{-7} centimeters per second (cm/sec) versus 1×10^{-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.

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. The associated statistical analysis results for this event was completed in September 2021 and a summary of the results is provided in **Table 2**.

Table 2 – Summary of 2021 RCPA Sampling Events, Previous Year Verification, 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 2020 Sampling Event	Phase 1 – Corrective Action Sampling October 26-28, 2020	November 24, 2020	Appendix III, Detected Appendix IV (See Note 1), & Major Cations and Anions	Statistical Evaluations were not performed in association with Phase 1 of Corrective Action.	N/A
April 2021 Sampling Event	Phase 2 – Corrective Action Sampling April 22-26, 2021	June 7, 2021	Appendix III, Appendix IV, & Major Cations and Anions	Arsenic: P05S, P17I, P17S, P19S, P21S Lead: P17I, P19I Lithium: P16S, P21D, P22S Molybdenum: P10S, P17D, P17I, P17S, P19D, P19I, P21D, P21I, P22D	September 3, 2021
October 2021 Sampling Event	Phase 2 – Corrective Action Sampling October 25-29, 2021	December 27, 2021	Appendix III, Detected Appendix IV (See Note 2), & Major Cations and Anions	To be determined after statistical analysis and Verification Sampling are completed in 2022.	

- 1) Testing was completed for Appendix IV analytes that were detected above the PQL during the April 2020 sampling event.
- 2) Testing was completed for Appendix IV analytes that were detected above the PQL during the April 2021 sampling event.
- 3) N/A – Not Applicable.

Supplemental Corrective Measures

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 pilot study displayed significant reductions in key CCR indicator parameters. Due to the success, Ameren is currently expanding this technology to the entire downgradient side (eastern side) of the RCPA, to supplement the MNA at the site. Drilling of the injection and extraction wells was completed in 2021, and the system is expected to be fully operational by the end of 2022.

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2.0 INSTALLATION OR DECOMMISSIONING OF MONITORING WELLS

There are currently two (2) 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 2021, however, on January 7th, 2021, while collecting water levels for the January Verification sampling event, it was discovered that monitoring well P-22D was damaged and unable to be opened. It was determined that the damage was caused by vegetation clearing in the nearby area. On February 9th, 2021, Golder hired an approved, non-restricted Missouri licensed well installer, Bulldog Drilling, LLC, (Bulldog) to remove the outer protective cover from the well, replace the damaged portions of the PVC inner casing, replace and install a new protective cover, and replace the bumper posts. 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.

3.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

The following sections discuss the sampling events completed for the RCPA CCR Unit in 2021. **Tables 4** and **5** provide a summary of the groundwater samples collected in 2021 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.

3.1 Detection Monitoring Program

A Detection Monitoring sampling event was completed October 26-28, 2020. Verification sampling and statistical analysis to evaluate for SSIs for the October 2020 event were not completed until 2021 and are therefore included in this report. Detections of Appendix III analytes triggered a Verification sampling event, which was completed January 7, 2021. **Table 6** summarizes the results and the statistical analysis of the October 2020 Detection Monitoring event.

Detection Monitoring samples were collected April 22-26, 2021, 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 (4) to eight (8) new sample results are available. During the statistical analysis of the April 2021 sampling event, the statistical limits used to determine an SSI were updated according to the Statistical Analysis Plan. Statistical analysis of the data determined SSIs. Detections of Appendix III analytes triggered a Verification sampling event, which was completed June 10, 2021. **Table 7** summarizes the results and the statistical analysis of the April 2021 Detection Monitoring event.

A Detection Monitoring sampling event was completed October 25-27, 2021, and testing was performed for all Appendix III analytes, as well as major cations and anions. Statistical analyses to evaluate for SSIs in the October 2021 data were not completed in 2021 and will be included in the 2022 Annual Report. **Table 8** summarizes the results of the October 2021 Detection Monitoring Event.

3.2 Assessment Monitoring Program

An Assessment Monitoring sampling event was completed October 26-28, 2020, and testing was completed for Appendix IV analytes that were detected above the Practical Quantitation Limit (PQL) during the April 2020 sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks, as well as major cations and anions. The statistical evaluation for this event was completed in 2021 and is included in this report. **Table 9** summarizes the results of the October 2020 Assessment Monitoring event. The results from this

analysis and a table that displays the site-specific GWPS are provided in **Appendix B**. Molybdenum at MW-7(R), which was identified as an SSL since the November 2018 sampling event, is no longer an SSL because the lower confidence limit is below the site-specific GWPS and there is no observed statistically significant trend. The SSLs for the RCPA for the October 2020 sampling event are:

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

An Assessment Monitoring sampling event was completed April 22-26, 2021, 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 2021 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 2021 Assessment Monitoring event. The results from this analysis and a table that displays the site specific GWPS are provided in **Appendix C** and determined that there were no new SSLs.

An Assessment Monitoring sampling event was completed October 25-27, 2021, and testing was completed for Appendix IV analytes that were detected above the PQL during the April 2021 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 October 2021 Assessment Monitoring event; however, statistical analyses to evaluate SSLs were not completed in 2021. Results of the statistical evaluation will be included in the 2022 Annual Report.

3.3 Corrective Action Monitoring

Two supplemental Corrective Action sampling events were completed at monitoring well P31S on January 13, 2021, and March 10, 2021. As described in the previous Annual Report, samples could not be collected at P31S in August or October 2020 due to low groundwater elevation, therefore they were collected in 2021. As outlined in the Corrective Action GMP a minimum of eight (8) sample results needed to be collected for parameters present at an SSL (molybdenum and arsenic) for monitoring wells within the Corrective Action Groundwater Monitoring Well Network, therefore, these additional sampling events were completed prior to the first Phase 2 Corrective Action sampling event in April 2021. The results for these sampling events are provided in **Table 12**.

Table 12: Additional 2021 Corrective Action Monitoring Results

Well ID	Constituent	January 13, 2021 Result	March 10, 2021 Result
P31S	Arsenic	17.6	25.6
	Molybdenum	6.9 J	7.3 J

Notes:

- 1.) Results are displayed in micrograms per liter ($\mu\text{g/L}$).
- 2.) J - Result is an estimated value.

A Corrective Action sampling event was completed April 22-26, 2021, and testing was completed for all Appendix III and IV analytes, major cations and anions, and other selected MNA parameters. A summary of the April 2021 Corrective Action sampling event results is provided in **Table 13**. The results from this statistical evaluation are

provided in **Appendix D** and based on the analysis, several wells displayed statistical exceedances of the GWPS using Corrective Action statistical methods¹ as follows:

- Arsenic at P05S, P17I, P17S, P19I, P19S, and P21S
- Lead at P17I and P19I
- Lithium at P16S, P21D, and P22S
- Molybdenum at P10S, P17D, P17I, P17S, P19D, P19I, P21D, P21I, and P22D

A Corrective Action sampling event was completed October 25 - 29, 2021 and testing was completed for Appendix III analytes, Appendix IV analytes that were detected above the PQL during the April 2021 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 October 2021 Corrective Action event; however, statistical analyses to evaluate statistical exceedances of the GWPS were not completed in 2021. Results of the statistical evaluation will be included in the 2022 Annual Report.

3.4 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 E**. 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 flat, the overall net groundwater flow at the RCPA was toward the northeast or towards the Mississippi River. Horizontal gradients calculated by the program range from 0.00002 to 0.002 feet/foot with an estimated net annual groundwater movement of approximately 27 feet in the prevailing downgradient direction.

¹ The statistical testing method used to evaluate the Corrective Action monitoring 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 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 Groundwater Protection Standard (GWPS) instead of the Lower Confidence Limit (LCL) [as used during Assessment Monitoring].

3.5 Sampling Issues

No notable sampling issues were encountered at the RCPA in 2021.

4.0 ACTIVITIES PLANNED FOR 2022

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 October 2021 Detection and Assessment Monitoring data will be completed in 2022 and will be included in the 2022 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 2022. Statistical analysis of the October 2021 Corrective Action Monitoring data will be completed in 2022 and will be included in the 2022 Annual Report. Monitoring and statistical evaluation of MNA will be completed in accordance with the corrective measures remedial plan discussed in the Remedy Selection Report.

Additionally, the groundwater treatment system is expected to be operational by the end of 2022.

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 ¹	Easting ¹	(FT MSL) ²	(FT MSL) ²	(FT MSL) ²	(FT MSL) ²	(FT BGS) ³
CCR RULE COMPLIANCE NETWORK								
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
CORRECTIVE ACTION MONITORING WELL NETWORK								
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*	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 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.

Prepared by: BTT
Checked by: EMS
Reviewed by: MNH

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				Total Number of Samples
	January 2021 Verification Sampling	April 2021 Assessment/ Detection Monitoring	June 2021 Verification Sampling	October 2021 Assessment/ Detection Monitoring	
CCR Rule Compliance Monitoring Well Network					
MW-B1	-	4/26/2021	-	10/27/2021	2
MW-B2	-	4/26/2021	-	10/25/2021	2
MW-1	1/7/2021	4/22/2021	6/10/2021	10/26/2021	4
MW-2	-	4/22/2021	-	10/26/2021	2
MW-3	1/7/2021	4/23/2021	-	10/27/2021	3
MW-4	-	4/23/2021	6/10/2021	10/27/2021	3
MW-5	1/7/2021	4/23/2021	6/10/2021	10/27/2021	4
MW-6	1/7/2021	4/22/2021	-	10/27/2021	3
MW-7(R)	-	4/26/2021	-	10/27/2021	2
Assessment or Detection Monitoring	Detection	Assessment/ Detection	Detection	Assessment/ Detection	NA

Notes:

- 1.) Detection Monitoring results provided in Tables 6-8.
- 2.) Verification Sampling results provided in Table 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				Total Number of Samples
	January 2021 Sampling Event	March 2021 Sampling Event	April 2021 Sampling Event	October 2021 Sampling Event	
Corrective Action Monitoring Well Network					
P05S	-	-	4/22/2021	10/28/2021	2
P10S	-	-	4/22/2021	10/27/2021	2
P16S	-	-	4/22/2021	10/26/2021	2
P17D	-	-	4/22/2021	10/26/2021	2
P17I	-	-	4/22/2021	10/26/2021	2
P17S	-	-	4/22/2021	10/26/2021	2
P19D	-	-	4/22/2021	10/27/2021	2
P19I	-	-	4/22/2021	10/27/2021	2
P19S	-	-	4/22/2021	10/27/2021	2
P21D	-	-	4/23/2021	10/26/2021	2
P21I	-	-	4/23/2021	10/26/2021	2
P21S	-	-	4/23/2021	10/26/2021	2
P22D	-	-	4/22/2021	10/27/2021	2
P22S	-	-	4/22/2021	10/27/2021	2
P29D	-	-	4/26/2021	10/25/2021	2
P29S	-	-	4/26/2021	10/29/2021	2
P30S	-	-	4/26/2021	10/29/2021	2
P31S	1/13/2021	3/10/2021	4/26/2021	10/28/2021	4
Event Type	Corrective Action	Corrective Action	Corrective Action	Corrective Action	NA

Notes:

- 1.) Additional Corrective Action sampling results provided in Table 12.
- 2.) Corrective Action sampling results provided in Tables 13 & 14.
- 3.) "-" No sample collected.
- 4.) NA - Not Applicable.

Table 6
October 2020 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)
October 2020 Detection Monitoring Event											
DATE	NA	NA	10/27/2020	10/27/2020	10/26/2020	10/26/2020	10/27/2020	10/28/2020	10/28/2020	10/26/2020	10/26/2020
pH	SU	6.244-7.486	7.02	7.26	7.69	10.92	9.65	7.39	7.57	7.19	6.89
BORON, TOTAL	µg/L	140.0	109	41.1 J	1,620	5,570	13,900	3,780	80.7 J	797	2,250
CALCIUM, TOTAL	µg/L	161,000	153,000	106,000	151,000 J	9,540	6,100	69,100	132,000	86,900	64,900
CHLORIDE, TOTAL	mg/L	66.36	47.9	19.7	14.7	26.2	31.4	20.3	5.6	6.6	11.3
FLUORIDE, TOTAL	mg/L	0.2332	0.28	0.30	0.23	0.96	1.1	0.91	0.18 J	0.33	0.44
SULFATE, TOTAL	mg/L	46.9	37.9	15.9	386	305	202	55.0	8.7	23.7	37.0
TOTAL DISSOLVED SOLIDS	mg/L	757	668	388	975	748	758	430	432	320	364
January 2021 Verification Sampling Event											
DATE	NA	NA			1/7/2021		1/7/2021		1/7/2021	1/7/2021	
pH	SU	6.244-7.486							7.48		
BORON, TOTAL	µg/L	140.0									
CALCIUM, TOTAL	µg/L	161,000									
CHLORIDE, TOTAL	mg/L	66.36									
FLUORIDE, TOTAL	mg/L	0.2332								0.45	
SULFATE, TOTAL	mg/L	46.9									
TOTAL DISSOLVED SOLIDS	mg/L	757			992		739				

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. Prediction Limits calculated using Sanitas Software.
5. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
6. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).
7. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.

Prepared By: JSI
Checked By: EMS
Reviewed By: SCP

Table 7
April 2021 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)
April 2021 Detection Monitoring Event											
DATE	NA	NA	4/26/2021	4/26/2021	4/22/2021	4/22/2021	4/23/2021	4/23/2021	4/23/2021	4/22/2021	4/26/2021
pH	SU	6.517-7.417	6.81	7.25	7.71	10.57	9.15	7.31	7.09	7.13	6.97
BORON, TOTAL	µg/L	125	103 J	ND	1,800	5,240	14,600	3,160	ND	1000 J	2,420
CALCIUM, TOTAL	µg/L	161,000	137,000	102,000	74,800	8,800	7,180	75,200	105,000	83,500	67,500
CHLORIDE, TOTAL	mg/L	71.83	82.2	21.3	17.3 J	30.4 J	29 J	17.9 J	3.7 J	5.7 J	8.6
FLUORIDE, TOTAL	mg/L	0.2668	0.20	0.22	0.27	0.99	1.1	0.79	0.19 J	0.29	0.33
SULFATE, TOTAL	mg/L	46.9	37.3	9.4	346	315	245 J	29.7	13.6	19.6	24.7
TOTAL DISSOLVED SOLIDS	mg/L	757	391	682	730	750	540	797 J	765	331	316
June 2021 Verification Sampling Event											
DATE	NA	NA			6/10/2021			6/10/2021	6/10/2021		
pH	SU	6.438-7.453									
BORON, TOTAL	µg/L	125									
CALCIUM, TOTAL	µg/L	161,000									
CHLORIDE, TOTAL	mg/L	71.83									
FLUORIDE, TOTAL	mg/L	0.2668			ND						
SULFATE, TOTAL	mg/L	46.9									
TOTAL DISSOLVED SOLIDS	mg/L	757						420	366		

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.

Prepared By: EMS
Checked By: LMS/RSP
Reviewed By: SCP

Table 8
October 2021 Detection 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)
October 2021 Detection Monitoring Event										
DATE	NA	10/27/2021	10/25/2021	10/26/2021	10/26/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021
pH	SU	6.94	7.16	7.73	10.64	9.25	7.26	7.47	7.18	7.13
BORON, TOTAL	µg/L	102	40.2 J	2,340	3,810	14,900	2,850	55.9 J	248	2,300
CALCIUM, TOTAL	µg/L	157,000	106,000	67,600	9,480	6,500	83,700	118,000	138,000 J	65,100
CHLORIDE, TOTAL	mg/L	42.1	21.9	31.0	21.2 J	25.2	15.4	3.5	3.2	8.0
FLUORIDE, TOTAL	mg/L	0.22	0.26	0.33	1.5	0.89	0.79	0.24	0.27	0.39
SULFATE, TOTAL	mg/L	33.7	9.8	60.5	248	200	17.8	14.4	28.7	19.3
TOTAL DISSOLVED SOLIDS	mg/L	630	384 J	579	761	727	459	367	302	355

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.

Prepared By: EMS
Checked By: GTM
Reviewed By: MNH

Table 9
October 2020 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)
FIELD PARAMETERS										
DATE	NA	10/27/2020	10/27/2020	10/26/2020	10/26/2020	10/27/2020	10/28/2020	10/28/2020	10/26/2020	10/26/2020
DISSOLVED OXYGEN	mg/L	1.53	0.29	0.21	6.96	0.11	0.30	0.24	1.68	0.97
pH	SU	7.02	7.26	7.69	10.92	9.65	7.39	7.57	7.19	6.89
REDOX POTENTIAL	mV	-105.8	-108.9	139.4	-156.2	-162.2	-151.9	-128.3	76.1	113.7
SPECIFIC CONDUCTIVITY	mS/cm	1.205	0.709	1.432	1.111	1.172	0.724	0.749	0.571	0.651
TURBIDITY	NTU	2.01	1.32	1.08	3.13	1.99	0.98	2.24	3.78	1.48
APPENDIX IV PARAMETERS										
ANTIMONY, TOTAL	µg/L	ND	ND	0.11 J	2.5	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	24.0	5.3	3.0	212	44.2	9.8	1.9	1.4	97.7
BARIUM, TOTAL	µg/L	498	386	116	10.2	15.8	272	364	123	162
CADMIUM, TOTAL	µg/L	ND	ND	0.24 J	0.21 J	0.085 J	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	0.39 J	0.32 J	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	0.28	0.30	0.23	0.96	1.1	0.91	0.18 J	0.33	0.44
LEAD, TOTAL	µg/L	ND	ND	ND	10.2	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	52.8	4.8 J	ND	ND	ND	37.8	ND	ND	24.0
MOLYBDENUM, TOTAL	µg/L	ND	ND	15.8 J	222	774	112	ND	ND	95.2
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	1.4	0.45 J	ND	ND	0.30 J	ND

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. 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. 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.
6. Statistical Analysis of the October 2020 Assessment Monitoring Data is provided in Appendix B.

Table 10
April 2021 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)
FIELD PARAMETERS										
DATE	NA	4/26/2021	4/26/2021	4/22/2021	4/2/2021	4/23/2021	4/23/2021	4/23/2021	4/22/2021	4/26/2021
DISSOLVED OXYGEN	mg/L	2.64	0.76	0.43	0.15	0.43	0.83	0.15	2.86	0.41
pH	SU	6.81	7.25	7.71	10.57	9.15	7.31	7.09	7.13	6.97
REDOX POTENTIAL	mV	-143.2	-136.4	-65.6	-204.6	-39.0	-133.0	-158.9	-57.5	-154.8
SPECIFIC CONDUCTIVITY	mS/cm	1.240	0.745	1.152	1.109	1.191	0.752	0.654	0.552	0.654
TURBIDITY	NTU	1.71	9.27	0.89	1.98	1.98	4.80	4.71	5.58	1.44
APPENDIX IV PARAMETERS										
ANTIMONY, TOTAL	µg/L	ND	ND	0.30 J	3.0	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	23.3	3.6	4.1	224	34.2	12.0	1.9	4.4 J	117
BARIUM, TOTAL	µg/L	434	375	56.8	7.8	22.1	289	287	144 J	213
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	0.25 J	0.13 J	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	0.20	0.22	0.27	0.99	1.1	0.79	0.19 J	0.29	0.33
LEAD, TOTAL	µg/L	6.9 J	ND	5.9 J	9.5 J	4.2 J	ND	4.9 J	6.0 J	4.6 J
LITHIUM, TOTAL	µg/L	47.4	9.7 J	ND	ND	ND	36.4	ND	ND	28.0
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	ND	ND	25.5	177	789	79.9	ND	ND	80.3
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	1.726 J	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	1.2	0.73 J	ND	ND	0.32 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 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.
 6. Statistical Analysis for the April 2021 Assessment Monitoring data is provided in Appendix C.

Table 11
October 2021 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)
FIELD PARAMETERS										
DATE	NA	10/27/2021	10/25/2021	10/26/2021	10/26/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021
DISSOLVED OXYGEN	mg/L	0.14	3.60	0.31	0.87	0.09	3.64	0.36	2.12	0.13
pH	SU	6.94	7.16	7.73	10.64	9.25	7.26	7.47	7.18	7.13
REDOX POTENTIAL	mV	-143.5	-147.6	118.8	-171.5	-146.7	-139.5	-160.7	-6.7	-174.4
SPECIFIC CONDUCTIVITY	mS/cm	1.173	0.730	0.888	1.042	1.078	0.758	0.647	0.526	0.645
TURBIDITY	NTU	2.92	6.85	4.91	2.09	4.30	1.95	4.07	4.09	2.33
APPENDIX IV PARAMETERS										
ANTIMONY, TOTAL	µg/L	ND	ND	0.15 J	3.2	ND	ND	ND	0.25 J	ND
ARSENIC, TOTAL	µg/L	23.2	5.4	2.7	242	37.0	13.6	1.9	49.6	122
BARIUM, TOTAL	µg/L	492	391	47.3	11.5	23.8	322	316	4,370	234
CADMIUM, TOTAL	µg/L	ND	ND	ND	0.43 J	0.17 J	ND	ND	0.55 J	ND
CHROMIUM, TOTAL	µg/L	0.24 J	0.34 J	0.38 J	0.82 J	0.82 J	0.32 J	0.32 J	21.5	0.30 J
FLUORIDE, TOTAL	mg/L	0.22	0.26	0.33	1.5	0.89	0.79	0.24	0.27	0.39
LEAD, TOTAL	µg/L	ND	ND	ND	15.5	ND	ND	ND	7.3 J	ND
LITHIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	37.0	ND	ND	27.9
MOLYBDENUM, TOTAL	µg/L	ND	ND	76.9	107	871	69.3	ND	ND	74.2
RADIUM [226 + 228]	pCi/L	1.897	ND	ND	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	4.3	0.47 J	ND	ND	4.7	ND

- 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. 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. 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 13
April 2021 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
FIELD PARAMETERS																			
DATE	NA	4/22/2021	4/22/2021	4/22/2021	4/22/2021	4/22/2021	4/22/2021	4/22/2021	4/22/2021	4/22/2021	4/23/2021	4/23/2021	4/23/2021	4/22/2021	4/22/2021	4/26/2021	4/26/2021	4/26/2021	4/26/2021
DISSOLVED OXYGEN	mg/L	0.58	0.97	2.64	1.76	0.03	0.39	0.86	0.18	0.77	0.18	0.10	0.20	0.31	0.14	0.28	0.19	0.16	0.21
REDOX POTENTIAL	mV	49.8	9.8	133.0	-171.7	-187.4	-70.0	-108.0	-100.0	-102.9	-143.0	-184.6	-134.6	-91.0	-41.0	-102.0	-124.9	0.7	-154.2
SPECIFIC CONDUCTIVITY	mS/cm	0.667	0.872	0.610	0.961	1.126	1.250	0.945	1.389	1.267	2.808	0.596	1.724	0.874	1.559	0.936	1.053	1.013	0.502
TURBIDITY	NTU	2.61	4.10	2.12	1.54	1.56	3.96	4.60	2.92	0.75	1.11	0.78	0.96	4.17	8.13	3.53	11.1	2.67	5.89
APPENDIX III PARAMETERS																			
BORON, TOTAL	µg/L	4,240	1,690	194	7,440	2,020	2,740	10,800	5,740	717	5,070	2,390	250	8,700	489	91.6 J	104	1,100	339
CALCIUM, TOTAL	µg/L	62,800	94,300	78,600	45,000	8,630	110,000	29,600	8,020	184,000	106,000	19,700	269,000	23,400	215,000	90,800	157,000	126,000	72,400
CHLORIDE, TOTAL	mg/L	23.1	15.8	1.5	29.5	23.3	29.9	25.9	24.4	10.9	627	31.5	23.8 J	27.8	43.4	75.9	17.1	47.6	3.4
pH	SU	7.06	6.87	7.10	7.53	10.01	7.13	7.67	10.85	6.59	7.37	7.95	6.60	7.68	6.67	7.32	6.94	6.90	7.10
SULFATE, TOTAL	mg/L	15.8	106	32.9	271	291	207	207	315	114	144	93.5	120	97.4	229	19.7	22.1	131	28.8
TOTAL DISSOLVED SOLIDS	mg/L	14.0	770	385	756	368	412	755	991	778	1,550 J	829 J	390 J	18.0	1,000	477	611	633	304
APPENDIX IV PARAMETERS																			
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	0.38 J	ND	ND	5.4	ND	ND	ND	ND	0.22 J	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	157	3.4	1.4	1.2	51.2	28.9	0.81 J	295	19.2	0.55 J	5.2	122	9.0	3.3	0.86 J	41.8	0.88 J	17.0
BARIUM, TOTAL	µg/L	166	145	32.9	103	13.6	91.9	68.4	13.2	418	127	36.5	508	61.2	144	145	423	92.4	173
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.12 J	ND	ND	0.36 J	0.064 J	0.088 J	0.56	0.24 J	ND	ND	0.10 J	0.086 J	0.086 J	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	0.36 J	0.88 J	ND	0.61 J	0.93 J	0.37 J	ND	ND	0.45 J	1.7	0.41 J	0.37 J	0.60 J	ND	0.34 J
COBALT, TOTAL	µg/L	ND	2.9 J	ND	ND	ND	2.3 J	ND	ND	1.0 J	ND	ND	2.3 J	ND	2.1 J	ND	2.2 J	ND	ND
FLUORIDE, TOTAL	mg/L	0.38 J	0.43	0.40	0.65	2.0	1.1	2.1	1.3	0.32	1.2	1.1	0.32	2.6	ND	0.29	0.25	0.44	0.44
LEAD, TOTAL	µg/L	4.1 J	5.2 J	ND	3.9 J	11.8	4.5 J	ND	22.1	6.3 J	ND	ND	8.9 J	ND	4.7 J	ND	4.4 J	ND	ND
LITHIUM, TOTAL	µg/L	13.9	20.8	29.1	35.8	ND	27.7	16.4	8.3 J	42.9	143	23.3	18.5	25.1	56.0	39.4	11.7	36.6	11.6
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	9.2 J	60.3	20.8	676	104	68.9	894	339	4.6 J	324	115	ND	348	9.3 J	ND	2.5 J	2.3 J	8.8 J
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	1.290	ND	ND	ND	ND	1.196	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	4.6	0.22 J	1.6	0.66 J	0.38 J	4.8	ND	ND	0.41 J	0.28 J	0.89 J	0.52 J	ND	0.19 J	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADDITIONAL PARAMETERS																			
ALKALINITY	mg/L	294	340	279	134	181	412	220	338	550	256	147	821	310	537	321	500	303	230
IRON, FERRIC, TOTAL	mg/L	7.7	0.32	0.032 J	2.2	ND	3.6	0.44	ND	17.0	1.9	ND	41.3	ND	2.8	3.7	11.7	0.23	4.5
IRON, FERROUS, TOTAL	mg/L	1.0 J	ND	ND	0.47 J	0.32 J	0.41 J	1.1 J	0.26 J	0.72 J	0.64 J	0.24 J	1.7 J	1.3 J	0.056 J	0.11 J	0.54 J	ND	0.31 J
IRON, TOTAL	µg/L	8,720	364	31.8 J	2,720	214	3,980	1,560	170	17,700	2,510	232	43,000	1,120	2,880	3,790	12,300	229	4,810
MAGNESIUM, TOTAL	µg/L	21,700	14,500	16,200	9,810	317	23,500	4,440	ND	35,500	36,800	2,420	59,400	3,160	49,500	27,600	38,500	21,500	13,200
MANGANESE, TOTAL	µg/L	353	1,630	0.80 J	456	6.7	1,230	220	3.0 J	1,290	802	56.0	3,280	65.3	721	141	635	322	1,220
POTASSIUM, TOTAL	µg/L	5,470	4,970	2,470	7,060	1,660	3,750	3,330	11,500	7,910	8,830	4,820	5,440	4,170	7,640	4,760	6,310	6,740	4,880
SODIUM, TOTAL	µg/L	25,600	62,500	18,300	124,000	200,000	116,000	168,000	275,000	34,300	347,000	97,200	28,900	155,000	54,500	60,000	16,200	65,000	12,300
SULFIDE, TOTAL	mg/L	0.033 J	ND	ND	0.097	1.4	ND	0.038 J	5.0	0.036 J	ND	0.12	ND	0.053	ND	ND	ND	ND	0.029 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 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.
- Statistical Analysis of the April 2021 Corrective Action Data is provided in Appendix D.

Prepared By: EMS
Checked By: ETF
Reviewed By: SCP

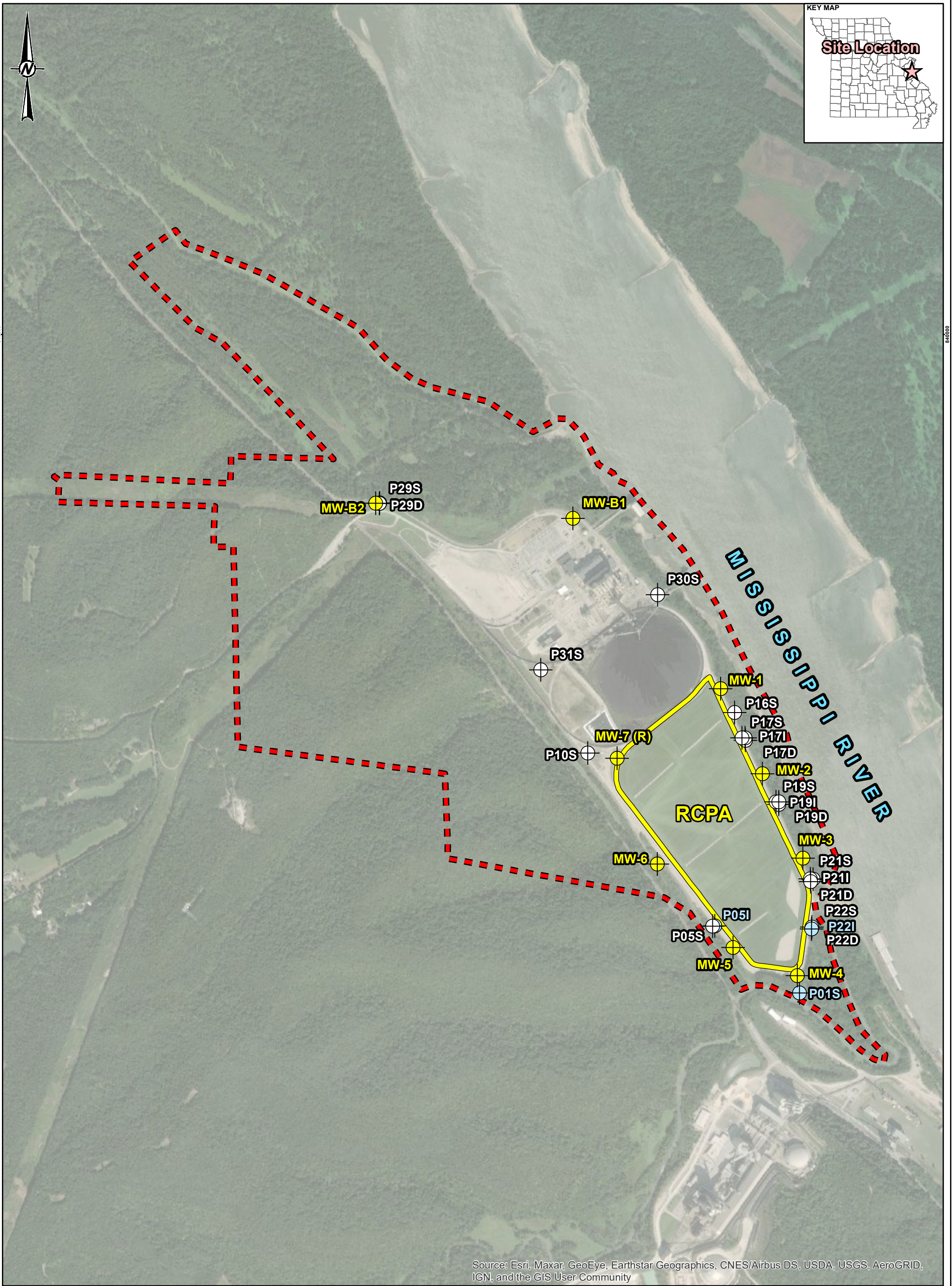
Table 14
October 2021 Corrective Action Monitoring Results
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO

ANALYTE	UNITS	P05S	P10S	P16S	P17D	P17I	P17S	P19D	P19I	P19S	P21D	P21I	P21S	P22D	P22S	P29D	P29S	P30S	P31S
FIELD PARAMETERS																			
DATE	NA	10/28/2021	10/27/2021	10/26/2021	10/26/2021	10/26/2021	10/26/2021	10/27/2021	10/27/2021	10/27/2021	10/26/2021	10/26/2021	10/26/2021	10/27/2021	10/27/2021	10/25/2021	10/29/2021	10/29/2021	10/28/2021
DISSOLVED OXYGEN	mg/L	1.57	0.27	0.83	1.07	0.29	3.26	3.84	0.18	1.45	0.05	1.02	1.39	1.54	0.33	1.98	1.11	0.31	1.17
REDOX POTENTIAL	mV	-160.6	-76.3	-13.6	-166.8	-227.2	-83.5	-174.8	-241.7	-109.8	-194.8	-158.2	20.6	-138.0	-6.7	-133.3	-75.5	-60.7	70.3
SPECIFIC CONDUCTIVITY	mS/cm	0.626	0.850	0.966	0.889	1.084	1.694	0.939	1.449	0.739	1.945	0.553	0.836	0.831	1.502	0.849	1.444	1.067	0.411
TURBIDITY	NTU	9.52	10.5	1.77	0.32	1.35	4.64	4.34	0.93	0.95	1.48	1.00	6.55	1.66	2.53	5.71	8.53	0.93	11.3
APPENDIX III PARAMETERS																			
BORON, TOTAL	µg/L	4,420	2,500	482	7,560	2,160	1,390	11,900	4,660	449	6,410	2,450	213	9,490	547	100	85.5 J	977	307
CALCIUM, TOTAL	µg/L	65,500	70,900	148,000 J	45,200	12,500	186,000	30,200	10,600	98,400	74,800	19,100	136,000	22,800	234,000	86,300	251,000	160,000	60,400
CHLORIDE, TOTAL	mg/L	22.8	17.4	2.5 J	24.0	22.8	66.0	23.4	26.0	2.6	383	26.1	6.0	26.1	41.2	58.9	30.7	39.3	1.6 J
pH	SU	7.14	6.93	6.75	7.75	10.05	7.24	7.72	10.94	6.83	7.51	8.12	6.70	7.67	6.73	7.11	6.63	7.02	7.32
SULFATE, TOTAL	mg/L	17.1	125	ND	2.4	4.3	ND	5.8 J	168	30.5	4.8	5.9 J	ND	98.0	206	19.9	125	149	15.4
TOTAL DISSOLVED SOLIDS	mg/L	368	534	609	615	769	1,140	661	996	406	1,120	372	512	591	962	443 J	935	831	293
APPENDIX IV PARAMETERS																			
ANTIMONY, TOTAL	µg/L	ND	ND	0.14 J	ND	0.34 J	0.18 J	ND	2.3	ND	ND	ND	0.19 J	0.13 J	ND	ND	ND	0.94 J	ND
ARSENIC, TOTAL	µg/L	180	11.7	1.0	1.1	53.3	21.0	0.72 J	149	13.7	0.49 J	5.0	5.9	8.6	1.5	0.99 J	22.1	1.5	83.7
BARIUM, TOTAL	µg/L	184	185	112	104	21.4	183	99.0	14.6 J	256	84.1	39.2	260	74.2	170	147	601	109	302
CADMIUM, TOTAL	µg/L	ND	0.11 J	0.065 J	0.15 J	0.30 J	0.10 J	0.16 J	0.15 J	ND	0.074 J	ND	0.17 J	0.096 J	0.16 J	ND	0.078 J	0.090 J	ND
CHROMIUM, TOTAL	µg/L	0.39 J	0.44 J	ND	0.38 J	0.89 J	0.47 J	0.89 J	0.72 J	0.38 J	ND	0.50 J	0.31 J	1.5	0.30 J	0.35 J	0.36 J	0.30 J	0.51 J
FLUORIDE, TOTAL	mg/L	0.43	0.48	0.48	0.70	1.9	0.37	2.0	1.3	0.32	1.4	1.1	0.28	2.5	0.37	0.32	0.23	0.44	0.39
LEAD, TOTAL	µg/L	ND	ND	ND	ND	9.8 J	ND	ND	5.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	15.4	15.9	ND	39.1	ND	ND	19.0	16.3	26.2	146	20.1	ND	27.7	62.4	36.6	57.8	35.7	ND
MOLYBDENUM, TOTAL	µg/L	11.8 J	105	13.7 J	732	133	18.4 J	974	138	6.5 J	484	134	ND	358	8.3 J	ND	ND	2.3 J	7.1 J
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.010	ND	ND	ND	ND	ND	ND	ND	2.000
SELENIUM, TOTAL	µg/L	0.21 J	0.28 J	2.9	0.25 J	1.7	0.91 J	0.29 J	0.99 J	ND	ND	0.39 J	0.85 J	0.74 J	0.42 J	ND	ND	ND	ND
ADDITIONAL PARAMETERS																			
ALKALINITY	mg/L	265	268	408	127	169	620	208	455	327	239	137	422	275	283	313	643	345	189
IRON, TOTAL	µg/L	10,100	3,160	82.6	2,490	242	1,740	1,920	102	10,100	1,610	253	701	1,210	691	4,050	11,500	1,590	9,880
MAGNESIUM, TOTAL	µg/L	21,800	10,900	32,300	10,300	622	35,100	4,640	ND	19,100	25,400	2,480	26,500	3,230	43,600	23,800	48,300	23,400	11,500
MANGANESE, TOTAL	µg/L	308	1,200	1.1 J	384	7.2	4,660	246	1.8 J	687	627	51.5	106	72.5	520	139	514	579	2,180
POTASSIUM, TOTAL	µg/L	5,730	4,310	4,290	7,330	2,350	3,510	3,440	12,600	5,600	8,290	4,840	4,350	4,680	7,860	4,020	6,940	6,970	3,720
SODIUM, TOTAL	µg/L	29,500	106,000	35,300	132,000	238,000	183,000	183,000	295,000	22,700	319,000	99,200	24,300	171,000 J	60,900	51,900	23,500	62,600	11,500

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 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.

Figures



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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 Level Elevation Measurements Only



CLIENT
AMEREN MISSOURI
RUSH ISLAND ENERGY CENTER



CONSULTANT



YYYY-MM-DD	2022-01-20
DESIGNED	JSI
PREPARED	ETF
REVIEWED	BTT
APPROVED	MNH

NOTE(S)

1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.

REFERENCE(S)

- 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

GROUNDWATER MONITORING PROGRAM

TITLE

RUSH ISLAND ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND WELL LOCATION MAP

PROJECT NO.
153140603

CONTROL
1240

FIGURE
1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

APPENDIX A

Laboratory Analytical Data

January 18, 2021

Jeffrey Ingram
Golder Associates
13515 Barrett Parkway Drive
Suite 260
Ballwin, MO 63021

RE: Project: AMEREN RCPA
Pace Project No.: 60358711

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on January 09, 2021. 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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN RCPA

Pace Project No.: 60358711

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 200030

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

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SAMPLE SUMMARY

Project: AMEREN RCPA

Pace Project No.: 60358711

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60358711001	R-MW-1	Water	01/07/21 09:55	01/09/21 04:00
60358711002	R-MW-3	Water	01/07/21 11:00	01/09/21 04:00
60358711003	R-DUP-1	Water	01/07/21 08:00	01/09/21 04:00
60358711004	R-FB-1	Water	01/07/21 11:10	01/09/21 04:00
60358711005	R-MW-6	Water	01/07/21 13:14	01/09/21 04:00

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA

Pace Project No.: 60358711

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60358711001	R-MW-1	SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60358711002	R-MW-3	SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60358711003	R-DUP-1	SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60358711004	R-FB-1	SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60358711005	R-MW-6	EPA 300.0	CRN2	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60358711

Sample: R-MW-1 **Lab ID: 60358711001** Collected: 01/07/21 09:55 Received: 01/09/21 04:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	992	mg/L	13.3	13.3	1		01/14/21 11:19		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	<0.075	mg/L	0.20	0.075	1		01/13/21 20:31	16984-48-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60358711

Sample: R-MW-3 **Lab ID: 60358711002** Collected: 01/07/21 11:00 Received: 01/09/21 04:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	739	mg/L	10.0	10.0	1		01/14/21 11:20		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	1.0	mg/L	0.20	0.075	1		01/12/21 18:13	16984-48-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60358711

Sample: R-DUP-1 **Lab ID: 60358711003** Collected: 01/07/21 08:00 Received: 01/09/21 04:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	761	mg/L	10.0	10.0	1		01/14/21 11:20		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	1.0	mg/L	0.20	0.075	1		01/12/21 18:28	16984-48-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60358711

Sample: R-FB-1 **Lab ID: 60358711004** Collected: 01/07/21 11:10 Received: 01/09/21 04:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		01/14/21 11:20		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	<0.085	mg/L	0.20	0.085	1		01/13/21 12:00	16984-48-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60358711

Sample: R-MW-6 **Lab ID: 60358711005** Collected: 01/07/21 13:14 Received: 01/09/21 04:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City									
Fluoride	0.45	mg/L	0.20	0.075	1		01/12/21 18:57	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60358711

QC Batch:	698754	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60358711001, 60358711002, 60358711003, 60358711004

METHOD BLANK: 2819098 Matrix: Water
Associated Lab Samples: 60358711001, 60358711002, 60358711003, 60358711004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	01/14/21 11:16	

LABORATORY CONTROL SAMPLE: 2819099

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 2819100

Parameter	Units	60358678005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	861	882	2	10	

SAMPLE DUPLICATE: 2819101

Parameter	Units	60358711001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	992	999	1	10	

SAMPLE DUPLICATE: 2819102

Parameter	Units	60358712001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	509	513	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RCPA
Pace Project No.: 60358711

QC Batch: 698910 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: 60358711002, 60358711003, 60358711004, 60358711005

METHOD BLANK: 2819498 Matrix: Water
Associated Lab Samples: 60358711002, 60358711003, 60358711004, 60358711005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	01/12/21 09:08	

METHOD BLANK: 2821241 Matrix: Water
Associated Lab Samples: 60358711002, 60358711003, 60358711004, 60358711005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	01/13/21 08:59	

LABORATORY CONTROL SAMPLE: 2819499

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.4	96	90-110	

LABORATORY CONTROL SAMPLE: 2821242

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2819500 2819501

Parameter	Units	60358560003		2819501		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Fluoride	mg/L	0.26	2.5	2.5	2.3	2.4	82	84	80-120	2	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2819502 2819503

Parameter	Units	60358561003		2819503		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Fluoride	mg/L	0.29	2.5	2.5	2.1	1.8	72	62	80-120	12	15 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

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60358711

QC Batch: 699123

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: 60358711001

METHOD BLANK: 2820088

Matrix: Water

Associated Lab Samples: 60358711001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	01/13/21 18:05	

METHOD BLANK: 2821871

Matrix: Water

Associated Lab Samples: 60358711001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	01/14/21 09:14	

METHOD BLANK: 2822618

Matrix: Water

Associated Lab Samples: 60358711001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.075	0.20	0.075	01/15/21 09:15	

LABORATORY CONTROL SAMPLE: 2820089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	98	90-110	

LABORATORY CONTROL SAMPLE: 2821872

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

LABORATORY CONTROL SAMPLE: 2822619

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	101	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

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60358711

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2820090												2820091	
Parameter	Units	60358710001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Fluoride	mg/L	0.48	2.5	2.5	3.0	3.0	99	100	80-120	1	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2820092												2820093	
Parameter	Units	60358711001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Fluoride	mg/L	<0.075	2.5	2.5	2.2	2.0	89	81	80-120	10	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2820094												2820095	
Parameter	Units	60358712001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Fluoride	mg/L	0.42	2.5	2.5	3.0	2.8	104	94	80-120	9	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

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QUALIFIERS

Project: AMEREN RCPA

Pace Project No.: 60358711

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.

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

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA

Pace Project No.: 60358711

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60358711001	R-MW-1	SM 2540C	698754		
60358711002	R-MW-3	SM 2540C	698754		
60358711003	R-DUP-1	SM 2540C	698754		
60358711004	R-FB-1	SM 2540C	698754		
60358711001	R-MW-1	EPA 300.0	699123		
60358711002	R-MW-3	EPA 300.0	698910		
60358711003	R-DUP-1	EPA 300.0	698910		
60358711004	R-FB-1	EPA 300.0	698910		
60358711005	R-MW-6	EPA 300.0	698910		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60358711



60358711

Client Name: Golder Associates

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 2 PCC

Thermometer Used: T-298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.2 Corr. Factor -0.2 Corrected 1.0 °C

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 1.6 1.4 °C

1-9-21/ks

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input 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 ₃ , H ₂ SO ₄ , 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: _____

REVIEWED
By ichurch at 9:03 am, 1/11/21

Date: _____



GOLDER

MEMORANDUM

DATE January 27, 2021

Project No. 153140602

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA – VERIFICATION SAMPLING - DATA PACKAGE 60358711

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: Golder Associates
 Project Name: Ameren- Rush Island - RCPA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140602
 Validation Date: 01/27/2021

Laboratory: Pace Analytical Services

SDG #: 60358711

Analytical Method (type and no.): SM2540C (TDS); EPA 300.0 (Anions)

Matrix: Air Soil/Sed. Water Waste

Sample Names R-MW-1, R-MW-3, R-DUP-1, R-FB-1, R-MW-6

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>01/07/2021</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>EMS/BTT</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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
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-FB-1 @ R-MW-3
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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 @ R-MW-3
b) Were field dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD 2.9% (<20%)
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD: 2% (<10%)

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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:

MS/MSD:
 2819502/2819503: MS/MSD % recovery low for Fluoride. MS/MSD performed on unrelated sample, no qualification necessary.

January 20, 2021

Jeffrey Ingram
Golder Associates
13515 Barrett Parkway Drive
Suite 260
Ballwin, MO 63021

RE: Project: AMEREN-RCPA-CA ADD'L SAMPLING
Pace Project No.: 60359010

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on January 14, 2021. 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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN-RCPA-CA ADD'L SAMPLING

Pace Project No.: 60359010

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 200030

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN-RCPA-CA ADD'L SAMPLING

Pace Project No.: 60359010

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60359010001	R-P-31S	Water	01/13/21 11:36	01/14/21 05:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN-RCPA-CA ADD'L SAMPLING

Pace Project No.: 60359010

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60359010001	R-P-31S	EPA 200.7	MRV	1	PASI-K
		EPA 200.8	JGP	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN-RCPA-CA ADD'L SAMPLING

Pace Project No.: 60359010

Sample: R-P-31S **Lab ID: 60359010001** Collected: 01/13/21 11:36 Received: 01/14/21 05:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Molybdenum	6.9J	ug/L	20.0	1.7	1	01/18/21 11:55	01/19/21 12:15	7439-98-7	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	17.6	ug/L	1.0	0.086	1	01/15/21 09:42	01/20/21 12:58	7440-38-2	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN-RCPA-CA ADD'L SAMPLING

Pace Project No.: 60359010

QC Batch: 699715

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: 60359010001

METHOD BLANK: 2822515

Matrix: Water

Associated Lab Samples: 60359010001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Molybdenum	ug/L	<1.7	20.0	1.7	01/19/21 11:48	

LABORATORY CONTROL SAMPLE: 2822516

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Molybdenum	ug/L	1000	1020	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2822517 2822518

Parameter	Units	2822517		2822518		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Molybdenum	ug/L	ND	1000	999	1030	100	103	70-130	3	20	

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QUALITY CONTROL DATA

Project: AMEREN-RCPA-CA ADD'L SAMPLING

Pace Project No.: 60359010

QC Batch: 699420

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: 60359010001

METHOD BLANK: 2821294

Matrix: Water

Associated Lab Samples: 60359010001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.086	1.0	0.086	01/20/21 11:13	

LABORATORY CONTROL SAMPLE: 2821295

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	39.5	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2821296 2821297

Parameter	Units	60358950001		2821296		2821297		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Arsenic	ug/L	0.75J	40	40	40.3	40.7	99	100	70-130	1	20

MATRIX SPIKE SAMPLE: 2821298

Parameter	Units	60358832002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	2.1	40	41.6	99	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN-RCPA-CA ADD'L SAMPLING

Pace Project No.: 60359010

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.

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN-RCPA-CA ADD'L SAMPLING

Pace Project No.: 60359010

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60359010001	R-P-31S	EPA 200.7	699715	EPA 200.7	699871
60359010001	R-P-31S	EPA 200.8	699420	EPA 200.8	699497

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60359010



Client Name: Coolder Assoc.

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 Cycle

Thermometer Used: T298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 0.4 Corr. Factor -0.2 Corrected 0.2

Date and initials of person examining contents: 1-14-2021 JK

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 ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# <u>603173</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: _____

REVIEWED
By jchurch at 12:43 pm, 1/14/21

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: **Section B** Required Project Information: **Section C** Invoice Information:

Company: Golder Associates
 Address: 13515 Barrett Parkway Dr., Ste 260
 Ballwin, MO 63021
 Email To: jeffrey_ingram@golder.com
 Phone: 636-724-9191 Fax: 636-724-9323
 Requested Due Date/TAT: Standard

Report To: Jeffrey Ingram
 Copy To: Ryan Feldmann/Eric Schneider
 Purchase Order No.:
 Project Name: Ameren - RCRA-CA Additional Sampling
 Project Number: 153140602.0002-A

Company Name: Ryan Feldmann/Eric Schneider
 Address:
 Reference: Jamie Church
 Pace Project Manager:
 Pace Profile #: 9285

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Site Location MO
 STATE:

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WP AR OT TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives HCl HNO ₃ H ₂ SO ₄ NaOH Na ₂ S ₂ O ₃ Methanol Other	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
			COMPOSITE START	COMPOSITE END/GRAB						
1	SAMPLE ID (A-Z, 0-9 / - / -) Sample IDs MUST BE UNIQUE R-P-315		DATE	TIME	G	WT	1	Analysis Test ↑		
2			1-13-21	1136	G	WT		200.7 Boron		
3					G	WT		200.7 Calcium		
4					G	WT		Chloride		
5					G	WT		Fluoride		
6					G	WT		Sulfate		
7					G	WT		TDS		
8					G	WT		200.8 Arsenic		
9					G	WT				
10					G	WT				
11					G	WT				
12					G	WT				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Brendan Talbert Golder	1-13-2021	1345	Angelo McManus	1-13	1400	Received on Ice (Y/N) Custody Sealed Cooler (Y/N) Samples Intact (Y/N)
	Angelo McManus	1-13	1400	Wright / G	1-14-21	0510	Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Brendan Talbert
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YY): 01-13-21



GOLDER

MEMORANDUM

DATE January 27, 2021

Project No. 153140602

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA-CA – ADDITIONAL SAMPLING - DATA PACKAGE 60359010

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).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
 Project Name: Ameren- Rush Island - RCPA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140602
 Validation Date: 01/27/2021

Laboratory: Pace Analytical Services - Kansas City
 Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals)
 Matrix: Air Soil/Sed. Water Waste
 Sample Names R-P-31S

SDG #: 60359010

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>01/13/2021</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>BTT</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: <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 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

Blanks	YES	NO	NA	COMMENTS
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"/>	_____

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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Duplicates	YES	NO	NA	COMMENTS
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"/>	_____

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 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:

None.

March 24, 2021

Jeffrey Ingram
Golder Associates
13515 Barrett Parkway Drive
Suite 260
Ballwin, MO 63021

RE: Project: AMEREN RUSH ISLAND EC RCPA-CA
Pace Project No.: 60363466

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on March 11, 2021. 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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN RUSH ISLAND EC RCPA-CA

Pace Project No.: 60363466

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 200030

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN RUSH ISLAND EC RCPA-CA

Pace Project No.: 60363466

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60363466001	R-P31S	Water	03/10/21 13:47	03/11/21 04:33

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RUSH ISLAND EC RCPA-CA

Pace Project No.: 60363466

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60363466001	R-P31S	EPA 200.7	TDS	1	PASI-K
		EPA 200.8	JGP	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RUSH ISLAND EC RCPA-CA

Pace Project No.: 60363466

Sample: R-P31S **Lab ID: 60363466001** Collected: 03/10/21 13:47 Received: 03/11/21 04:33 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Molybdenum	7.3J	ug/L	20.0	2.2	1	03/18/21 13:35	03/23/21 12:52	7439-98-7	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Arsenic	25.6	ug/L	1.0	0.11	1	03/17/21 09:43	03/18/21 14:43	7440-38-2	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RUSH ISLAND EC RCPA-CA

Pace Project No.: 60363466

QC Batch: 709466	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: 60363466001

METHOD BLANK: 2856610 Matrix: Water

Associated Lab Samples: 60363466001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Molybdenum	ug/L	<2.2	20.0	2.2	03/23/21 12:02	

LABORATORY CONTROL SAMPLE: 2856611

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Molybdenum	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2856612 2856613

Parameter	Units	2856612		2856613		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60363075002	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Molybdenum	ug/L	27.1	1000	1000	1020	1030	99	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

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QUALITY CONTROL DATA

Project: AMEREN RUSH ISLAND EC RCPA-CA

Pace Project No.: 60363466

QC Batch: 709138

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: 60363466001

METHOD BLANK: 2855409

Matrix: Water

Associated Lab Samples: 60363466001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.11	1.0	0.11	03/18/21 14:19	

LABORATORY CONTROL SAMPLE: 2855410

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	40.8	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2855411 2855412

Parameter	Units	2855411		2855412		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60363336001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic	ug/L	ND	40	40	43.0	43.0	106	107	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

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QUALIFIERS

Project: AMEREN RUSH ISLAND EC RCPA-CA

Pace Project No.: 60363466

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.

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RUSH ISLAND EC RCPA-CA

Pace Project No.: 60363466

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60363466001	R-P31S	EPA 200.7	709466	EPA 200.7	709550
60363466001	R-P31S	EPA 200.8	709138	EPA 200.8	709218

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60363466
60363466

Client Name: Golden Associates

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-298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.7 Corr. Factor 0.0 Corrected 1.7

Date and initials of person examining contents:
3/11/21

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 ₃ , H ₂ SO ₄ , 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	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

REVIEWED

Project Manager Review: By jchurch at 4:24 pm, 3/11/21 Date: _____



MEMORANDUM

DATE March 24, 2021

Project No. 153140603

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA-CA – ADDITIONAL SAMPLING - DATA PACKAGE 60363466

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).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
 Project Name: Ameren- Rush Island - RCPA-CA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140603
 Validation Date: 3/24/2021

Laboratory: Pace Analytical Services - Kansas City
 Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals)
 Matrix: Air Soil/Sed. Water Waste _____
 Sample Names R-P31S

SDG #: 60363466

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>3/10/2021</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>BTT</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, cond, temperature, turbidity, 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>_____</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

Blanks	YES	NO	NA	COMMENTS
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"/>	_____

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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Duplicates	YES	NO	NA	COMMENTS
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"/>	_____

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 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:

June 02, 2021

Jeffrey Ingram
Golder Associates
13515 Barrett Parkway Drive
Suite 260
Ballwin, MO 63021

RE: Project: AMEREN RIEC RCPA
Pace Project No.: 60367582

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between April 24, 2021 and April 27, 2021. 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

Revision 1 - This report replaces the May 24, 2021 report. This project was revised on June 2, 2021 to re-ship the final report due to a LIMs data merge error. (Greensburg, PA)

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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates
Brendan Talbert, Golder Associates



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

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 #: 9526

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 #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 200030

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60367582001	R-MW-1	Water	04/22/21 14:10	04/24/21 03:10
60367582002	R-MW-2	Water	04/22/21 11:14	04/24/21 03:10
60367582003	R-MW-3	Water	04/23/21 10:45	04/24/21 03:10
60367582004	R-MW-4	Water	04/23/21 14:40	04/24/21 03:10
60367582005	R-MW-5	Water	04/23/21 14:35	04/24/21 03:10
60367582006	R-MW-6	Water	04/22/21 13:40	04/24/21 03:10
60367582007	R-DUP-1	Water	04/22/21 00:00	04/24/21 03:10
60367582008	R-FB-1	Water	04/22/21 15:00	04/24/21 03:10
60367582009	R-MS-1	Water	04/23/21 10:45	04/24/21 03:10
60367582010	R-MSD-1	Water	04/23/21 10:45	04/24/21 03:10
60367582011	R-MW-7(r)	Water	04/26/21 10:59	04/27/21 03:43
60367582012	R-MW-B1	Water	04/26/21 13:52	04/27/21 03:43
60367582013	R-MW-B2	Water	04/26/21 11:30	04/27/21 03:43

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60367582001	R-MW-1	EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JDE	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MAP	1	PASI-K		
		SM 2540C	LDB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	MAW	1	PASI-K		
		SM 4500-S-2 D	MAW	1	PASI-K		
		EPA 300.0	CRN2	3	PASI-K		
		60367582002	R-MW-2	EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	JDE			1	PASI-K		
EPA 903.1	MK1			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	MAP			1	PASI-K		
SM 2540C	LDB			1	PASI-K		
SM 3500-Fe B#4	LDB			1	PASI-K		
SM 3500-Fe B#4	MAW			1	PASI-K		
SM 4500-S-2 D	MAW			1	PASI-K		
EPA 300.0	CRN2			3	PASI-K		
60367582003	R-MW-3			EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MAP	1	PASI-K		
		SM 2540C	LDB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	MAW	1	PASI-K		
		SM 4500-S-2 D	MAW	1	PASI-K		
		EPA 300.0	CRN2, VRP	3	PASI-K		
		60367582004	R-MW-4	EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	JDE			1	PASI-K		
EPA 903.1	MK1			1	PASI-PA		

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60367582005	R-MW-5	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60367582006	R-MW-6	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60367582007	R-DUP-1	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60367582008	R-FB-1	SM 3500-Fe B#4	MAW	1	PASI-K		
		SM 4500-S-2 D	MAW	1	PASI-K		
		EPA 300.0	CRN2	3	PASI-K		
		EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JDE	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MAP	1	PASI-K		
		SM 2540C	LDB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	MAW	1	PASI-K		
		SM 4500-S-2 D	MAW	1	PASI-K		
		60367582009	R-MS-1	EPA 300.0	VRP	3	PASI-K
EPA 903.1	MK1			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
60367582010	R-MSD-1			EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA		
		60367582011	R-MW-7(r)	EPA 200.7	JLH	13	PASI-K
EPA 200.8	JGP			6	PASI-K		
EPA 7470	JDE			1	PASI-K		
EPA 903.1	SLC			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	LDB			1	PASI-K		
SM 2540C	LDB			1	PASI-K		
SM 3500-Fe B#4	LDB			1	PASI-K		
SM 3500-Fe B#4	MAW			1	PASI-K		
SM 4500-S-2 D	MAW			1	PASI-K		
60367582012	R-MW-B1			EPA 300.0	CRN2	3	PASI-K
				EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
				EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	LDB	1	PASI-K		
		SM 2540C	LDB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60367582013	R-MW-B2	SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	LDB	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-1 **Lab ID: 60367582001** Collected: 04/22/21 14:10 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	56.8	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 22:21	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 22:21	7440-41-7	
Boron	1800	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 22:21	7440-42-8	
Calcium	74800	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 22:21	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 22:21	7440-48-4	
Iron	43.0J	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 22:21	7439-89-6	
Lead	5.9J	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 22:21	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 22:21	7439-93-2	
Magnesium	12900	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 22:21	7439-95-4	
Manganese	67.0	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 22:21	7439-96-5	
Molybdenum	25.5	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 22:21	7439-98-7	
Potassium	7190	ug/L	500	146	1	05/10/21 09:56	05/13/21 22:21	7440-09-7	
Sodium	123000	ug/L	500	254	1	05/10/21 09:56	05/13/21 22:21	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.30J	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:19	7440-36-0	
Arsenic	4.1	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 17:26	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 17:26	7440-43-9	
Chromium	0.28J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 17:26	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 17:26	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 17:26	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 11:57	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	216	mg/L	20.0	7.5	1		05/05/21 17:50		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	730	mg/L	10.0	10.0	1		04/28/21 11:36		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.041J	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.048	mg/L	0.20	0.048	1		05/10/21 12:09		H6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-1 **Lab ID: 60367582001** Collected: 04/22/21 14:10 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/27/21 10:32	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	17.3	mg/L	1.0	0.39	1		04/29/21 06:28	16887-00-6	B
Fluoride	0.27	mg/L	0.20	0.086	1		04/29/21 06:28	16984-48-8	
Sulfate	346	mg/L	20.0	8.4	20		04/29/21 06:44	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-2 Lab ID: 60367582002 Collected: 04/22/21 11:14 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	7.8	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 22:23	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 22:23	7440-41-7	
Boron	5240	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 22:23	7440-42-8	
Calcium	8800	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 22:23	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 22:23	7440-48-4	
Iron	83.1	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 22:23	7439-89-6	
Lead	9.5J	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 22:23	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 22:23	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 22:23	7439-95-4	
Manganese	4.4J	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 22:23	7439-96-5	
Molybdenum	177	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 22:23	7439-98-7	
Potassium	2940	ug/L	500	146	1	05/10/21 09:56	05/13/21 22:23	7440-09-7	
Sodium	202000	ug/L	500	254	1	05/10/21 09:56	05/13/21 22:23	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	3.0	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:20	7440-36-0	
Arsenic	224	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 17:28	7440-38-2	
Cadmium	0.25J	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 17:28	7440-43-9	
Chromium	0.52J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 17:28	7440-47-3	B
Selenium	1.2	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 17:28	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 17:28	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 11:59	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	205	mg/L	20.0	7.5	1		05/05/21 17:54		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	750	mg/L	10.0	10.0	1		04/28/21 11:37		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.14J	mg/L	0.20	0.048	1		05/10/21 12:06		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-2 **Lab ID: 60367582002** Collected: 04/22/21 11:14 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	6.5	mg/L	0.50	0.26	10		04/27/21 10:36	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	30.4	mg/L	20.0	7.8	20		04/29/21 07:16	16887-00-6	B
Fluoride	0.99	mg/L	0.20	0.086	1		04/29/21 07:00	16984-48-8	
Sulfate	315	mg/L	20.0	8.4	20		04/29/21 07:16	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-3 **Lab ID: 60367582003** Collected: 04/23/21 10:45 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	22.1	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 22:26	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 22:26	7440-41-7	
Boron	14600	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 22:26	7440-42-8	
Calcium	7180	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 22:26	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 22:26	7440-48-4	
Iron	203	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 22:26	7439-89-6	
Lead	4.2J	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 22:26	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 22:26	7439-93-2	
Magnesium	345	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 22:26	7439-95-4	
Manganese	11.0	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 22:26	7439-96-5	
Molybdenum	789	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 22:26	7439-98-7	
Potassium	2050	ug/L	500	146	1	05/10/21 09:56	05/13/21 22:26	7440-09-7	
Sodium	237000	ug/L	500	254	1	05/10/21 09:56	05/13/21 22:26	7440-23-5	M1
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:22	7440-36-0	
Arsenic	34.2	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 17:30	7440-38-2	
Cadmium	0.13J	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 17:30	7440-43-9	
Chromium	0.79J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 17:30	7440-47-3	B
Selenium	0.73J	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 17:30	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 17:30	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 12:02	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	273	mg/L	20.0	7.5	1		05/05/21 18:51		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	540	mg/L	10.0	10.0	1		04/29/21 10:05		D6
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.33	mg/L	0.20	0.048	1		05/10/21 12:13		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-3 **Lab ID: 60367582003** Collected: 04/23/21 10:45 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.36	mg/L	0.050	0.026	1		04/27/21 11:10	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	29.0	mg/L	2.0	0.78	2		05/06/21 18:42	16887-00-6	M1
Fluoride	1.1	mg/L	0.20	0.086	1		05/06/21 17:07	16984-48-8	D6
Sulfate	245	mg/L	50.0	21.0	50		05/08/21 02:38	14808-79-8	M1

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-4 **Lab ID: 60367582004** Collected: 04/23/21 14:40 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	289	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 22:36	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 22:36	7440-41-7	
Boron	3160	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 22:36	7440-42-8	
Calcium	75200	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 22:36	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 22:36	7440-48-4	
Iron	5590	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 22:36	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 22:36	7439-92-1	
Lithium	36.4	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 22:36	7439-93-2	
Magnesium	15700	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 22:36	7439-95-4	
Manganese	313	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 22:36	7439-96-5	
Molybdenum	79.9	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 22:36	7439-98-7	
Potassium	5010	ug/L	500	146	1	05/10/21 09:56	05/13/21 22:36	7440-09-7	
Sodium	51100	ug/L	500	254	1	05/10/21 09:56	05/13/21 22:36	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:25	7440-36-0	
Arsenic	12.0	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 17:34	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 17:34	7440-43-9	
Chromium	0.46J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 17:34	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 17:34	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 17:34	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 12:13	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	328	mg/L	20.0	7.5	1		05/05/21 19:01		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	797	mg/L	10.0	10.0	1		04/29/21 10:05		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	5.0	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.56	mg/L	0.20	0.048	1		05/10/21 12:16		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-4 **Lab ID: 60367582004** Collected: 04/23/21 14:40 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/27/21 11:11	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	17.9	mg/L	1.0	0.39	1		04/29/21 07:31	16887-00-6	B
Fluoride	0.79	mg/L	0.20	0.086	1		04/29/21 07:31	16984-48-8	
Sulfate	29.7	mg/L	5.0	2.1	5		04/29/21 07:47	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-5 **Lab ID: 60367582005** Collected: 04/23/21 14:35 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	287	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 22:38	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 22:38	7440-41-7	
Boron	80.6J	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 22:38	7440-42-8	B
Calcium	105000	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 22:38	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 22:38	7440-48-4	
Iron	7330	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 22:38	7439-89-6	
Lead	4.9J	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 22:38	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 22:38	7439-93-2	
Magnesium	14500	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 22:38	7439-95-4	
Manganese	302	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 22:38	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 22:38	7439-98-7	
Potassium	1830	ug/L	500	146	1	05/10/21 09:56	05/13/21 22:38	7440-09-7	
Sodium	3870	ug/L	500	254	1	05/10/21 09:56	05/13/21 22:38	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:26	7440-36-0	
Arsenic	1.9	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 17:36	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 17:36	7440-43-9	
Chromium	0.27J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 17:36	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 17:36	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 17:36	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 12:15	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	336	mg/L	20.0	7.5	1		05/05/21 19:07		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	765	mg/L	10.0	10.0	1		04/29/21 10:06		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.1	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.25	mg/L	0.20	0.048	1		05/10/21 12:16		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-5 **Lab ID: 60367582005** Collected: 04/23/21 14:35 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.044J	mg/L	0.050	0.026	1		04/27/21 11:11	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	3.7	mg/L	1.0	0.39	1		04/29/21 08:03	16887-00-6	B
Fluoride	0.19J	mg/L	0.20	0.086	1		04/29/21 08:03	16984-48-8	
Sulfate	13.6	mg/L	1.0	0.42	1		04/29/21 08:03	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-6 Lab ID: 60367582006 Collected: 04/22/21 13:40 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	144	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 22:48	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 22:48	7440-41-7	
Boron	1000	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 22:48	7440-42-8	
Calcium	83500	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 22:48	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 22:48	7440-48-4	
Iron	1060	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 22:48	7439-89-6	
Lead	6.0J	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 22:48	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 22:48	7439-93-2	
Magnesium	12800	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 22:48	7439-95-4	
Manganese	211	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 22:48	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 22:48	7439-98-7	
Potassium	1740	ug/L	500	146	1	05/10/21 09:56	05/13/21 22:48	7440-09-7	
Sodium	15000	ug/L	500	254	1	05/10/21 09:56	05/13/21 22:48	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:28	7440-36-0	
Arsenic	4.4	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 17:38	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 17:38	7440-43-9	
Chromium	0.46J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 17:38	7440-47-3	B
Selenium	0.32J	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 17:38	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 17:38	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 12:18	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	267	mg/L	20.0	7.5	1		05/05/21 17:59		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	331	mg/L	5.0	5.0	1		04/28/21 11:37		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	1.0	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.058J	mg/L	0.20	0.048	1		05/10/21 12:08		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-6 **Lab ID: 60367582006** Collected: 04/22/21 13:40 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/27/21 10:39	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	5.7	mg/L	1.0	0.39	1		04/29/21 08:51	16887-00-6	B
Fluoride	0.29	mg/L	0.20	0.086	1		04/29/21 08:51	16984-48-8	
Sulfate	19.6	mg/L	1.0	0.42	1		04/29/21 08:51	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA
Pace Project No.: 60367582

Sample: R-DUP-1 **Lab ID: 60367582007** Collected: 04/22/21 00:00 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	787	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 22:50	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 22:50	7440-41-7	
Boron	706	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 22:50	7440-42-8	
Calcium	92100	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 22:50	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 22:50	7440-48-4	
Iron	29300	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 22:50	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 22:50	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 22:50	7439-93-2	
Magnesium	13400	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 22:50	7439-95-4	
Manganese	272	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 22:50	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 22:50	7439-98-7	
Potassium	1690	ug/L	500	146	1	05/10/21 09:56	05/13/21 22:50	7440-09-7	
Sodium	12600	ug/L	500	254	1	05/10/21 09:56	05/13/21 22:50	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:33	7440-36-0	
Arsenic	36.9	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 17:44	7440-38-2	
Cadmium	0.24J	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 17:44	7440-43-9	
Chromium	3.0	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 17:44	7440-47-3	B
Selenium	0.62J	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 17:44	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 17:44	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 12:20	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	268	mg/L	20.0	7.5	1		05/05/21 18:05		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	312	mg/L	5.0	5.0	1		04/28/21 11:37		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	29.0	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	0.31	mg/L	0.20	0.048	1		05/10/21 12:04		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-DUP-1 **Lab ID: 60367582007** Collected: 04/22/21 00:00 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	0.044J	mg/L	0.050	0.026	1		04/27/21 10:43	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	5.1	mg/L	1.0	0.39	1		04/29/21 09:23	16887-00-6	B
Fluoride	0.28	mg/L	0.20	0.086	1		04/29/21 09:23	16984-48-8	
Sulfate	20.7	mg/L	2.0	0.84	2		04/29/21 09:38	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-FB-1 Lab ID: 60367582008 Collected: 04/22/21 15:00 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<1.8	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 22:53	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 22:53	7440-41-7	
Boron	10.0J	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 22:53	7440-42-8	B
Calcium	<75.4	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 22:53	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 22:53	7440-48-4	
Iron	<21.4	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 22:53	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 22:53	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 22:53	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 22:53	7439-95-4	
Manganese	<0.74	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 22:53	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 22:53	7439-98-7	
Potassium	<146	ug/L	500	146	1	05/10/21 09:56	05/13/21 22:53	7440-09-7	
Sodium	<254	ug/L	500	254	1	05/10/21 09:56	05/13/21 22:53	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:31	7440-36-0	
Arsenic	<0.11	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 17:43	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 17:43	7440-43-9	
Chromium	<0.23	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 17:43	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 17:43	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 17:43	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 12:22	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<7.5	mg/L	20.0	7.5	1		05/05/21 18:10		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	311	mg/L	5.0	5.0	1		04/29/21 10:13		D6
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.010J	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.048	mg/L	0.20	0.048	1		05/10/21 12:09		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-FB-1 **Lab ID: 60367582008** Collected: 04/22/21 15:00 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/27/21 10:44	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	0.50J	mg/L	1.0	0.39	1		05/06/21 20:49	16887-00-6	B
Fluoride	<0.086	mg/L	0.20	0.086	1		05/06/21 20:49	16984-48-8	
Sulfate	<0.42	mg/L	1.0	0.42	1		05/06/21 20:49	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-7(r) **Lab ID: 60367582011** Collected: 04/26/21 10:59 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	213	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 23:30	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 23:30	7440-41-7	
Boron	2420	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 23:30	7440-42-8	
Calcium	67500	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 23:30	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 23:30	7440-48-4	
Iron	10100	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 23:30	7439-89-6	
Lead	4.6J	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 23:30	7439-92-1	
Lithium	28.0	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 23:30	7439-93-2	
Magnesium	20400	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 23:30	7439-95-4	
Manganese	307	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 23:30	7439-96-5	
Molybdenum	80.3	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 23:30	7439-98-7	
Potassium	5370	ug/L	500	146	1	05/10/21 09:56	05/13/21 23:30	7440-09-7	
Sodium	30200	ug/L	500	254	1	05/10/21 09:56	05/13/21 23:30	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:47	7440-36-0	
Arsenic	117	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 18:04	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 18:04	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 18:04	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 18:04	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 18:04	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/13/21 17:27	05/16/21 11:40	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	286	mg/L	20.0	7.5	1		05/07/21 11:45		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	316	mg/L	5.0	5.0	1		04/29/21 10:11		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	9.6	mg/L	0.050		1		05/17/21 11:39	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.51	mg/L	0.20	0.048	1		05/10/21 12:17		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-7(r) **Lab ID: 60367582011** Collected: 04/26/21 10:59 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/28/21 10:59	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	8.6	mg/L	1.0	0.39	1		05/07/21 23:07	16887-00-6	
Fluoride	0.33	mg/L	0.20	0.086	1		05/07/21 23:07	16984-48-8	
Sulfate	24.7	mg/L	5.0	2.1	5		05/07/21 23:23	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-B1 **Lab ID: 60367582012** Collected: 04/26/21 13:52 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	434	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 23:33	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 23:33	7440-41-7	
Boron	103	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 23:33	7440-42-8	B
Calcium	137000	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 23:33	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 23:33	7440-48-4	
Iron	22100	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 23:33	7439-89-6	
Lead	6.9J	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 23:33	7439-92-1	
Lithium	47.4	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 23:33	7439-93-2	
Magnesium	44200	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 23:33	7439-95-4	
Manganese	1170	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 23:33	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 23:33	7439-98-7	
Potassium	8360	ug/L	500	146	1	05/10/21 09:56	05/13/21 23:33	7440-09-7	
Sodium	27600	ug/L	500	254	1	05/10/21 09:56	05/13/21 23:33	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:48	7440-36-0	
Arsenic	23.3	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 18:06	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 18:06	7440-43-9	
Chromium	0.27J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 18:06	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 18:06	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 18:06	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/13/21 17:27	05/16/21 11:42	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	478	mg/L	20.0	7.5	1		05/07/21 11:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	391	mg/L	10.0	10.0	1		04/29/21 10:11		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	21.6	mg/L	0.050		1		05/17/21 11:39	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	0.50	mg/L	0.20	0.048	1		05/10/21 12:18		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-B1 **Lab ID: 60367582012** Collected: 04/26/21 13:52 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/28/21 11:00	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	82.2	mg/L	5.0	1.9	5		05/08/21 00:11	16887-00-6	
Fluoride	0.20	mg/L	0.20	0.086	1		05/07/21 23:55	16984-48-8	
Sulfate	37.3	mg/L	5.0	2.1	5		05/08/21 00:11	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-B2 **Lab ID: 60367582013** Collected: 04/26/21 11:30 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	375	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 23:35	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 23:35	7440-41-7	
Boron	44.9J	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 23:35	7440-42-8	B
Calcium	102000	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 23:35	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 23:35	7440-48-4	
Iron	9000	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 23:35	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 23:35	7439-92-1	
Lithium	9.7J	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 23:35	7439-93-2	
Magnesium	18500	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 23:35	7439-95-4	
Manganese	231	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 23:35	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 23:35	7439-98-7	
Potassium	1730	ug/L	500	146	1	05/10/21 09:56	05/13/21 23:35	7440-09-7	
Sodium	14600	ug/L	500	254	1	05/10/21 09:56	05/13/21 23:35	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:50	7440-36-0	
Arsenic	3.6	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 18:08	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 18:08	7440-43-9	
Chromium	0.29J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 18:08	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 18:08	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 18:08	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/13/21 17:27	05/16/21 11:44	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	356	mg/L	20.0	7.5	1		05/07/21 12:02		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	682	mg/L	10.0	10.0	1		04/29/21 10:12		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	8.8	mg/L	0.050		1		05/17/21 11:39	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.24	mg/L	0.20	0.048	1		05/10/21 12:17		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-B2 **Lab ID: 60367582013** Collected: 04/26/21 11:30 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/28/21 11:00	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	21.3	mg/L	5.0	1.9	5		05/08/21 00:42	16887-00-6	
Fluoride	0.22	mg/L	0.20	0.086	1		05/08/21 00:27	16984-48-8	
Sulfate	9.4	mg/L	1.0	0.42	1		05/08/21 00:27	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch: 719267

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60367582001, 60367582002, 60367582003, 60367582004, 60367582005, 60367582006, 60367582007, 60367582008

METHOD BLANK: 2892529

Matrix: Water

Associated Lab Samples: 60367582001, 60367582002, 60367582003, 60367582004, 60367582005, 60367582006, 60367582007, 60367582008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	05/14/21 11:53	

LABORATORY CONTROL SAMPLE: 2892530

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: 2892531 2892532

Parameter	Units	60367582003		2892531		2892532		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec				
Mercury	ug/L	<0.096	5	5	4.8	4.8	96	94	75-125	2	20

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch: 719627	Analysis Method: EPA 7470
QC Batch Method: EPA 7470	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60367582011, 60367582012, 60367582013

METHOD BLANK: 2893785 Matrix: Water
Associated Lab Samples: 60367582011, 60367582012, 60367582013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	05/16/21 11:28	

LABORATORY CONTROL SAMPLE: 2893786

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893787 2893788

Parameter	Units	60366962033		2893787		2893788		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result				
Mercury	ug/L	<0.096	5	5	4.6	4.7	92	93	75-125	2	20

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA
Pace Project No.: 60367582

QC Batch: 719402 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: 60367582001, 60367582002, 60367582003, 60367582004, 60367582005, 60367582006, 60367582007, 60367582008, 60367582011, 60367582012, 60367582013

METHOD BLANK: 2893278 Matrix: Water
Associated Lab Samples: 60367582001, 60367582002, 60367582003, 60367582004, 60367582005, 60367582006, 60367582007, 60367582008, 60367582011, 60367582012, 60367582013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/13/21 22:07	
Beryllium	ug/L	<0.39	1.0	0.39	05/13/21 22:07	
Boron	ug/L	11.4J	100	8.6	05/13/21 22:07	
Calcium	ug/L	<75.4	200	75.4	05/13/21 22:07	
Cobalt	ug/L	<0.95	5.0	0.95	05/13/21 22:07	
Iron	ug/L	<21.4	50.0	21.4	05/13/21 22:07	
Lead	ug/L	<3.8	10.0	3.8	05/13/21 22:07	
Lithium	ug/L	<7.7	10.0	7.7	05/13/21 22:07	
Magnesium	ug/L	<31.4	50.0	31.4	05/13/21 22:07	
Manganese	ug/L	<0.74	5.0	0.74	05/13/21 22:07	
Molybdenum	ug/L	<2.2	20.0	2.2	05/13/21 22:07	
Potassium	ug/L	<146	500	146	05/13/21 22:07	
Sodium	ug/L	<254	500	254	05/13/21 22:07	

LABORATORY CONTROL SAMPLE: 2893279

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	967	97	85-115	
Beryllium	ug/L	1000	981	98	85-115	
Boron	ug/L	1000	958	96	85-115	
Calcium	ug/L	10000	9660	97	85-115	
Cobalt	ug/L	1000	980	98	85-115	
Iron	ug/L	10000	9540	95	85-115	
Lead	ug/L	1000	1030	103	85-115	
Lithium	ug/L	1000	997	100	85-115	
Magnesium	ug/L	10000	9870	99	85-115	
Manganese	ug/L	1000	1000	100	85-115	
Molybdenum	ug/L	1000	992	99	85-115	
Potassium	ug/L	10000	9820	98	85-115	
Sodium	ug/L	10000	9620	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893280 2893281

Parameter	Units	60367582003 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Barium	ug/L	22.1	1000	1000	976	968	95	95	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893280												2893281	
Parameter	Units	60367582003 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Beryllium	ug/L	<0.39	1000	1000	985	970	98	97	70-130	1	20		
Boron	ug/L	14600	1000	1000	15400	15300	84	74	70-130	1	20		
Calcium	ug/L	7180	10000	10000	16500	16400	93	92	70-130	1	20		
Cobalt	ug/L	<0.95	1000	1000	962	949	96	95	70-130	1	20		
Iron	ug/L	203	10000	10000	9700	9540	95	93	70-130	2	20		
Lead	ug/L	4.2J	1000	1000	990	973	99	97	70-130	2	20		
Lithium	ug/L	<7.7	1000	1000	965	953	96	95	70-130	1	20		
Magnesium	ug/L	345	10000	10000	9860	9700	95	94	70-130	2	20		
Manganese	ug/L	11.0	1000	1000	1000	983	99	97	70-130	2	20		
Molybdenum	ug/L	789	1000	1000	1770	1760	98	97	70-130	1	20		
Potassium	ug/L	2050	10000	10000	11800	11600	97	96	70-130	1	20		
Sodium	ug/L	237000	10000	10000	242000	240000	57	36	70-130	1	20 M1		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893282												2893283	
Parameter	Units	60367583001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Barium	ug/L	166	1000	1000	1110	1100	94	93	70-130	1	20		
Beryllium	ug/L	<0.39	1000	1000	966	958	97	96	70-130	1	20		
Boron	ug/L	4240	1000	1000	5140	5110	89	86	70-130	1	20		
Calcium	ug/L	62800	10000	10000	70900	70200	81	73	70-130	1	20		
Cobalt	ug/L	<0.95	1000	1000	928	922	93	92	70-130	1	20		
Iron	ug/L	8720	10000	10000	17600	17400	89	87	70-130	1	20		
Lead	ug/L	4.1J	1000	1000	973	965	97	96	70-130	1	20		
Lithium	ug/L	13.9	1000	1000	961	958	95	94	70-130	0	20		
Magnesium	ug/L	21700	10000	10000	30800	30400	90	87	70-130	1	20		
Manganese	ug/L	353	1000	1000	1300	1290	95	94	70-130	1	20		
Molybdenum	ug/L	9.2J	1000	1000	980	975	97	97	70-130	1	20		
Potassium	ug/L	5470	10000	10000	15100	15000	96	95	70-130	1	20		
Sodium	ug/L	25600	10000	10000	34100	33800	84	82	70-130	1	20		

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA
Pace Project No.: 60367582

QC Batch: 719408 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: 60367582001, 60367582002, 60367582003, 60367582004, 60367582005, 60367582006, 60367582007, 60367582008, 60367582011, 60367582012, 60367582013

METHOD BLANK: 2893284 Matrix: Water
Associated Lab Samples: 60367582001, 60367582002, 60367582003, 60367582004, 60367582005, 60367582006, 60367582007, 60367582008, 60367582011, 60367582012, 60367582013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.10	1.0	0.10	06/02/21 08:17	
Arsenic	ug/L	<0.11	1.0	0.11	06/01/21 17:23	
Cadmium	ug/L	<0.062	0.50	0.062	06/01/21 17:23	
Chromium	ug/L	0.44J	1.0	0.23	06/01/21 17:23	
Selenium	ug/L	<0.18	1.0	0.18	06/01/21 17:23	
Thallium	ug/L	<0.094	1.0	0.094	06/01/21 17:23	

LABORATORY CONTROL SAMPLE: 2893285

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	43.0	107	85-115	
Arsenic	ug/L	40	41.8	104	85-115	
Cadmium	ug/L	40	42.1	105	85-115	
Chromium	ug/L	40	42.8	107	85-115	
Selenium	ug/L	40	42.7	107	85-115	
Thallium	ug/L	40	39.1	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893286 2893287

Parameter	Units	60367582003		MSD		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result							
Antimony	ug/L	<0.10	40	40	42.3	41.4	106	103	70-130	2	20			
Arsenic	ug/L	34.2	40	40	74.3	74.7	100	101	70-130	1	20			
Cadmium	ug/L	0.13J	40	40	40.2	39.8	100	99	70-130	1	20			
Chromium	ug/L	0.79J	40	40	41.3	40.9	101	100	70-130	1	20			
Selenium	ug/L	0.73J	40	40	38.2	38.0	94	93	70-130	1	20			
Thallium	ug/L	<0.094	40	40	42.1	41.6	105	104	70-130	1	20			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893288 2893289

Parameter	Units	60367583001		MSD		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result							
Antimony	ug/L	<0.10	40	40	41.7	42.2	104	105	70-130	1	20			
Arsenic	ug/L	157	40	40	186	194	72	94	70-130	5	20			

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893288												2893289											
Parameter	Units	60367583001		MS	MSD	MS		MSD		% Rec Limits	RPD	Max RPD	Qual										
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec														
Cadmium	ug/L	<0.062	40	40	40	38.8	40.1	97	100	70-130	3	20											
Chromium	ug/L	0.44J	40	40	40	40.3	41.7	100	103	70-130	3	20											
Selenium	ug/L	<0.18	40	40	40	38.8	39.5	97	98	70-130	2	20											
Thallium	ug/L	<0.094	40	40	40	38.6	40.1	96	100	70-130	4	20											

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch:	718561	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60367582001, 60367582002, 60367582003, 60367582004, 60367582005, 60367582006, 60367582007, 60367582008

METHOD BLANK: 2889949 Matrix: Water

Associated Lab Samples: 60367582001, 60367582002, 60367582003, 60367582004, 60367582005, 60367582006, 60367582007, 60367582008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<7.5	20.0	7.5	05/05/21 17:28	

LABORATORY CONTROL SAMPLE: 2889950

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

SAMPLE DUPLICATE: 2889951

Parameter	Units	60367534001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	380	395	4	10	

SAMPLE DUPLICATE: 2889952

Parameter	Units	60367582003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	273	280	2	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch: 719072	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60367582011, 60367582012, 60367582013

METHOD BLANK: 2891852 Matrix: Water

Associated Lab Samples: 60367582011, 60367582012, 60367582013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<7.5	20.0	7.5	05/07/21 11:22	

LABORATORY CONTROL SAMPLE: 2891853

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	498	100	90-110	

SAMPLE DUPLICATE: 2891854

Parameter	Units	60367582011 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	286	307	7	10	

SAMPLE DUPLICATE: 2891855

Parameter	Units	60368573004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	501	497	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch: 717180	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60367582001, 60367582002, 60367582006, 60367582007

METHOD BLANK: 2884921 Matrix: Water
Associated Lab Samples: 60367582001, 60367582002, 60367582006, 60367582007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/28/21 11:31	

LABORATORY CONTROL SAMPLE: 2884922

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

SAMPLE DUPLICATE: 2884923

Parameter	Units	60367383017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	321	303	6	10	

SAMPLE DUPLICATE: 2884924

Parameter	Units	60367513003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	577	599	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA
Pace Project No.: 60367582

QC Batch: 717397	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60367582008

METHOD BLANK: 2885502 Matrix: Water
Associated Lab Samples: 60367582008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/29/21 10:13	

LABORATORY CONTROL SAMPLE: 2885503

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 2885504

Parameter	Units	60367582008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	311	243	25	10	D6

SAMPLE DUPLICATE: 2885505

Parameter	Units	60367583013 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	0	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch:	717531	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60367582003, 60367582004, 60367582005, 60367582011, 60367582012, 60367582013

METHOD BLANK: 2885879 Matrix: Water

Associated Lab Samples: 60367582003, 60367582004, 60367582005, 60367582011, 60367582012, 60367582013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/29/21 10:02	

LABORATORY CONTROL SAMPLE: 2885880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 2885881

Parameter	Units	60367582003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	540	683	23	10	D6

SAMPLE DUPLICATE: 2885882

Parameter	Units	60367583016 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	385	372	3	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch:	718252	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: 60367582001, 60367582002, 60367582006, 60367582007, 60367582008

METHOD BLANK: 2888724 Matrix: Water
Associated Lab Samples: 60367582001, 60367582002, 60367582006, 60367582007, 60367582008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.048	0.20	0.048	05/10/21 12:02	H6

LABORATORY CONTROL SAMPLE: 2888725

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.0	102	90-110	H6

SAMPLE DUPLICATE: 2888726

Parameter	Units	60367051015 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.36	0.37	2	20	H6

SAMPLE DUPLICATE: 2888727

Parameter	Units	60367583001 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	1.0	1.1	4	20	H6

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch:	718253	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: 60367582003, 60367582004, 60367582005, 60367582011, 60367582012, 60367582013

METHOD BLANK: 2888728 Matrix: Water
Associated Lab Samples: 60367582003, 60367582004, 60367582005, 60367582011, 60367582012, 60367582013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.048	0.20	0.048	05/10/21 12:11	H6

LABORATORY CONTROL SAMPLE: 2888729

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.0	102	90-110	H6

SAMPLE DUPLICATE: 2888730

Parameter	Units	60367583016 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.25	0.24	3	20	H6

SAMPLE DUPLICATE: 2888731

Parameter	Units	60367582003 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.33	0.33	1	20	H6

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch: 716875	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: 60367582001, 60367582002

METHOD BLANK: 2884002 Matrix: Water

Associated Lab Samples: 60367582001, 60367582002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.026	0.050	0.026	04/27/21 10:12	

LABORATORY CONTROL SAMPLE: 2884003

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.54	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2884004 2884005

Parameter	Units	60366962027		60366962032		60366962033		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Sulfide, Total	mg/L	0.032J	0.5	0.5	0.53	0.52	99	98	75-125	1	20

SAMPLE DUPLICATE: 2884006

Parameter	Units	60366962032 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.026	<0.026		20	

SAMPLE DUPLICATE: 2884007

Parameter	Units	60366962033 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.026	<0.026		20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA
Pace Project No.: 60367582

QC Batch: 716876 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: 60367582003, 60367582004, 60367582005, 60367582006, 60367582007, 60367582008

METHOD BLANK: 2884010 Matrix: Water
Associated Lab Samples: 60367582003, 60367582004, 60367582005, 60367582006, 60367582007, 60367582008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.026	0.050	0.026	04/27/21 10:39	

LABORATORY CONTROL SAMPLE: 2884011

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.53	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2884012 2884013

Parameter	Units	60367582006		2884012		2884013		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Sulfide, Total	mg/L	<0.026	0.5	0.5	0.53	0.50	102	97	75-125	6	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2884015 2884016

Parameter	Units	60367583001		2884015		2884016		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Sulfide, Total	mg/L	0.033J	0.5	0.5	0.55	0.56	104	106	75-125	2	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2884019 2884020

Parameter	Units	60367582003		2884019		2884020		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Sulfide, Total	mg/L	0.36	0.5	0.5	0.76	0.76	81	80	75-125	0	20		

SAMPLE DUPLICATE: 2884014

Parameter	Units	60367582007 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.044J	0.043J		20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

SAMPLE DUPLICATE: 2884017

Parameter	Units	60367583001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.033J	0.033J		20	

SAMPLE DUPLICATE: 2884018

Parameter	Units	60367583008 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	5.0	5.1	3	20	

SAMPLE DUPLICATE: 2884021

Parameter	Units	60367582003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.36	0.35	2	20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch:	717193	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: 60367582011, 60367582012, 60367582013

METHOD BLANK: 2884971 Matrix: Water

Associated Lab Samples: 60367582011, 60367582012, 60367582013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.026	0.050	0.026	04/28/21 10:38	

LABORATORY CONTROL SAMPLE: 2884972

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.54	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2884973 2884974

Parameter	Units	60366935001		60367583015		60367583015		60367583015		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Sulfide, Total	mg/L	0.39	0.5	0.90	0.5	0.89	0.5	100	100	75-125	0	20	H1

SAMPLE DUPLICATE: 2884975

Parameter	Units	60367583015 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.026	<0.026		20	

SAMPLE DUPLICATE: 2884976

Parameter	Units	60367656004 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.026		20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch:	716978	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: 60367582001, 60367582002, 60367582004, 60367582005, 60367582006, 60367582007

METHOD BLANK: 2884377 Matrix: Water
Associated Lab Samples: 60367582001, 60367582002, 60367582004, 60367582005, 60367582006, 60367582007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	04/28/21 16:59	
Fluoride	mg/L	<0.086	0.20	0.086	04/28/21 16:59	
Sulfate	mg/L	<0.42	1.0	0.42	04/28/21 16:59	

METHOD BLANK: 2887096 Matrix: Water
Associated Lab Samples: 60367582001, 60367582002, 60367582004, 60367582005, 60367582006, 60367582007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	4.9J	10.0	3.9	04/29/21 11:19	
Fluoride	mg/L	<0.86	2.0	0.86	04/29/21 11:19	
Sulfate	mg/L	<4.2	10.0	4.2	04/29/21 11:19	

LABORATORY CONTROL SAMPLE: 2884378

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	99	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	4.9	99	90-110	

LABORATORY CONTROL SAMPLE: 2887097

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	2.6	104	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2884379 2884380

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60366962021 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	4.6	5	5	9.3	9.3	94	93	80-120	0	15		
Fluoride	mg/L	0.22	2.5	2.5	2.7	2.7	100	99	80-120	1	15		
Sulfate	mg/L	11.7	5	5	16.8	16.7	102	99	80-120	1	15		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

MATRIX SPIKE SAMPLE: 2884382

Parameter	Units	60367347001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	22.1	25	46.1	96	80-120	
Fluoride	mg/L	0.41	2.5	2.9	99	80-120	
Sulfate	mg/L	2500	2000	4540	102	80-120	

SAMPLE DUPLICATE: 2884381

Parameter	Units	60366962021 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	4.6	4.6	0	15	
Fluoride	mg/L	0.22	0.23	4	15	
Sulfate	mg/L	11.7	11.9	1	15	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch: 718359	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: 60367582003, 60367582008

METHOD BLANK: 2889292 Matrix: Water

Associated Lab Samples: 60367582003, 60367582008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/06/21 08:59	
Fluoride	mg/L	<0.086	0.20	0.086	05/06/21 08:59	
Sulfate	mg/L	<0.42	1.0	0.42	05/06/21 08:59	

METHOD BLANK: 2894180 Matrix: Water

Associated Lab Samples: 60367582003, 60367582008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/07/21 08:25	
Fluoride	mg/L	<0.086	0.20	0.086	05/07/21 08:25	
Sulfate	mg/L	<0.42	1.0	0.42	05/07/21 08:25	

METHOD BLANK: 2894374 Matrix: Water

Associated Lab Samples: 60367582003, 60367582008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.66J	1.0	0.39	05/11/21 07:30	
Fluoride	mg/L	<0.086	0.20	0.086	05/11/21 07:30	
Sulfate	mg/L	<0.42	1.0	0.42	05/11/21 07:30	

LABORATORY CONTROL SAMPLE: 2889293

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.0	101	90-110	

LABORATORY CONTROL SAMPLE: 2894181

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	103	90-110	
Fluoride	mg/L	2.5	2.6	106	90-110	
Sulfate	mg/L	5	4.9	99	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

LABORATORY CONTROL SAMPLE: 2894375

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	2.4	97	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2889294 2889295

Parameter	Units	60367582003		MS		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	29.0	10	10	41.6	40.8	126	118	80-120	2	15	E, M1	
Fluoride	mg/L	1.1	2.5	2.5	3.7	3.8	107	108	80-120	0	15		
Sulfate	mg/L	245	250	250	643	554	159	124	80-120	15	15	M1	

MATRIX SPIKE SAMPLE: 2889297

Parameter	Units	60367583005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	23.3	10	35.4	121	80-120	M1
Fluoride	mg/L	2.0	2.5	4.9	116	80-120	
Sulfate	mg/L	291	100	399	108	80-120	

SAMPLE DUPLICATE: 2889296

Parameter	Units	60367582003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	29.0	28.6	1	15	
Fluoride	mg/L	1.1	0.72	38	15	D6
Sulfate	mg/L	245	252	3	15	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch:	718360	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: 60367582011, 60367582012, 60367582013

METHOD BLANK: 2889298 Matrix: Water
Associated Lab Samples: 60367582011, 60367582012, 60367582013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/07/21 11:54	
Fluoride	mg/L	<0.086	0.20	0.086	05/07/21 11:54	
Sulfate	mg/L	<0.42	1.0	0.42	05/07/21 11:54	

METHOD BLANK: 2896324 Matrix: Water
Associated Lab Samples: 60367582011, 60367582012, 60367582013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/11/21 07:30	
Fluoride	mg/L	<0.086	0.20	0.086	05/11/21 07:30	
Sulfate	mg/L	<0.42	1.0	0.42	05/11/21 07:30	

LABORATORY CONTROL SAMPLE: 2889299

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	2.3	93	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 2896325

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	2.5	100	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2889301 2889302

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60367583001 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	23.1	25	25	25	46.8	49.4	95	105	80-120	5	15	
Fluoride	mg/L	0.38	2.5	2.5	2.5	3.5	2.7	125	91	80-120	27	15	M1, R1
Sulfate	mg/L	15.8	25	25	25	39.3	42.0	94	105	80-120	7	15	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

MATRIX SPIKE SAMPLE: 2889303		60368243002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	696	500	1200	100	80-120	
Fluoride	mg/L	ND	250	267	102	80-120	
Sulfate	mg/L	555	500	1070	102	80-120	

SAMPLE DUPLICATE: 2889300

SAMPLE DUPLICATE: 2889300		60367583001	Dup	RPD	Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Chloride	mg/L	23.1	22.9	1	15	
Fluoride	mg/L	0.38	0.39	3	15	
Sulfate	mg/L	15.8	15.6	1	15	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-1 **Lab ID: 60367582001** Collected: 04/22/21 14:10 Received: 04/24/21 03:10 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	0.000 ± 0.499 (1.02) C:NA T:91%	pCi/L	05/24/21 13:05	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.373 ± 0.494 (1.06) C:58% T:92%	pCi/L	05/21/21 11:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-2 **Lab ID: 60367582002** Collected: 04/22/21 11:14 Received: 04/24/21 03:10 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	0.218 ± 0.499 (0.804) C:NA T:91%	pCi/L	05/24/21 13:05	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	-0.493 ± 1.27 (2.97) C:56% T:47%	pCi/L	05/21/21 11:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-3 **Lab ID: 60367582003** Collected: 04/23/21 10:45 Received: 04/24/21 03:10 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	0.209 ± 0.478 (0.770) C:NA T:91%	pCi/L	05/24/21 13:05	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.454 ± 0.538 (1.12) C:59% T:83%	pCi/L	05/21/21 14:18	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-4 **Lab ID: 60367582004** Collected: 04/23/21 14:40 Received: 04/24/21 03:10 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	0.0651 ± 0.556 (1.08) C:NA T:96%	pCi/L	05/24/21 13:05	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.29 ± 0.599 (1.02) C:59% T:87%	pCi/L	05/21/21 14:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-5 **Lab ID: 60367582005** Collected: 04/23/21 14:35 Received: 04/24/21 03:10 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	0.366 ± 0.380 (0.566) C:NA T:97%	pCi/L	05/24/21 13:05	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.285 ± 0.454 (0.985) C:60% T:92%	pCi/L	05/21/21 14:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-6 **Lab ID: 60367582006** Collected: 04/22/21 13:40 Received: 04/24/21 03:10 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	0.306 ± 0.281 (0.166) C:NA T:93%	pCi/L	05/24/21 13:05	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.42 ± 0.603 (0.969) C:57% T:88%	pCi/L	05/21/21 14:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-DUP-1 **Lab ID: 60367582007** Collected: 04/22/21 00:00 Received: 04/24/21 03:10 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	0.641 ± 0.669 (1.07) C:NA T:94%	pCi/L	05/24/21 13:05	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.30 ± 0.603 (1.05) C:67% T:88%	pCi/L	05/21/21 15:20	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-FB-1 **Lab ID: 60367582008** Collected: 04/22/21 15:00 Received: 04/24/21 03:10 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	0.133 ± 0.319 (0.616) C:NA T:92%	pCi/L	05/24/21 13:31	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.0226 ± 0.412 (0.960) C:63% T:88%	pCi/L	05/21/21 14:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MS-1 **Lab ID: 60367582009** Collected: 04/23/21 10:45 Received: 04/24/21 03:10 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	92.18 %REC ± NA (NA) C:NA T:NA	pCi/L	05/24/21 13:19	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	89.04 %REC ± NA (NA) C:NA T:NA	pCi/L	05/21/21 14:52	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MSD-1 **Lab ID: 60367582010** Collected: 04/23/21 10:45 Received: 04/24/21 03:10 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	115.84 %REC 22.75 RPD ± NA (NA) C:NA T:NA	pCi/L	05/24/21 13:19	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	99.28 %REC 10.87 RPD ± NA (NA) C:NA T:NA	pCi/L	05/21/21 14:52	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: R-MW-7(r) Lab ID: 60367582011 Collected: 04/26/21 10:59 Received: 04/27/21 03:43 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.301 ± 0.393 (0.648) C:NA T:93%	pCi/L	05/24/21 12:42	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.328 ± 0.386 (0.813) C:73% T:90%	pCi/L	05/21/21 14:27	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-B1 **Lab ID: 60367582012** Collected: 04/26/21 13:52 Received: 04/27/21 03:43 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	0.306 ± 0.399 (0.658) C:NA T:98%	pCi/L	05/24/21 12:42	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.710 ± 0.410 (0.748) C:75% T:90%	pCi/L	05/21/21 14:27	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Sample: R-MW-B2 **Lab ID: 60367582013** Collected: 04/26/21 11:30 Received: 04/27/21 03:43 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	0.326 ± 0.478 (0.815) C:NA T:104%	pCi/L	05/24/21 12:42	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.465 ± 0.399 (0.796) C:74% T:85%	pCi/L	05/21/21 14:27	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch: 446788

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: 60367582011, 60367582012, 60367582013

METHOD BLANK: 2156069

Matrix: Water

Associated Lab Samples: 60367582011, 60367582012, 60367582013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.418 ± 0.437 (0.684) C:NA T:92%	pCi/L	05/24/21 12:09	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch: 446787

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: 60367582011, 60367582012, 60367582013

METHOD BLANK: 2156067

Matrix: Water

Associated Lab Samples: 60367582011, 60367582012, 60367582013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.850 ± 0.368 (0.565) C:75% T:88%	pCi/L	05/21/21 11:15	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

QC Batch: 447251

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: 60367582001, 60367582002, 60367582003, 60367582004, 60367582005, 60367582006, 60367582007, 60367582008, 60367582009, 60367582010

METHOD BLANK: 2158465

Matrix: Water

Associated Lab Samples: 60367582001, 60367582002, 60367582003, 60367582004, 60367582005, 60367582006, 60367582007, 60367582008, 60367582009, 60367582010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.286 ± 0.351 (0.572) C:NA T:92%	pCi/L	05/24/21 13:05	

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QUALIFIERS

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

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.

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

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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

H1 Analysis conducted outside the EPA method holding time.

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.

R1 RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60367582001	R-MW-1	EPA 200.7	719402	EPA 200.7	719547
60367582002	R-MW-2	EPA 200.7	719402	EPA 200.7	719547
60367582003	R-MW-3	EPA 200.7	719402	EPA 200.7	719547
60367582004	R-MW-4	EPA 200.7	719402	EPA 200.7	719547
60367582005	R-MW-5	EPA 200.7	719402	EPA 200.7	719547
60367582006	R-MW-6	EPA 200.7	719402	EPA 200.7	719547
60367582007	R-DUP-1	EPA 200.7	719402	EPA 200.7	719547
60367582008	R-FB-1	EPA 200.7	719402	EPA 200.7	719547
60367582011	R-MW-7(r)	EPA 200.7	719402	EPA 200.7	719547
60367582012	R-MW-B1	EPA 200.7	719402	EPA 200.7	719547
60367582013	R-MW-B2	EPA 200.7	719402	EPA 200.7	719547
60367582001	R-MW-1	EPA 200.8	719408	EPA 200.8	719549
60367582002	R-MW-2	EPA 200.8	719408	EPA 200.8	719549
60367582003	R-MW-3	EPA 200.8	719408	EPA 200.8	719549
60367582004	R-MW-4	EPA 200.8	719408	EPA 200.8	719549
60367582005	R-MW-5	EPA 200.8	719408	EPA 200.8	719549
60367582006	R-MW-6	EPA 200.8	719408	EPA 200.8	719549
60367582007	R-DUP-1	EPA 200.8	719408	EPA 200.8	719549
60367582008	R-FB-1	EPA 200.8	719408	EPA 200.8	719549
60367582011	R-MW-7(r)	EPA 200.8	719408	EPA 200.8	719549
60367582012	R-MW-B1	EPA 200.8	719408	EPA 200.8	719549
60367582013	R-MW-B2	EPA 200.8	719408	EPA 200.8	719549
60367582001	R-MW-1	EPA 7470	719267	EPA 7470	719617
60367582002	R-MW-2	EPA 7470	719267	EPA 7470	719617
60367582003	R-MW-3	EPA 7470	719267	EPA 7470	719617
60367582004	R-MW-4	EPA 7470	719267	EPA 7470	719617
60367582005	R-MW-5	EPA 7470	719267	EPA 7470	719617
60367582006	R-MW-6	EPA 7470	719267	EPA 7470	719617
60367582007	R-DUP-1	EPA 7470	719267	EPA 7470	719617
60367582008	R-FB-1	EPA 7470	719267	EPA 7470	719617
60367582011	R-MW-7(r)	EPA 7470	719627	EPA 7470	720576
60367582012	R-MW-B1	EPA 7470	719627	EPA 7470	720576
60367582013	R-MW-B2	EPA 7470	719627	EPA 7470	720576
60367582001	R-MW-1	EPA 903.1	447251		
60367582002	R-MW-2	EPA 903.1	447251		
60367582003	R-MW-3	EPA 903.1	447251		
60367582004	R-MW-4	EPA 903.1	447251		
60367582005	R-MW-5	EPA 903.1	447251		
60367582006	R-MW-6	EPA 903.1	447251		
60367582007	R-DUP-1	EPA 903.1	447251		
60367582008	R-FB-1	EPA 903.1	447251		
60367582009	R-MS-1	EPA 903.1	447251		
60367582010	R-MSD-1	EPA 903.1	447251		
60367582011	R-MW-7(r)	EPA 903.1	446788		
60367582012	R-MW-B1	EPA 903.1	446788		
60367582013	R-MW-B2	EPA 903.1	446788		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60367582001	R-MW-1	EPA 904.0	447252		
60367582002	R-MW-2	EPA 904.0	447252		
60367582003	R-MW-3	EPA 904.0	447252		
60367582004	R-MW-4	EPA 904.0	447252		
60367582005	R-MW-5	EPA 904.0	447252		
60367582006	R-MW-6	EPA 904.0	447252		
60367582007	R-DUP-1	EPA 904.0	447252		
60367582008	R-FB-1	EPA 904.0	447252		
60367582009	R-MS-1	EPA 904.0	447252		
60367582010	R-MSD-1	EPA 904.0	447252		
60367582011	R-MW-7(r)	EPA 904.0	446787		
60367582012	R-MW-B1	EPA 904.0	446787		
60367582013	R-MW-B2	EPA 904.0	446787		
60367582001	R-MW-1	SM 2320B	718561		
60367582002	R-MW-2	SM 2320B	718561		
60367582003	R-MW-3	SM 2320B	718561		
60367582004	R-MW-4	SM 2320B	718561		
60367582005	R-MW-5	SM 2320B	718561		
60367582006	R-MW-6	SM 2320B	718561		
60367582007	R-DUP-1	SM 2320B	718561		
60367582008	R-FB-1	SM 2320B	718561		
60367582011	R-MW-7(r)	SM 2320B	719072		
60367582012	R-MW-B1	SM 2320B	719072		
60367582013	R-MW-B2	SM 2320B	719072		
60367582001	R-MW-1	SM 2540C	717180		
60367582002	R-MW-2	SM 2540C	717180		
60367582003	R-MW-3	SM 2540C	717531		
60367582004	R-MW-4	SM 2540C	717531		
60367582005	R-MW-5	SM 2540C	717531		
60367582006	R-MW-6	SM 2540C	717180		
60367582007	R-DUP-1	SM 2540C	717180		
60367582008	R-FB-1	SM 2540C	717397		
60367582011	R-MW-7(r)	SM 2540C	717531		
60367582012	R-MW-B1	SM 2540C	717531		
60367582013	R-MW-B2	SM 2540C	717531		
60367582001	R-MW-1	SM 3500-Fe B#4	720612		
60367582002	R-MW-2	SM 3500-Fe B#4	720612		
60367582003	R-MW-3	SM 3500-Fe B#4	720612		
60367582004	R-MW-4	SM 3500-Fe B#4	720612		
60367582005	R-MW-5	SM 3500-Fe B#4	720612		
60367582006	R-MW-6	SM 3500-Fe B#4	720612		
60367582007	R-DUP-1	SM 3500-Fe B#4	720612		
60367582008	R-FB-1	SM 3500-Fe B#4	720612		
60367582011	R-MW-7(r)	SM 3500-Fe B#4	720769		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA

Pace Project No.: 60367582

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60367582012	R-MW-B1	SM 3500-Fe B#4	720769		
60367582013	R-MW-B2	SM 3500-Fe B#4	720769		
60367582001	R-MW-1	SM 3500-Fe B#4	718252		
60367582002	R-MW-2	SM 3500-Fe B#4	718252		
60367582003	R-MW-3	SM 3500-Fe B#4	718253		
60367582004	R-MW-4	SM 3500-Fe B#4	718253		
60367582005	R-MW-5	SM 3500-Fe B#4	718253		
60367582006	R-MW-6	SM 3500-Fe B#4	718252		
60367582007	R-DUP-1	SM 3500-Fe B#4	718252		
60367582008	R-FB-1	SM 3500-Fe B#4	718252		
60367582011	R-MW-7(r)	SM 3500-Fe B#4	718253		
60367582012	R-MW-B1	SM 3500-Fe B#4	718253		
60367582013	R-MW-B2	SM 3500-Fe B#4	718253		
60367582001	R-MW-1	SM 4500-S-2 D	716875		
60367582002	R-MW-2	SM 4500-S-2 D	716875		
60367582003	R-MW-3	SM 4500-S-2 D	716876		
60367582004	R-MW-4	SM 4500-S-2 D	716876		
60367582005	R-MW-5	SM 4500-S-2 D	716876		
60367582006	R-MW-6	SM 4500-S-2 D	716876		
60367582007	R-DUP-1	SM 4500-S-2 D	716876		
60367582008	R-FB-1	SM 4500-S-2 D	716876		
60367582011	R-MW-7(r)	SM 4500-S-2 D	717193		
60367582012	R-MW-B1	SM 4500-S-2 D	717193		
60367582013	R-MW-B2	SM 4500-S-2 D	717193		
60367582001	R-MW-1	EPA 300.0	716978		
60367582002	R-MW-2	EPA 300.0	716978		
60367582003	R-MW-3	EPA 300.0	718359		
60367582004	R-MW-4	EPA 300.0	716978		
60367582005	R-MW-5	EPA 300.0	716978		
60367582006	R-MW-6	EPA 300.0	716978		
60367582007	R-DUP-1	EPA 300.0	716978		
60367582008	R-FB-1	EPA 300.0	718359		
60367582011	R-MW-7(r)	EPA 300.0	718360		
60367582012	R-MW-B1	EPA 300.0	718360		
60367582013	R-MW-B2	EPA 300.0	718360		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60367582



Client Name: Golder Associates

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

Tracking #: Pace Shipping Label Used? Yes [] No [x]

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

Packing Material: Bubble Wrap [] Bubble Bags [] Foam [] None [] Other [x] ZPIC

Thermometer Used: T298 Type of Ice: Wet [x] Blue [] None [x] Radiums []

Cooler Temperature (°C): As-read 0.3 Corr. Factor 0.0 Corrected 0.3

Date and initials of person examining contents: 4/24/21 [initials]

Temperature should be above freezing to 6°C

Table with 3 columns: Description, Yes/No/N/A checkboxes, and numerical values. Rows include Chain of Custody present, Samples arrived within holding time, Short Hold Time analyses, etc.

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

Person Contacted: Date/Time:

Comments/ Resolution:

REVIEWED By jchurch at 8:32 am, 4/26/21

Project Manager Review: Date:



Sample Condition Upon Receipt

WO#: 60367582
Barcode: 60367582

Client Name: Golder Associates

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

Tracking #: _____ Pace Shipping Label Used? Yes [] No [x]

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

Packing Material: Bubble Wrap [] Bubble Bags [] Foam [] None [] Other [x] ZPLC

Thermometer Used: T-296 Type of Ice: Wet Blue None 2.4 °C

Cooler Temperature (°C): As-read 21.5 Corr. Factor -0.1 Corrected 21.3

Date and initials of person examining contents: 4-27-21/ks

Temperature should be above freezing to 6°C

Table with 2 columns: Question and Answer. Rows include Chain of Custody present, Samples arrived within holding time, Short Hold Time analyses, Rush Turn Around Time requested, Sufficient volume, Correct containers used, Pace containers used, Containers intact, Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?, Filtered volume received for dissolved tests?, Sample labels match COC: Date / time / ID / analyses, Samples contain multiple phases? Matrix: WT, Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# 603173, 603222, Cyanide water sample checks: Lead acetate strip turns dark? (Record only) [] Yes [] No, Potassium iodide test strip turns blue/purple? (Preserve) [] Yes [] No, Trip Blank present: [] Yes [] No [x] N/A, Headspace in VOA vials (>6mm): [] Yes [] No [x] N/A, Samples from USDA Regulated Area: State: [] Yes [] No [x] N/A, Additional labels attached to 5035A / TX1005 vials in the field? [] Yes [] No [x] N/A

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: [REVIEWED] By jchurch at 12:32 pm, 4/27/21

Project Manager Review: _____ Date: _____



GOLDER
MEMBER OF WSP

MEMORANDUM

DATE July 2, 2021

Project No. 153140603

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA – ASSESSMENT/DETECTION MONITORING - DATA PACKAGE 60367582

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 results were qualified as estimates (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 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).
- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
 Project Name: Ameren - RIEC - RCPA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140603
 Validation Date: 7/2/2021

Laboratory: Pace Analytical - Kansas

SDG #: 60367582

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); EPA 7470 (Mercury); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions);

Matrix: Air Soil/Sed. Water Waste SM 3500-FE B#4 (Ferric/Ferrous Iron); SM 4500-S-2 D (Sulfide); EPA 903.1/904.0 (Radium 226/228)

Sample Names R-MW-1, R-MW-2, R-MW-3, R-MW-4, R-MW-5, R-MW-6, R-DUP-1, R-FB-1, R-MS-1, R-MSD-1, R-MW-7(r), R-MW-B1, R-MW-B2

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>4/22/2021 - 4/26/2021</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>EMS/BTT/RR</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 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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 @ R-MW-6
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

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Comments/Notes:

Ferrous Iron analyzed outside of hold time in all samples. All results were qualified.

Sulfate, Sulfide, and Chloride analyzed at a dilution in several samples, no qualification necessary.

MB:

2893278: Boron (11.4J), associated with samples -001 through -008, -011 through -013. Sample results > RL and >10x the blank were not qualified.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

2893284: Chromium (0.44J), associated with samples -001 through -008, -011 through -013. Associated sample results were qualified.

2887096: Chloride (4.9J), associated with samples -001, -002, -004 through -007. Associated sample results were qualified.

2894374: Chloride (0.66J), associated with samples -003, -008. Sample results >RL and >10x blank were not qualified.

2156067: Radium-228 (0.850 ± 0.368), associated with samples -011 through -013. Associated sample results were non-detect, no qualification necessary.

R-FB-1 @ R-MW-4: Boron (10.0J), TDS (311), Ferric Iron (0.010J), Chloride (0.50J); associated sample results >RL and >10x blank were not qualified.

R-DUP-1 @ R-MW-6: DUP RPD exceeds limit (20%) at Barium (138.1%), Boron (34.5%), Iron (186.0%), Manganese (25.2%), Arsenic (157.4%), Chromium (146.8%), Selenium (63.8%), Ferric Iron (186.7%), Ferrous Iron (137.0%), Radium-228 (70.7%); Lead detected in sample, non-detect in dup; Cadmium, Sulfide detected in dup, non-detect in sample

Lab Sample Duplicate 2885504: RPD exceeds limit (10%) for TDS (25%). Associated with sample -008.

Lab Sample Duplicate 2889296: RPD exceeds limit (15%) for Fluoride (38%). Associated with sample -003.

Lab Sample Duplicate 2885881: RPD exceeds limit (10%) for TDS (23%). Performed on unassociated sample, no qualification necessary.

MS/MSD:

2893280/2893281: MS/MSD % recovery low for Sodium. Associate with sample -003.

2889294/2889295: MS % recovery high for Chloride; MS/MSD % recovery high from Sulfate. Associated with sample -003. Only one QC indicator is out of limits for Chloride, no qualification necessary.

2889297: MS % recovery high for Chloride. MS performed on unrelated sample, no qualification necessary.

2889301/2889302: MS % recovery high and RPD exceeds limit for Fluoride. 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-MW-1	Ferrous Iron	0.048	UJ	Analyzed outside of hold time, non-detect
R-FB-1	"	0.048	UJ	"
R-MW-2	"	0.14	J	Analyzed outside of hold time
R-MW-3	"	0.33	J	"
R-MW-4	"	0.56	J	"
R-MW-5	"	0.25	J	"
R-MW-7(r)	"	0.51	J	"
R-MW-B1	"	0.50	J	"
R-MW-B2	"	0.24	J	"
R-MW-6	"	0.058	J	Analyzed outside of hold time; DUP RPD exceeds limit
R-DUP-1	"	0.31	J	"
R-MW-5	Boron	100	U	Detected in method blank, sample result < RL
R-MW-B2	"	100	U	"
R-MW-1	Chromium	1.0	U	"
R-MW-2	"	1.0	U	"
R-MW-3	"	1.0	U	"
R-MW-4	"	1.0	U	"
R-MW-5	"	1.0	U	"
R-MW-7(r)	"	1.0	U	"
R-MW-B1	"	1.0	U	"
R-MW-B2	"	1.0	U	"
R-MW-1	Chloride	17.3	J	Detected in method blank, 10x blank>result>RL
R-MW-2	"	30.4	J	"
R-MW-4	"	17.9	J	"
R-MW-5	"	3.7	J	"
R-MW-6	"	5.7	J	"
R-DUP-1	"	5.1	J	"
R-MW-B1	Boron	103	J	Detected in method blank, 10x blank>result>RL
R-MW-4	TDS	797	J	Detected in field blank, 10x blank>result>RL
R-MW-6	Chromium	1.0	UJ	Detected in method blank, sample result < RL; DUP RPD exceeds limit
R-DUP-1	"	3.0	J	Detected in method blank, 10x blank>result>RL; DUP RPD exceeds limit
R-MW-6	Barium	144	J	DUP RPD exceeds limit
"	Boron	1000	J	"
"	Iron	1060	J	"

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-MW-6	Manganese	211	J	DUP RPD exceeds limit
"	Arsenic	4.4	J	"
"	Selenium	0.32	J	"
"	Ferric Iron	1.0	J	"
"	Radium-228	1.42 ± 0.603	J	"
"	Lead	6.0	J	Detected in sample, ND in DUP
"	Cadmium	0.062	J	"
"	Sulfide	0.026	UJ	Detected in DUP, ND in sample
R-DUP-1	Barium	787	J	"
"	Boron	706	J	"
"	Iron	29300	J	"
"	Manganese	272	J	"
"	Arsenic	36.9	J	"
"	Selenium	0.62	J	"
"	Ferric Iron	29.0	J	"
"	Radium-228	1.30 ± 0.603	J	"
"	Lead	3.8	UJ	Detected in sample, ND in DUP
"	Cadmium	0.24	UJ	"
"	Sulfide	0.044	J	Detected in DUP, ND in sample
R-MW-3	Sodium	237000	J-	MS/MSD % recovery low
"	Sulfate	245	J+	MS/MSD % recovery high

Signature: _____ *Ann Mulhally* _____

Date: 7/2/2021

June 07, 2021

Jeffrey Ingram
Golder Associates
13515 Barrett Parkway Drive
Suite 260
Ballwin, MO 63021

RE: Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60367583

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between April 24, 2021 and April 27, 2021. 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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates
Brendan Talbert, Golder Associates



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

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 #: 9526

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 #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 200030

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60367583001	R-P05S	Water	04/22/21 10:50	04/24/21 03:10
60367583002	R-P10S	Water	04/22/21 15:15	04/24/21 03:10
60367583003	R-P16S	Water	04/22/21 11:35	04/24/21 03:10
60367583004	R-P17S	Water	04/22/21 12:20	04/24/21 03:10
60367583005	R-P17I	Water	04/22/21 13:08	04/24/21 03:10
60367583006	R-P17D	Water	04/22/21 12:14	04/24/21 03:10
60367583007	R-P19S	Water	04/22/21 10:10	04/24/21 03:10
60367583008	R-P19I	Water	04/22/21 10:05	04/24/21 03:10
60367583009	R-P19D	Water	04/22/21 11:15	04/24/21 03:10
60367583010	R-P21S	Water	04/23/21 10:50	04/24/21 03:10
60367583011	R-P21I	Water	04/23/21 12:05	04/24/21 03:10
60367583012	R-P21D	Water	04/23/21 12:45	04/24/21 03:10
60367583013	R-P22S	Water	04/22/21 16:00	04/24/21 03:10
60367583014	R-P22D	Water	04/22/21 15:45	04/24/21 03:10
60367583015	R-CA-DUP-1	Water	04/23/21 00:00	04/24/21 03:10
60367583016	R-CA-DUP-2	Water	04/23/21 00:00	04/24/21 03:10
60367583017	R-CA-FB-1	Water	04/23/21 13:10	04/24/21 03:10
60367583018	R-CA-MS-1	Water	04/22/21 10:50	04/24/21 03:10
60367583019	R-CA-MSD-1	Water	04/22/21 10:50	04/24/21 03:10
60367583020	R-P29S	Water	04/26/21 14:20	04/27/21 03:43
60367583021	R-P29D	Water	04/26/21 09:55	04/27/21 03:43
60367583022	R-P30S	Water	04/26/21 12:40	04/27/21 03:43
60367583023	R-P31S	Water	04/26/21 09:41	04/27/21 03:43
60367583024	R-CA-FB-2	Water	04/26/21 13:05	04/27/21 03:43

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60367583001	R-P05S	EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JDE	1	PASI-K		
		EPA 903.1	SLC	1	PASI-PA		
		EPA 904.0	JC2	1	PASI-PA		
		SM 2320B	MAP	1	PASI-K		
		SM 2540C	LDB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	MAW	1	PASI-K		
		SM 4500-S-2 D	MAW	1	PASI-K		
		EPA 300.0	CRN2	3	PASI-K		
		60367583002	R-P10S	EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	JDE			1	PASI-K		
EPA 903.1	SLC			1	PASI-PA		
EPA 904.0	JC2			1	PASI-PA		
SM 2320B	MAP			1	PASI-K		
SM 2540C	LDB			1	PASI-K		
SM 3500-Fe B#4	LDB			1	PASI-K		
SM 3500-Fe B#4	MAW			1	PASI-K		
SM 4500-S-2 D	MAW			1	PASI-K		
EPA 300.0	VRP			3	PASI-K		
60367583003	R-P16S			EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K		
		EPA 903.1	SLC	1	PASI-PA		
		EPA 904.0	JC2	1	PASI-PA		
		SM 2320B	MAP	1	PASI-K		
		SM 2540C	LDB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	MAW	1	PASI-K		
		SM 4500-S-2 D	MAW	1	PASI-K		
		EPA 300.0	VRP	3	PASI-K		
		60367583004	R-P17S	EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	JDE			1	PASI-K		
EPA 903.1	SLC			1	PASI-PA		

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60367583005	R-P17I	EPA 904.0	JC2	1	PASI-PA		
		SM 2320B	MAP	1	PASI-K		
		SM 2540C	LDB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	MAW	1	PASI-K		
		SM 4500-S-2 D	MAW	1	PASI-K		
		EPA 300.0	VRP	3	PASI-K		
		EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JDE	1	PASI-K		
		EPA 903.1	SLC	1	PASI-PA		
		EPA 904.0	JC2	1	PASI-PA		
		SM 2320B	MAP	1	PASI-K		
		SM 2540C	LDB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		60367583006	R-P17D	SM 3500-Fe B#4	MAW	1	PASI-K
SM 4500-S-2 D	MAW			1	PASI-K		
EPA 300.0	VRP			3	PASI-K		
EPA 200.7	JLH			13	PASI-K		
EPA 200.8	JGP			6	PASI-K		
EPA 7470	JDE			1	PASI-K		
EPA 903.1	SLC			1	PASI-PA		
EPA 904.0	JC2			1	PASI-PA		
SM 2320B	MAP			1	PASI-K		
SM 2540C	LDB			1	PASI-K		
SM 3500-Fe B#4	LDB			1	PASI-K		
SM 3500-Fe B#4	MAW			1	PASI-K		
SM 4500-S-2 D	MAW			1	PASI-K		
EPA 300.0	CRN2, VRP			3	PASI-K		
60367583007	R-P19S			EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K		
		EPA 903.1	SLC	1	PASI-PA		
		EPA 904.0	JC2	1	PASI-PA		
		SM 2320B	MAP	1	PASI-K		
		SM 2540C	LDB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60367583008	R-P19I	SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
60367583009	R-P19D	SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	MAP	1	PASI-K
60367583010	R-P21S	SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
60367583011	R-P21I	SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	CRN2, VRP	3	PASI-K
		EPA 200.7	JLH	13	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60367583012	R-P21D	EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	CRN2, VRP	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
SM 3500-Fe B#4	LDB	1	PASI-K		
SM 3500-Fe B#4	MAW	1	PASI-K		
SM 4500-S-2 D	MAW	1	PASI-K		
60367583013	R-P22S	EPA 300.0	CRN2, VRP	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	CRN2, VRP	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
60367583014	R-P22D	EPA 300.0	CRN2, VRP	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
60367583015	R-CA-DUP-1	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	CRN2, VRP	3	PASI-K
60367583016	R-CA-DUP-2	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60367583017	R-CA-FB-1	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JDE	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	MAP	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60367583018	R-CA-MS-1	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
60367583019	R-CA-MSD-1	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
60367583020	R-P29S	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JDE	6	PASI-K
		EPA 7470	OMT	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	LDB	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
60367583021	R-P29D	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JDE	6	PASI-K
		EPA 7470	OMT	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	LDB	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
60367583022	R-P30S	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JDE	6	PASI-K
		EPA 7470	OMT	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	LDB	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60367583023	R-P31S	SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JDE	6	PASI-K
		EPA 7470	OMT	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	LDB	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
60367583024	R-CA-FB-2	SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	VRP	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JDE	6	PASI-K
		EPA 7470	OMT	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	LDB	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	MAW	1	PASI-K
		SM 4500-S-2 D	MAW	1	PASI-K
		EPA 300.0	VRP	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P05S Lab ID: 60367583001 Collected: 04/22/21 10:50 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	166	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 22:55	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 22:55	7440-41-7	
Boron	4240	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 22:55	7440-42-8	
Calcium	62800	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 22:55	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 22:55	7440-48-4	
Iron	8720	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 22:55	7439-89-6	
Lead	4.1J	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 22:55	7439-92-1	
Lithium	13.9	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 22:55	7439-93-2	
Magnesium	21700	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 22:55	7439-95-4	
Manganese	353	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 22:55	7439-96-5	
Molybdenum	9.2J	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 22:55	7439-98-7	
Potassium	5470	ug/L	500	146	1	05/10/21 09:56	05/13/21 22:55	7440-09-7	
Sodium	25600	ug/L	500	254	1	05/10/21 09:56	05/13/21 22:55	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:34	7440-36-0	
Arsenic	157	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 17:46	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 17:46	7440-43-9	
Chromium	0.44J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 17:46	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 17:46	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 17:46	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 12:38	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	294	mg/L	20.0	7.5	1		05/05/21 10:09		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	14.0	mg/L	10.0	10.0	1		04/29/21 10:13		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.7	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	1.0	mg/L	0.20	0.048	1		05/10/21 12:05		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P05S **Lab ID: 60367583001** Collected: 04/22/21 10:50 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.033J	mg/L	0.050	0.026	1		04/27/21 10:44	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	23.1	mg/L	5.0	1.9	5		05/07/21 14:42	16887-00-6	
Fluoride	0.38	mg/L	0.20	0.086	1		05/07/21 13:39	16984-48-8	M1, R1
Sulfate	15.8	mg/L	1.0	0.42	1		05/07/21 13:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P10S **Lab ID: 60367583002** Collected: 04/22/21 15:15 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	145	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 23:05	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 23:05	7440-41-7	
Boron	1690	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 23:05	7440-42-8	
Calcium	94300	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 23:05	7440-70-2	
Cobalt	2.9J	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 23:05	7440-48-4	
Iron	364	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 23:05	7439-89-6	
Lead	5.2J	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 23:05	7439-92-1	
Lithium	20.8	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 23:05	7439-93-2	
Magnesium	14500	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 23:05	7439-95-4	
Manganese	1630	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 23:05	7439-96-5	
Molybdenum	60.3	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 23:05	7439-98-7	
Potassium	4970	ug/L	500	146	1	05/10/21 09:56	05/13/21 23:05	7440-09-7	
Sodium	62500	ug/L	500	254	1	05/10/21 09:56	05/13/21 23:05	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:37	7440-36-0	
Arsenic	3.4	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 17:51	7440-38-2	
Cadmium	0.12J	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 17:51	7440-43-9	
Chromium	0.34J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 17:51	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 17:51	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 17:51	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 12:45	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	340	mg/L	20.0	7.5	1		05/05/21 10:20		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	770	mg/L	10.0	10.0	1		04/29/21 10:13		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.32	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.048	mg/L	0.20	0.048	1		05/10/21 12:10		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P10S **Lab ID: 60367583002** Collected: 04/22/21 15:15 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/27/21 10:45	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	15.8	mg/L	1.0	0.39	1		05/06/21 21:36	16887-00-6	
Fluoride	0.43	mg/L	0.20	0.086	1		05/06/21 21:36	16984-48-8	
Sulfate	106	mg/L	10.0	4.2	10		05/06/21 22:08	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P16S Lab ID: 60367583003 Collected: 04/22/21 11:35 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	32.9	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 23:08	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 23:08	7440-41-7	
Boron	194	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 23:08	7440-42-8	
Calcium	78600	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 23:08	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 23:08	7440-48-4	
Iron	31.8J	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 23:08	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 23:08	7439-92-1	
Lithium	29.1	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 23:08	7439-93-2	
Magnesium	16200	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 23:08	7439-95-4	
Manganese	0.80J	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 23:08	7439-96-5	
Molybdenum	20.8	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 23:08	7439-98-7	
Potassium	2470	ug/L	500	146	1	05/10/21 09:56	05/13/21 23:08	7440-09-7	
Sodium	18300	ug/L	500	254	1	05/10/21 09:56	05/13/21 23:08	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:39	7440-36-0	
Arsenic	1.4	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 17:53	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 17:53	7440-43-9	
Chromium	0.37J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 17:53	7440-47-3	B
Selenium	4.6	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 17:53	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 17:53	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 12:47	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	279	mg/L	20.0	7.5	1		05/05/21 10:25		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	385	mg/L	5.0	5.0	1		04/29/21 10:14		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.032J	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.048	mg/L	0.20	0.048	1		05/10/21 12:07		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P16S **Lab ID: 60367583003** Collected: 04/22/21 11:35 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/27/21 10:46	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	1.5	mg/L	1.0	0.39	1		05/06/21 22:24	16887-00-6	B
Fluoride	0.40	mg/L	0.20	0.086	1		05/06/21 22:24	16984-48-8	
Sulfate	32.9	mg/L	10.0	4.2	10		05/06/21 22:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P17S Lab ID: 60367583004 Collected: 04/22/21 12:20 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	91.9	ug/L	5.0	1.8	1	05/10/21 09:56	05/13/21 23:18	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 09:56	05/13/21 23:18	7440-41-7	
Boron	2740	ug/L	100	8.6	1	05/10/21 09:56	05/13/21 23:18	7440-42-8	
Calcium	110000	ug/L	200	75.4	1	05/10/21 09:56	05/13/21 23:18	7440-70-2	
Cobalt	2.3J	ug/L	5.0	0.95	1	05/10/21 09:56	05/13/21 23:18	7440-48-4	
Iron	3980	ug/L	50.0	21.4	1	05/10/21 09:56	05/13/21 23:18	7439-89-6	
Lead	4.5J	ug/L	10.0	3.8	1	05/10/21 09:56	05/13/21 23:18	7439-92-1	
Lithium	27.7	ug/L	10.0	7.7	1	05/10/21 09:56	05/13/21 23:18	7439-93-2	
Magnesium	23500	ug/L	50.0	31.4	1	05/10/21 09:56	05/13/21 23:18	7439-95-4	
Manganese	1230	ug/L	5.0	0.74	1	05/10/21 09:56	05/13/21 23:18	7439-96-5	
Molybdenum	68.9	ug/L	20.0	2.2	1	05/10/21 09:56	05/13/21 23:18	7439-98-7	
Potassium	3750	ug/L	500	146	1	05/10/21 09:56	05/13/21 23:18	7440-09-7	
Sodium	116000	ug/L	500	254	1	05/10/21 09:56	05/13/21 23:18	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 09:56	06/02/21 08:40	7440-36-0	
Arsenic	28.9	ug/L	1.0	0.11	1	05/10/21 09:56	06/01/21 17:54	7440-38-2	
Cadmium	0.064J	ug/L	0.50	0.062	1	05/10/21 09:56	06/01/21 17:54	7440-43-9	
Chromium	0.40J	ug/L	1.0	0.23	1	05/10/21 09:56	06/01/21 17:54	7440-47-3	B
Selenium	0.66J	ug/L	1.0	0.18	1	05/10/21 09:56	06/01/21 17:54	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 09:56	06/01/21 17:54	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 12:54	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	412	mg/L	20.0	7.5	1		05/05/21 10:31		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	412	mg/L	10.0	10.0	1		04/29/21 10:14		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	3.6	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.41	mg/L	0.20	0.048	1		05/10/21 12:08		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P17S **Lab ID: 60367583004** Collected: 04/22/21 12:20 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/27/21 10:46	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	29.9	mg/L	5.0	1.9	5		05/06/21 23:27	16887-00-6	B
Fluoride	1.1	mg/L	0.20	0.086	1		05/06/21 23:11	16984-48-8	
Sulfate	207	mg/L	20.0	8.4	20		05/06/21 23:43	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P171 Lab ID: 60367583005 Collected: 04/22/21 13:08 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	13.6	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 21:04	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 21:04	7440-41-7	
Boron	2020	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 21:04	7440-42-8	
Calcium	8630	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 21:04	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 21:04	7440-48-4	
Iron	214	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 21:04	7439-89-6	
Lead	11.8	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 21:04	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 21:04	7439-93-2	
Magnesium	317	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 21:04	7439-95-4	
Manganese	6.7	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 21:04	7439-96-5	
Molybdenum	104	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 21:04	7439-98-7	
Potassium	1660	ug/L	500	146	1	05/10/21 10:28	05/13/21 21:04	7440-09-7	
Sodium	200000	ug/L	500	254	1	05/10/21 10:28	05/13/21 21:04	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.38J	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 08:56	7440-36-0	
Arsenic	51.2	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:16	7440-38-2	
Cadmium	0.36J	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:16	7440-43-9	
Chromium	0.88J	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:16	7440-47-3	
Selenium	1.6	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:16	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:16	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 12:57	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	181	mg/L	20.0	7.5	1		05/05/21 10:36		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	368	mg/L	10.0	10.0	1		04/29/21 10:14		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.32	mg/L	0.20	0.048	1		05/10/21 12:08		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P171 **Lab ID: 60367583005** Collected: 04/22/21 13:08 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	1.4	mg/L	0.10	0.051	2		04/27/21 10:46	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.3	mg/L	2.0	0.78	2		05/07/21 01:02	16887-00-6	M1
Fluoride	2.0	mg/L	0.20	0.086	1		05/06/21 23:59	16984-48-8	
Sulfate	291	mg/L	20.0	8.4	20		05/07/21 01:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P17D **Lab ID: 60367583006** Collected: 04/22/21 12:14 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	103	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 21:19	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 21:19	7440-41-7	
Boron	7440	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 21:19	7440-42-8	
Calcium	45000	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 21:19	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 21:19	7440-48-4	
Iron	2720	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 21:19	7439-89-6	
Lead	3.9J	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 21:19	7439-92-1	
Lithium	35.8	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 21:19	7439-93-2	
Magnesium	9810	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 21:19	7439-95-4	
Manganese	456	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 21:19	7439-96-5	
Molybdenum	676	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 21:19	7439-98-7	
Potassium	7060	ug/L	500	146	1	05/10/21 10:28	05/13/21 21:19	7440-09-7	
Sodium	124000	ug/L	500	254	1	05/10/21 10:28	05/13/21 21:19	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 08:57	7440-36-0	
Arsenic	1.2	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:18	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:18	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:18	7440-47-3	
Selenium	0.22J	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:18	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:18	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 12:59	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	134	mg/L	20.0	7.5	1		05/05/21 10:40		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	756	mg/L	10.0	10.0	1		04/29/21 10:14		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	2.2	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.47	mg/L	0.20	0.048	1		05/10/21 12:07		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P17D **Lab ID: 60367583006** Collected: 04/22/21 12:14 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	0.097	mg/L	0.050	0.026	1		04/27/21 10:47	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	29.5	mg/L	2.0	0.78	2		05/08/21 02:53	16887-00-6	
Fluoride	0.65	mg/L	0.20	0.086	1		05/07/21 02:06	16984-48-8	
Sulfate	271	mg/L	20.0	8.4	20		05/07/21 02:37	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P19S Lab ID: 60367583007 Collected: 04/22/21 10:10 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	418	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 21:22	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 21:22	7440-41-7	
Boron	717	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 21:22	7440-42-8	
Calcium	184000	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 21:22	7440-70-2	M1
Cobalt	1.0J	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 21:22	7440-48-4	
Iron	17700	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 21:22	7439-89-6	
Lead	6.3J	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 21:22	7439-92-1	
Lithium	42.9	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 21:22	7439-93-2	
Magnesium	35500	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 21:22	7439-95-4	M1
Manganese	1290	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 21:22	7439-96-5	
Molybdenum	4.6J	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 21:22	7439-98-7	
Potassium	7910	ug/L	500	146	1	05/10/21 10:28	05/13/21 21:22	7440-09-7	
Sodium	34300	ug/L	500	254	1	05/10/21 10:28	05/13/21 21:22	7440-23-5	M1
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 09:01	7440-36-0	
Arsenic	19.2	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:23	7440-38-2	
Cadmium	0.24J	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:23	7440-43-9	
Chromium	0.37J	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:23	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:23	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:23	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 13:01	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	550	mg/L	20.0	7.5	1		05/05/21 10:47		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	778	mg/L	10.0	10.0	1		04/29/21 10:14		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	17.0	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.72	mg/L	0.20	0.048	1		05/10/21 12:05		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P19S **Lab ID: 60367583007** Collected: 04/22/21 10:10 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.036J	mg/L	0.050	0.026	1		04/27/21 10:47	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	10.9	mg/L	1.0	0.39	1		05/07/21 02:53	16887-00-6	
Fluoride	0.32	mg/L	0.20	0.086	1		05/07/21 02:53	16984-48-8	
Sulfate	114	mg/L	10.0	4.2	10		05/07/21 03:57	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P191 Lab ID: 60367583008 Collected: 04/22/21 10:05 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	13.2	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 21:27	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 21:27	7440-41-7	
Boron	5740	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 21:27	7440-42-8	
Calcium	8020	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 21:27	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 21:27	7440-48-4	
Iron	170	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 21:27	7439-89-6	
Lead	22.1	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 21:27	7439-92-1	
Lithium	8.3J	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 21:27	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 21:27	7439-95-4	
Manganese	3.0J	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 21:27	7439-96-5	
Molybdenum	339	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 21:27	7439-98-7	
Potassium	11500	ug/L	500	146	1	05/10/21 10:28	05/13/21 21:27	7440-09-7	
Sodium	275000	ug/L	500	254	1	05/10/21 10:28	05/13/21 21:27	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	5.4	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 09:02	7440-36-0	
Arsenic	295	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:24	7440-38-2	
Cadmium	0.56	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:24	7440-43-9	
Chromium	0.93J	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:24	7440-47-3	
Selenium	4.8	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:24	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:24	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 13:04	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	338	mg/L	20.0	7.5	1		05/05/21 11:02		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	991	mg/L	13.3	13.3	1		04/29/21 10:14		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	0.0J	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.26	mg/L	0.20	0.048	1		05/10/21 12:05		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P19I **Lab ID: 60367583008** Collected: 04/22/21 10:05 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	5.0	mg/L	0.50	0.26	10		04/27/21 10:54	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	24.4	mg/L	2.0	0.78	2		05/07/21 04:28	16887-00-6	
Fluoride	1.3	mg/L	0.20	0.086	1		05/07/21 04:13	16984-48-8	
Sulfate	315	mg/L	20.0	8.4	20		05/07/21 04:44	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P19D **Lab ID: 60367583009** Collected: 04/22/21 11:15 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	68.4	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 21:30	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 21:30	7440-41-7	
Boron	10800	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 21:30	7440-42-8	
Calcium	29600	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 21:30	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 21:30	7440-48-4	
Iron	1560	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 21:30	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 21:30	7439-92-1	
Lithium	16.4	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 21:30	7439-93-2	
Magnesium	4440	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 21:30	7439-95-4	
Manganese	220	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 21:30	7439-96-5	
Molybdenum	894	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 21:30	7439-98-7	
Potassium	3330	ug/L	500	146	1	05/10/21 10:28	05/13/21 21:30	7440-09-7	
Sodium	168000	ug/L	500	254	1	05/10/21 10:28	05/13/21 21:30	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 09:03	7440-36-0	
Arsenic	0.81J	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:26	7440-38-2	
Cadmium	0.088J	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:26	7440-43-9	
Chromium	0.61J	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:26	7440-47-3	
Selenium	0.38J	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:26	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:26	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 13:06	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	220	mg/L	20.0	7.5	1		05/05/21 11:07		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	755	mg/L	10.0	10.0	1		04/29/21 10:14		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.44	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	1.1	mg/L	0.20	0.048	1		05/10/21 12:07		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P19D **Lab ID: 60367583009** Collected: 04/22/21 11:15 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.038J	mg/L	0.050	0.026	1		04/27/21 10:55	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	25.9	mg/L	2.0	0.78	2		05/07/21 05:16	16887-00-6	
Fluoride	2.1	mg/L	0.20	0.086	1		05/07/21 05:00	16984-48-8	
Sulfate	207	mg/L	20.0	8.4	20		05/07/21 05:32	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P21S **Lab ID: 60367583010** Collected: 04/23/21 10:50 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	508	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 21:33	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 21:33	7440-41-7	
Boron	250	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 21:33	7440-42-8	
Calcium	269000	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 21:33	7440-70-2	
Cobalt	2.3J	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 21:33	7440-48-4	
Iron	43000	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 21:33	7439-89-6	
Lead	8.9J	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 21:33	7439-92-1	
Lithium	18.5	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 21:33	7439-93-2	
Magnesium	59400	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 21:33	7439-95-4	
Manganese	3280	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 21:33	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 21:33	7439-98-7	
Potassium	5440	ug/L	500	146	1	05/10/21 10:28	05/13/21 21:33	7440-09-7	
Sodium	28900	ug/L	500	254	1	05/10/21 10:28	05/13/21 21:33	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 09:04	7440-36-0	
Arsenic	122	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:28	7440-38-2	
Cadmium	0.10J	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:28	7440-43-9	
Chromium	0.45J	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:28	7440-47-3	
Selenium	0.28J	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:28	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:28	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 13:08	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	821	mg/L	20.0	7.5	1		05/05/21 19:16		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	390	mg/L	5.0	5.0	1		04/29/21 10:06		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	41.3	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	1.7	mg/L	0.20	0.048	1		05/10/21 12:14		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P21S **Lab ID: 60367583010** Collected: 04/23/21 10:50 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/27/21 11:12	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	23.8	mg/L	5.0	1.9	5		05/07/21 06:04	16887-00-6	B
Fluoride	0.32	mg/L	0.20	0.086	1		05/07/21 05:48	16984-48-8	
Sulfate	120	mg/L	10.0	4.2	10		05/08/21 03:07	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P211 Lab ID: 60367583011 Collected: 04/23/21 12:05 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	36.5	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 21:35	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 21:35	7440-41-7	
Boron	2390	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 21:35	7440-42-8	
Calcium	19700	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 21:35	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 21:35	7440-48-4	
Iron	232	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 21:35	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 21:35	7439-92-1	
Lithium	23.3	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 21:35	7439-93-2	
Magnesium	2420	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 21:35	7439-95-4	
Manganese	56.0	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 21:35	7439-96-5	
Molybdenum	115	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 21:35	7439-98-7	
Potassium	4820	ug/L	500	146	1	05/10/21 10:28	05/13/21 21:35	7440-09-7	
Sodium	97200	ug/L	500	254	1	05/10/21 10:28	05/13/21 21:35	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 09:09	7440-36-0	
Arsenic	5.2	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:34	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:34	7440-43-9	
Chromium	0.54J	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:34	7440-47-3	
Selenium	0.41J	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:34	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:34	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 13:15	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	147	mg/L	20.0	7.5	1		05/05/21 19:20		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	829	mg/L	13.3	13.3	1		04/29/21 10:06		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/14/21 14:45	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.24	mg/L	0.20	0.048	1		05/10/21 12:15		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P211 **Lab ID: 60367583011** Collected: 04/23/21 12:05 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.12	mg/L	0.050	0.026	1		04/27/21 11:12	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	31.5	mg/L	2.0	0.78	2		05/08/21 03:21	16887-00-6	
Fluoride	1.1	mg/L	0.20	0.086	1		05/07/21 06:20	16984-48-8	
Sulfate	93.5	mg/L	10.0	4.2	10		05/07/21 07:07	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P21D **Lab ID: 60367583012** Collected: 04/23/21 12:45 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	127	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 21:46	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 21:46	7440-41-7	
Boron	5070	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 21:46	7440-42-8	
Calcium	106000	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 21:46	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 21:46	7440-48-4	
Iron	2510	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 21:46	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 21:46	7439-92-1	
Lithium	143	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 21:46	7439-93-2	
Magnesium	36800	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 21:46	7439-95-4	
Manganese	802	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 21:46	7439-96-5	
Molybdenum	324	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 21:46	7439-98-7	
Potassium	8830	ug/L	500	146	1	05/10/21 10:28	05/13/21 21:46	7440-09-7	
Sodium	347000	ug/L	500	254	1	05/10/21 10:28	05/13/21 21:46	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 09:10	7440-36-0	
Arsenic	0.55J	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:36	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:36	7440-43-9	
Chromium	0.31J	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:36	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:36	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:36	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 13:17	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	256	mg/L	20.0	7.5	1		05/05/21 19:35		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	1550	mg/L	20.0	20.0	1		04/29/21 10:06		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	1.9	mg/L	0.050		1		05/14/21 14:46	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	0.64	mg/L	0.20	0.048	1		05/10/21 12:15		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P21D **Lab ID: 60367583012** Collected: 04/23/21 12:45 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/27/21 11:11	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	627	mg/L	100	38.9	100		05/08/21 03:36	16887-00-6	B
Fluoride	1.2	mg/L	0.20	0.086	1		05/07/21 07:23	16984-48-8	
Sulfate	144	mg/L	10.0	4.2	10		05/07/21 07:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P22S Lab ID: 60367583013 Collected: 04/22/21 16:00 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	144	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 21:49	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 21:49	7440-41-7	
Boron	489	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 21:49	7440-42-8	
Calcium	215000	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 21:49	7440-70-2	M1
Cobalt	2.1J	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 21:49	7440-48-4	
Iron	2880	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 21:49	7439-89-6	
Lead	4.7J	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 21:49	7439-92-1	
Lithium	56.0	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 21:49	7439-93-2	
Magnesium	49500	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 21:49	7439-95-4	
Manganese	721	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 21:49	7439-96-5	
Molybdenum	9.3J	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 21:49	7439-98-7	
Potassium	7640	ug/L	500	146	1	05/10/21 10:28	05/13/21 21:49	7440-09-7	
Sodium	54500	ug/L	500	254	1	05/10/21 10:28	05/13/21 21:49	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 09:12	7440-36-0	
Arsenic	3.3	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:38	7440-38-2	
Cadmium	0.086J	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:38	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:38	7440-47-3	
Selenium	0.52J	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:38	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:38	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 13:20	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	537	mg/L	20.0	7.5	1		05/05/21 11:14		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1000	mg/L	13.3	13.3	1		04/29/21 10:15		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	2.8	mg/L	0.050		1		05/14/21 14:46	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.056J	mg/L	0.20	0.048	1		05/10/21 12:11		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P22S **Lab ID: 60367583013** Collected: 04/22/21 16:00 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/27/21 10:55	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	43.4	mg/L	5.0	1.9	5		05/07/21 08:11	16887-00-6	
Fluoride	<0.086	mg/L	0.20	0.086	1		05/07/21 07:55	16984-48-8	
Sulfate	229	mg/L	20.0	8.4	20		05/08/21 03:50	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P22D Lab ID: 60367583014 Collected: 04/22/21 15:45 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	61.2	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 21:51	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 21:51	7440-41-7	
Boron	8700	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 21:51	7440-42-8	
Calcium	23400	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 21:51	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 21:51	7440-48-4	
Iron	1120	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 21:51	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 21:51	7439-92-1	
Lithium	25.1	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 21:51	7439-93-2	
Magnesium	3160	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 21:51	7439-95-4	
Manganese	65.3	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 21:51	7439-96-5	
Molybdenum	348	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 21:51	7439-98-7	
Potassium	4170	ug/L	500	146	1	05/10/21 10:28	05/13/21 21:51	7440-09-7	
Sodium	155000	ug/L	500	254	1	05/10/21 10:28	05/13/21 21:51	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.22J	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 09:13	7440-36-0	
Arsenic	9.0	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:39	7440-38-2	
Cadmium	0.086J	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:39	7440-43-9	
Chromium	1.7	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:39	7440-47-3	
Selenium	0.89J	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:39	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:39	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 13:22	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	310	mg/L	20.0	7.5	1		05/05/21 11:19		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	18.0	mg/L	10.0	10.0	1		04/29/21 10:15		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/14/21 14:46	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	1.3	mg/L	0.20	0.048	1		05/10/21 12:10		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P22D **Lab ID: 60367583014** Collected: 04/22/21 15:45 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.053	mg/L	0.050	0.026	1		04/27/21 11:02	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	27.8	mg/L	5.0	1.9	5		05/07/21 08:58	16887-00-6	B
Fluoride	2.6	mg/L	0.20	0.086	1		05/07/21 08:42	16984-48-8	
Sulfate	97.4	mg/L	5.0	2.1	5		05/07/21 08:58	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-DUP-1 Lab ID: 60367583015 Collected: 04/23/21 00:00 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	503	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 21:56	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 21:56	7440-41-7	
Boron	240	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 21:56	7440-42-8	
Calcium	264000	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 21:56	7440-70-2	
Cobalt	2.4J	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 21:56	7440-48-4	
Iron	42200	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 21:56	7439-89-6	
Lead	7.8J	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 21:56	7439-92-1	
Lithium	19.1	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 21:56	7439-93-2	
Magnesium	58800	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 21:56	7439-95-4	
Manganese	3240	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 21:56	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 21:56	7439-98-7	
Potassium	5440	ug/L	500	146	1	05/10/21 10:28	05/13/21 21:56	7440-09-7	
Sodium	28100	ug/L	500	254	1	05/10/21 10:28	05/13/21 21:56	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 09:15	7440-36-0	
Arsenic	123	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:43	7440-38-2	
Cadmium	0.16J	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:43	7440-43-9	
Chromium	0.48J	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:43	7440-47-3	
Selenium	0.30J	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:43	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:43	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 13:24	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	817	mg/L	20.0	7.5	1		05/05/21 19:43		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	871	mg/L	13.3	13.3	1		04/29/21 10:06		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	41.0	mg/L	0.050		1		05/14/21 14:46	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	1.2	mg/L	0.20	0.048	1		05/10/21 12:11		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-DUP-1 **Lab ID: 60367583015** Collected: 04/23/21 00:00 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/28/21 10:42	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	30.4	mg/L	5.0	1.9	5		05/08/21 04:04	16887-00-6	B
Fluoride	0.31	mg/L	0.20	0.086	1		05/07/21 09:30	16984-48-8	
Sulfate	116	mg/L	20.0	8.4	20		05/08/21 04:19	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-DUP-2 Lab ID: 60367583016 Collected: 04/23/21 00:00 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	36.2	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 21:59	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 21:59	7440-41-7	
Boron	2360	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 21:59	7440-42-8	
Calcium	19200	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 21:59	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 21:59	7440-48-4	
Iron	224	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 21:59	7439-89-6	
Lead	3.9J	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 21:59	7439-92-1	
Lithium	19.5	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 21:59	7439-93-2	
Magnesium	2380	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 21:59	7439-95-4	
Manganese	55.1	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 21:59	7439-96-5	
Molybdenum	113	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 21:59	7439-98-7	
Potassium	4680	ug/L	500	146	1	05/10/21 10:28	05/13/21 21:59	7440-09-7	
Sodium	95100	ug/L	500	254	1	05/10/21 10:28	05/13/21 21:59	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 09:17	7440-36-0	
Arsenic	4.8	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:44	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:44	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:44	7440-47-3	
Selenium	0.35J	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:44	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:44	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 13:26	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	153	mg/L	20.0	7.5	1		05/05/21 19:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	385	mg/L	5.0	5.0	1		04/29/21 10:06		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/14/21 14:46	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.25	mg/L	0.20	0.048	1		05/10/21 12:12		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-DUP-2 **Lab ID: 60367583016** Collected: 04/23/21 00:00 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.11	mg/L	0.050	0.026	1		04/28/21 10:43	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	27.8	mg/L	5.0	1.9	5		05/07/21 16:32	16887-00-6	
Fluoride	0.99	mg/L	0.20	0.086	1		05/07/21 16:16	16984-48-8	
Sulfate	93.9	mg/L	5.0	2.1	5		05/07/21 16:32	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-FB-1 Lab ID: 60367583017 Collected: 04/23/21 13:10 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<1.8	ug/L	5.0	1.8	1	05/10/21 10:28	05/13/21 22:02	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	05/10/21 10:28	05/13/21 22:02	7440-41-7	
Boron	<8.6	ug/L	100	8.6	1	05/10/21 10:28	05/13/21 22:02	7440-42-8	
Calcium	<75.4	ug/L	200	75.4	1	05/10/21 10:28	05/13/21 22:02	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	05/10/21 10:28	05/13/21 22:02	7440-48-4	
Iron	<21.4	ug/L	50.0	21.4	1	05/10/21 10:28	05/13/21 22:02	7439-89-6	
Lead	3.9J	ug/L	10.0	3.8	1	05/10/21 10:28	05/13/21 22:02	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	05/10/21 10:28	05/13/21 22:02	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	05/10/21 10:28	05/13/21 22:02	7439-95-4	
Manganese	<0.74	ug/L	5.0	0.74	1	05/10/21 10:28	05/13/21 22:02	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	05/10/21 10:28	05/13/21 22:02	7439-98-7	
Potassium	<146	ug/L	500	146	1	05/10/21 10:28	05/13/21 22:02	7440-09-7	
Sodium	<254	ug/L	500	254	1	05/10/21 10:28	05/13/21 22:02	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/10/21 10:28	06/02/21 09:08	7440-36-0	
Arsenic	<0.11	ug/L	1.0	0.11	1	05/10/21 10:28	06/01/21 18:33	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/10/21 10:28	06/01/21 18:33	7440-43-9	
Chromium	0.38J	ug/L	1.0	0.23	1	05/10/21 10:28	06/01/21 18:33	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/10/21 10:28	06/01/21 18:33	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/10/21 10:28	06/01/21 18:33	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/14/21 13:29	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<7.5	mg/L	20.0	7.5	1		05/05/21 19:51		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	290	mg/L	5.0	5.0	1		04/29/21 10:07		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0042J	mg/L	0.050		1		05/14/21 14:46	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.048	mg/L	0.20	0.048	1		05/10/21 12:15		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-FB-1 **Lab ID: 60367583017** Collected: 04/23/21 13:10 Received: 04/24/21 03:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/28/21 10:43	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.39	mg/L	1.0	0.39	1		05/07/21 17:03	16887-00-6	
Fluoride	<0.086	mg/L	0.20	0.086	1		05/07/21 17:03	16984-48-8	
Sulfate	<0.42	mg/L	1.0	0.42	1		05/07/21 17:03	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P29S **Lab ID: 60367583020** Collected: 04/26/21 14:20 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	423	ug/L	5.0	1.8	1	04/30/21 13:00	05/10/21 22:02	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	04/30/21 13:00	05/10/21 22:02	7440-41-7	
Boron	104	ug/L	100	8.6	1	04/30/21 13:00	05/10/21 22:02	7440-42-8	
Calcium	157000	ug/L	200	75.4	1	04/30/21 13:00	05/10/21 22:02	7440-70-2	
Cobalt	2.2J	ug/L	5.0	0.95	1	04/30/21 13:00	05/10/21 22:02	7440-48-4	
Iron	12300	ug/L	50.0	21.4	1	04/30/21 13:00	05/10/21 22:02	7439-89-6	
Lead	4.4J	ug/L	10.0	3.8	1	04/30/21 13:00	05/10/21 22:02	7439-92-1	
Lithium	11.7	ug/L	10.0	7.7	1	04/30/21 13:00	05/10/21 22:02	7439-93-2	
Magnesium	38500	ug/L	50.0	31.4	1	04/30/21 13:00	05/10/21 22:02	7439-95-4	
Manganese	635	ug/L	5.0	0.74	1	04/30/21 13:00	05/10/21 22:02	7439-96-5	
Molybdenum	2.5J	ug/L	20.0	2.2	1	04/30/21 13:00	05/10/21 22:02	7439-98-7	
Potassium	6310	ug/L	500	146	1	04/30/21 13:00	05/10/21 22:02	7440-09-7	
Sodium	16200	ug/L	500	254	1	04/30/21 13:00	05/10/21 22:02	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/06/21 10:54	05/11/21 13:19	7440-36-0	
Arsenic	41.8	ug/L	1.0	0.11	1	05/06/21 10:54	05/11/21 13:19	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/06/21 10:54	05/11/21 13:19	7440-43-9	
Chromium	0.60J	ug/L	1.0	0.23	1	05/06/21 10:54	05/11/21 13:19	7440-47-3	
Selenium	0.19J	ug/L	1.0	0.18	1	05/06/21 10:54	05/11/21 13:19	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/06/21 10:54	05/11/21 13:19	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/11/21 09:28	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	500	mg/L	20.0	7.5	1		05/06/21 19:29		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	611	mg/L	10.0	10.0	1		04/29/21 10:12		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	11.7	mg/L	0.050		1		05/17/21 11:39	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.54	mg/L	0.20	0.048	1		05/10/21 12:19		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P29S **Lab ID: 60367583020** Collected: 04/26/21 14:20 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/28/21 11:00	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	17.1	mg/L	1.0	0.39	1		04/30/21 20:36	16887-00-6	
Fluoride	0.25	mg/L	0.20	0.086	1		04/30/21 20:36	16984-48-8	
Sulfate	22.1	mg/L	2.0	0.84	2		04/30/21 20:52	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P29D **Lab ID: 60367583021** Collected: 04/26/21 09:55 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	145	ug/L	5.0	1.8	1	04/30/21 13:00	05/10/21 22:12	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	04/30/21 13:00	05/10/21 22:12	7440-41-7	
Boron	91.6J	ug/L	100	8.6	1	04/30/21 13:00	05/10/21 22:12	7440-42-8	
Calcium	90800	ug/L	200	75.4	1	04/30/21 13:00	05/10/21 22:12	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	04/30/21 13:00	05/10/21 22:12	7440-48-4	
Iron	3790	ug/L	50.0	21.4	1	04/30/21 13:00	05/10/21 22:12	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	04/30/21 13:00	05/10/21 22:12	7439-92-1	
Lithium	39.4	ug/L	10.0	7.7	1	04/30/21 13:00	05/10/21 22:12	7439-93-2	
Magnesium	27600	ug/L	50.0	31.4	1	04/30/21 13:00	05/10/21 22:12	7439-95-4	
Manganese	141	ug/L	5.0	0.74	1	04/30/21 13:00	05/10/21 22:12	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	04/30/21 13:00	05/10/21 22:12	7439-98-7	
Potassium	4760	ug/L	500	146	1	04/30/21 13:00	05/10/21 22:12	7440-09-7	
Sodium	60000	ug/L	500	254	1	04/30/21 13:00	05/10/21 22:12	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/06/21 10:54	05/11/21 13:21	7440-36-0	
Arsenic	0.86J	ug/L	1.0	0.11	1	05/06/21 10:54	05/11/21 13:21	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/06/21 10:54	05/11/21 13:21	7440-43-9	
Chromium	0.37J	ug/L	1.0	0.23	1	05/06/21 10:54	05/11/21 13:21	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/06/21 10:54	05/11/21 13:21	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/06/21 10:54	05/11/21 13:21	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/11/21 09:30	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	321	mg/L	20.0	7.5	1		05/06/21 19:34		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	477	mg/L	10.0	10.0	1		04/30/21 11:09		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	3.7	mg/L	0.050		1		05/17/21 11:39	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.11J	mg/L	0.20	0.048	1		05/10/21 12:17		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P29D **Lab ID: 60367583021** Collected: 04/26/21 09:55 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/28/21 11:00	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	75.9	mg/L	10.0	3.9	10		04/30/21 22:27	16887-00-6	
Fluoride	0.29	mg/L	0.20	0.086	1		04/30/21 21:24	16984-48-8	
Sulfate	19.7	mg/L	2.0	0.84	2		04/30/21 21:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P30S **Lab ID: 60367583022** Collected: 04/26/21 12:40 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	92.4	ug/L	5.0	1.8	1	04/30/21 13:00	05/13/21 14:28	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	04/30/21 13:00	05/13/21 14:28	7440-41-7	
Boron	1100	ug/L	100	8.6	1	04/30/21 13:00	05/13/21 14:28	7440-42-8	
Calcium	126000	ug/L	200	75.4	1	04/30/21 13:00	05/13/21 14:28	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	04/30/21 13:00	05/13/21 14:28	7440-48-4	
Iron	229	ug/L	50.0	21.4	1	04/30/21 13:00	05/13/21 14:28	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	04/30/21 13:00	05/13/21 14:28	7439-92-1	
Lithium	36.6	ug/L	10.0	7.7	1	04/30/21 13:00	05/13/21 14:28	7439-93-2	
Magnesium	21500	ug/L	50.0	31.4	1	04/30/21 13:00	05/13/21 14:28	7439-95-4	
Manganese	322	ug/L	5.0	0.74	1	04/30/21 13:00	05/13/21 14:28	7439-96-5	
Molybdenum	2.3J	ug/L	20.0	2.2	1	04/30/21 13:00	05/13/21 14:28	7439-98-7	
Potassium	6740	ug/L	500	146	1	04/30/21 13:00	05/13/21 14:28	7440-09-7	
Sodium	65000	ug/L	500	254	1	04/30/21 13:00	05/13/21 14:28	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/06/21 10:54	05/11/21 13:24	7440-36-0	
Arsenic	0.88J	ug/L	1.0	0.11	1	05/06/21 10:54	05/11/21 13:24	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/06/21 10:54	05/11/21 13:24	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.23	1	05/06/21 10:54	05/11/21 13:24	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/06/21 10:54	05/11/21 13:24	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/06/21 10:54	05/11/21 13:24	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/11/21 09:32	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	303	mg/L	20.0	7.5	1		05/06/21 19:40		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	633	mg/L	10.0	10.0	1		04/30/21 11:09		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.23	mg/L	0.050		1		05/17/21 11:39	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.048	mg/L	0.20	0.048	1		05/10/21 12:18		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P30S **Lab ID: 60367583022** Collected: 04/26/21 12:40 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/28/21 11:03	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	47.6	mg/L	5.0	1.9	5		04/30/21 22:59	16887-00-6	
Fluoride	0.44	mg/L	0.20	0.086	1		04/30/21 22:43	16984-48-8	
Sulfate	131	mg/L	20.0	8.4	20		04/30/21 23:14	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P31S **Lab ID: 60367583023** Collected: 04/26/21 09:41 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	173	ug/L	5.0	1.8	1	04/30/21 13:00	05/10/21 22:17	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	04/30/21 13:00	05/10/21 22:17	7440-41-7	
Boron	339	ug/L	100	8.6	1	04/30/21 13:00	05/10/21 22:17	7440-42-8	
Calcium	72400	ug/L	200	75.4	1	04/30/21 13:00	05/10/21 22:17	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	04/30/21 13:00	05/10/21 22:17	7440-48-4	
Iron	4810	ug/L	50.0	21.4	1	04/30/21 13:00	05/10/21 22:17	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	04/30/21 13:00	05/10/21 22:17	7439-92-1	
Lithium	11.6	ug/L	10.0	7.7	1	04/30/21 13:00	05/10/21 22:17	7439-93-2	
Magnesium	13200	ug/L	50.0	31.4	1	04/30/21 13:00	05/10/21 22:17	7439-95-4	
Manganese	1220	ug/L	5.0	0.74	1	04/30/21 13:00	05/10/21 22:17	7439-96-5	
Molybdenum	8.8J	ug/L	20.0	2.2	1	04/30/21 13:00	05/10/21 22:17	7439-98-7	
Potassium	4880	ug/L	500	146	1	04/30/21 13:00	05/10/21 22:17	7440-09-7	
Sodium	12300	ug/L	500	254	1	04/30/21 13:00	05/10/21 22:17	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony	<0.10	ug/L	1.0	0.10	1	05/06/21 10:54	05/11/21 13:26	7440-36-0	
Arsenic	17.0	ug/L	1.0	0.11	1	05/06/21 10:54	05/11/21 13:26	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/06/21 10:54	05/11/21 13:26	7440-43-9	
Chromium	0.34J	ug/L	1.0	0.23	1	05/06/21 10:54	05/11/21 13:26	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/06/21 10:54	05/11/21 13:26	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/06/21 10:54	05/11/21 13:26	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City							
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/11/21 09:35	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	230	mg/L	20.0	7.5	1		05/06/21 19:44		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	304	mg/L	5.0	5.0	1		04/30/21 11:09		
Iron, Ferric (Calculation)		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferric	4.5	mg/L	0.050		1		05/27/21 14:17	7439-89-6	
Iron, Ferrous		Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City							
Iron, Ferrous	0.31	mg/L	0.20	0.048	1		05/10/21 12:16		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P31S **Lab ID: 60367583023** Collected: 04/26/21 09:41 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	0.029J	mg/L	0.050	0.026	1		04/28/21 11:04	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	3.4	mg/L	1.0	0.39	1		04/30/21 23:30	16887-00-6	
Fluoride	0.44	mg/L	0.20	0.086	1		04/30/21 23:30	16984-48-8	
Sulfate	28.8	mg/L	2.0	0.84	2		04/30/21 23:46	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-FB-2 **Lab ID: 60367583024** Collected: 04/26/21 13:05 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<1.8	ug/L	5.0	1.8	1	04/30/21 13:00	05/10/21 22:20	7440-39-3	
Beryllium	<0.39	ug/L	1.0	0.39	1	04/30/21 13:00	05/10/21 22:20	7440-41-7	
Boron	<8.6	ug/L	100	8.6	1	04/30/21 13:00	05/10/21 22:20	7440-42-8	
Calcium	<75.4	ug/L	200	75.4	1	04/30/21 13:00	05/10/21 22:20	7440-70-2	
Cobalt	<0.95	ug/L	5.0	0.95	1	04/30/21 13:00	05/10/21 22:20	7440-48-4	
Iron	<21.4	ug/L	50.0	21.4	1	04/30/21 13:00	05/10/21 22:20	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	04/30/21 13:00	05/10/21 22:20	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	04/30/21 13:00	05/10/21 22:20	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	04/30/21 13:00	05/10/21 22:20	7439-95-4	
Manganese	<0.74	ug/L	5.0	0.74	1	04/30/21 13:00	05/10/21 22:20	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	04/30/21 13:00	05/10/21 22:20	7439-98-7	
Potassium	<146	ug/L	500	146	1	04/30/21 13:00	05/10/21 22:20	7440-09-7	
Sodium	<254	ug/L	500	254	1	04/30/21 13:00	05/10/21 22:20	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	05/06/21 10:54	05/11/21 13:28	7440-36-0	
Arsenic	<0.11	ug/L	1.0	0.11	1	05/06/21 10:54	05/11/21 13:28	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	05/06/21 10:54	05/11/21 13:28	7440-43-9	
Chromium	0.33J	ug/L	1.0	0.23	1	05/06/21 10:54	05/11/21 13:28	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/06/21 10:54	05/11/21 13:28	7782-49-2	
Thallium	<0.094	ug/L	1.0	0.094	1	05/06/21 10:54	05/11/21 13:28	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.096	ug/L	0.20	0.096	1	05/10/21 17:40	05/11/21 09:37	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<7.5	mg/L	20.0	7.5	1		05/06/21 19:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		04/30/21 11:09		
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		05/04/21 14:31		H5
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0035J	mg/L	0.050		1		05/27/21 14:17	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.048	mg/L	0.20	0.048	1		05/10/21 12:18		H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-FB-2 **Lab ID: 60367583024** Collected: 04/26/21 13:05 Received: 04/27/21 03:43 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.026	mg/L	0.050	0.026	1		04/28/21 11:14	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.39	mg/L	1.0	0.39	1		05/01/21 00:02	16887-00-6	
Fluoride	<0.086	mg/L	0.20	0.086	1		05/01/21 00:02	16984-48-8	
Sulfate	<0.42	mg/L	1.0	0.42	1		05/01/21 00:02	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch:	719266	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60367583020, 60367583021, 60367583022, 60367583023, 60367583024		

METHOD BLANK: 2892521 Matrix: Water
Associated Lab Samples: 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	05/11/21 09:23	

LABORATORY CONTROL SAMPLE: 2892522

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2892523 2892524

Parameter	Units	60366962021		2892523		2892524		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS % Rec	MSD % Rec				
Mercury	ug/L	<0.096	5	5	5.1	5.1	102	101	75-125	1	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2892525 2892526

Parameter	Units	60366962023		2892525		2892526		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS % Rec	MSD % Rec				
Mercury	ug/L	<0.096	5	5	4.8	4.8	96	96	75-125	0	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2892527 2892528

Parameter	Units	60366962032		2892527		2892528		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS % Rec	MSD % Rec				
Mercury	ug/L		5	5	4.6	4.7	92	95	75-125	3	20

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 719268

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015, 60367583016, 60367583017

METHOD BLANK: 2892533

Matrix: Water

Associated Lab Samples: 60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015, 60367583016, 60367583017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	05/14/21 12:34	

LABORATORY CONTROL SAMPLE: 2892534

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.4	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2892535 2892536

Parameter	Units	60367583001		2892536		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	<0.096	5	5	4.9	4.9	97	98	75-125	1	20

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 717917 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: 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

METHOD BLANK: 2887521 Matrix: Water

Associated Lab Samples: 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/10/21 21:21	
Beryllium	ug/L	<0.39	1.0	0.39	05/10/21 21:21	
Boron	ug/L	<8.6	100	8.6	05/10/21 21:21	
Calcium	ug/L	<75.4	200	75.4	05/10/21 21:21	
Cobalt	ug/L	<0.95	5.0	0.95	05/10/21 21:21	
Iron	ug/L	<21.4	50.0	21.4	05/10/21 21:21	
Lead	ug/L	<3.8	10.0	3.8	05/10/21 21:21	
Lithium	ug/L	<7.7	10.0	7.7	05/10/21 21:21	
Magnesium	ug/L	<31.4	50.0	31.4	05/10/21 21:21	
Manganese	ug/L	<0.74	5.0	0.74	05/10/21 21:21	
Molybdenum	ug/L	<2.2	20.0	2.2	05/10/21 21:21	
Potassium	ug/L	189J	500	146	05/10/21 21:21	
Sodium	ug/L	<254	500	254	05/10/21 21:21	

LABORATORY CONTROL SAMPLE: 2887522

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1080	108	85-115	
Beryllium	ug/L	1000	1080	108	85-115	
Boron	ug/L	1000	1050	105	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Cobalt	ug/L	1000	1120	112	85-115	
Iron	ug/L	10000	9810	98	85-115	
Lead	ug/L	1000	1090	109	85-115	
Lithium	ug/L	1000	1060	106	85-115	
Magnesium	ug/L	10000	10900	109	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Molybdenum	ug/L	1000	1140	114	85-115	
Potassium	ug/L	10000	10600	106	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE SAMPLE: 2887523

Parameter	Units	60367051013 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	94.1	1000	1180	109	70-130	
Beryllium	ug/L	<0.39	1000	1090	109	70-130	
Boron	ug/L	4560	1000	5740	118	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

MATRIX SPIKE SAMPLE: 2887523		60367051013	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Calcium	ug/L	73600	10000	87300	137	70-130	M1
Cobalt	ug/L	<0.95	1000	1070	107	70-130	
Iron	ug/L	295	10000	10400	102	70-130	
Lead	ug/L	<3.8	1000	1050	105	70-130	
Lithium	ug/L	33.4	1000	1100	106	70-130	
Magnesium	ug/L	8730	10000	19400	106	70-130	
Manganese	ug/L	316	1000	1360	104	70-130	
Molybdenum	ug/L	138	1000	1260	112	70-130	
Potassium	ug/L	9650	10000	20600	109	70-130	
Sodium	ug/L	105000	10000	121000	155	70-130	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2887524		2887525									
Parameter	Units	60366962021	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	
Barium	ug/L	1520	1000	1000	2610	2640	109	112	70-130	1	20
Beryllium	ug/L	<0.39	1000	1000	1090	1100	109	110	70-130	0	20
Boron	ug/L	78.3J	1000	1000	1130	1130	105	105	70-130	0	20
Calcium	ug/L	145000	10000	10000	157000	159000	124	147	70-130	1	20 M1
Cobalt	ug/L	<0.95	1000	1000	1050	1050	105	105	70-130	0	20
Iron	ug/L	8300	10000	10000	18500	18700	102	104	70-130	1	20
Lead	ug/L	<3.8	1000	1000	1070	1070	107	107	70-130	0	20
Lithium	ug/L	17.7	1000	1000	1100	1110	109	109	70-130	0	20
Magnesium	ug/L	37900	10000	10000	48700	49300	108	114	70-130	1	20
Manganese	ug/L	245	1000	1000	1290	1300	104	105	70-130	1	20
Molybdenum	ug/L	<2.2	1000	1000	1110	1120	111	112	70-130	0	20
Potassium	ug/L	4640	10000	10000	15300	15500	106	109	70-130	2	20
Sodium	ug/L	12500	10000	10000	23200	23600	107	110	70-130	1	20

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60367583

QC Batch: 719402 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: 60367583001, 60367583002, 60367583003, 60367583004

METHOD BLANK: 2893278 Matrix: Water
Associated Lab Samples: 60367583001, 60367583002, 60367583003, 60367583004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/13/21 22:07	
Beryllium	ug/L	<0.39	1.0	0.39	05/13/21 22:07	
Boron	ug/L	11.4J	100	8.6	05/13/21 22:07	
Calcium	ug/L	<75.4	200	75.4	05/13/21 22:07	
Cobalt	ug/L	<0.95	5.0	0.95	05/13/21 22:07	
Iron	ug/L	<21.4	50.0	21.4	05/13/21 22:07	
Lead	ug/L	<3.8	10.0	3.8	05/13/21 22:07	
Lithium	ug/L	<7.7	10.0	7.7	05/13/21 22:07	
Magnesium	ug/L	<31.4	50.0	31.4	05/13/21 22:07	
Manganese	ug/L	<0.74	5.0	0.74	05/13/21 22:07	
Molybdenum	ug/L	<2.2	20.0	2.2	05/13/21 22:07	
Potassium	ug/L	<146	500	146	05/13/21 22:07	
Sodium	ug/L	<254	500	254	05/13/21 22:07	

LABORATORY CONTROL SAMPLE: 2893279

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	967	97	85-115	
Beryllium	ug/L	1000	981	98	85-115	
Boron	ug/L	1000	958	96	85-115	
Calcium	ug/L	10000	9660	97	85-115	
Cobalt	ug/L	1000	980	98	85-115	
Iron	ug/L	10000	9540	95	85-115	
Lead	ug/L	1000	1030	103	85-115	
Lithium	ug/L	1000	997	100	85-115	
Magnesium	ug/L	10000	9870	99	85-115	
Manganese	ug/L	1000	1000	100	85-115	
Molybdenum	ug/L	1000	992	99	85-115	
Potassium	ug/L	10000	9820	98	85-115	
Sodium	ug/L	10000	9620	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893280 2893281

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60367582003	Result	Spike Conc.	Spike Conc.								
Barium	ug/L	22.1	1000	1000	976	968	95	95	70-130	1	20		
Beryllium	ug/L	<0.39	1000	1000	985	970	98	97	70-130	1	20		

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893280												2893281	
Parameter	Units	60367582003 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Boron	ug/L	14600	1000	1000	15400	15300	84	74	70-130	1	20		
Calcium	ug/L	7180	10000	10000	16500	16400	93	92	70-130	1	20		
Cobalt	ug/L	<0.95	1000	1000	962	949	96	95	70-130	1	20		
Iron	ug/L	203	10000	10000	9700	9540	95	93	70-130	2	20		
Lead	ug/L	4.2J	1000	1000	990	973	99	97	70-130	2	20		
Lithium	ug/L	<7.7	1000	1000	965	953	96	95	70-130	1	20		
Magnesium	ug/L	345	10000	10000	9860	9700	95	94	70-130	2	20		
Manganese	ug/L	11.0	1000	1000	1000	983	99	97	70-130	2	20		
Molybdenum	ug/L	789	1000	1000	1770	1760	98	97	70-130	1	20		
Potassium	ug/L	2050	10000	10000	11800	11600	97	96	70-130	1	20		
Sodium	ug/L	237000	10000	10000	242000	240000	57	36	70-130	1	20	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893282												2893283	
Parameter	Units	60367583001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Barium	ug/L	166	1000	1000	1110	1100	94	93	70-130	1	20		
Beryllium	ug/L	<0.39	1000	1000	966	958	97	96	70-130	1	20		
Boron	ug/L	4240	1000	1000	5140	5110	89	86	70-130	1	20		
Calcium	ug/L	62800	10000	10000	70900	70200	81	73	70-130	1	20		
Cobalt	ug/L	<0.95	1000	1000	928	922	93	92	70-130	1	20		
Iron	ug/L	8720	10000	10000	17600	17400	89	87	70-130	1	20		
Lead	ug/L	4.1J	1000	1000	973	965	97	96	70-130	1	20		
Lithium	ug/L	13.9	1000	1000	961	958	95	94	70-130	0	20		
Magnesium	ug/L	21700	10000	10000	30800	30400	90	87	70-130	1	20		
Manganese	ug/L	353	1000	1000	1300	1290	95	94	70-130	1	20		
Molybdenum	ug/L	9.2J	1000	1000	980	975	97	97	70-130	1	20		
Potassium	ug/L	5470	10000	10000	15100	15000	96	95	70-130	1	20		
Sodium	ug/L	25600	10000	10000	34100	33800	84	82	70-130	1	20		

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60367583

QC Batch: 719416 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: 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015, 60367583016, 60367583017

METHOD BLANK: 2893299 Matrix: Water
Associated Lab Samples: 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015, 60367583016, 60367583017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/13/21 20:59	
Beryllium	ug/L	<0.39	1.0	0.39	05/13/21 20:59	
Boron	ug/L	<8.6	100	8.6	05/13/21 20:59	
Calcium	ug/L	<75.4	200	75.4	05/13/21 20:59	
Cobalt	ug/L	<0.95	5.0	0.95	05/13/21 20:59	
Iron	ug/L	<21.4	50.0	21.4	05/13/21 20:59	
Lead	ug/L	<3.8	10.0	3.8	05/13/21 20:59	
Lithium	ug/L	<7.7	10.0	7.7	05/13/21 20:59	
Magnesium	ug/L	<31.4	50.0	31.4	05/13/21 20:59	
Manganese	ug/L	<0.74	5.0	0.74	05/13/21 20:59	
Molybdenum	ug/L	<2.2	20.0	2.2	05/13/21 20:59	
Potassium	ug/L	<146	500	146	05/13/21 20:59	
Sodium	ug/L	<254	500	254	05/13/21 20:59	

LABORATORY CONTROL SAMPLE: 2893300

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	983	98	85-115	
Beryllium	ug/L	1000	1000	100	85-115	
Boron	ug/L	1000	951	95	85-115	
Calcium	ug/L	10000	9770	98	85-115	
Cobalt	ug/L	1000	992	99	85-115	
Iron	ug/L	10000	9690	97	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1020	102	85-115	
Magnesium	ug/L	10000	9950	99	85-115	
Manganese	ug/L	1000	1000	100	85-115	
Molybdenum	ug/L	1000	1000	100	85-115	
Potassium	ug/L	10000	9920	99	85-115	
Sodium	ug/L	10000	9800	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893301 2893302

Parameter	Units	60367583007 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Barium	ug/L	418	1000	1000	1340	1390	92	98	70-130	4	20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893301												2893302	
Parameter	Units	60367583007		MS	MSD	MS	MSD	MS	MSD	% Rec	Max		
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Beryllium	ug/L	<0.39	1000	1000	1000	984	1010	98	101	70-130	2	20	
Boron	ug/L	717	1000	1000	1000	1620	1680	90	97	70-130	4	20	
Calcium	ug/L	184000	10000	10000	10000	178000	192000	-59	83	70-130	8	20 M1	
Cobalt	ug/L	1.0J	1000	1000	1000	937	954	94	95	70-130	2	20	
Iron	ug/L	17700	10000	10000	10000	25500	27000	78	93	70-130	6	20	
Lead	ug/L	6.3J	1000	1000	1000	984	992	98	99	70-130	1	20	
Lithium	ug/L	42.9	1000	1000	1000	1020	1050	98	100	70-130	2	20	
Magnesium	ug/L	35500	10000	10000	10000	42200	44700	68	92	70-130	6	20 M1	
Manganese	ug/L	1290	1000	1000	1000	2160	2270	87	97	70-130	5	20	
Molybdenum	ug/L	4.6J	1000	1000	1000	996	1010	99	101	70-130	2	20	
Potassium	ug/L	7910	10000	10000	10000	17000	17700	91	98	70-130	4	20	
Sodium	ug/L	34300	10000	10000	10000	40800	43400	65	91	70-130	6	20 M1	

MATRIX SPIKE SAMPLE: 2893303											
Parameter	Units	60367583013		Spike	MS	MS	% Rec				
		Result	Conc.	Conc.	Result	% Rec	Limits	Qualifiers			
Barium	ug/L		144	1000	1110	96	70-130				
Beryllium	ug/L		<0.39	1000	988	99	70-130				
Boron	ug/L		489	1000	1460	97	70-130				
Calcium	ug/L		215000	10000	218000	30	70-130	M1			
Cobalt	ug/L		2.1J	1000	942	94	70-130				
Iron	ug/L		2880	10000	12200	93	70-130				
Lead	ug/L		4.7J	1000	986	98	70-130				
Lithium	ug/L		56.0	1000	1040	98	70-130				
Magnesium	ug/L		49500	10000	57600	80	70-130				
Manganese	ug/L		721	1000	1680	96	70-130				
Molybdenum	ug/L		9.3J	1000	1010	100	70-130				
Potassium	ug/L		7640	10000	17300	96	70-130				
Sodium	ug/L		54500	10000	61900	74	70-130				

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch:	718826	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: 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

METHOD BLANK: 2890941

Matrix: Water

Associated Lab Samples: 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.10	1.0	0.10	05/11/21 13:15	
Arsenic	ug/L	<0.11	1.0	0.11	05/11/21 13:15	
Cadmium	ug/L	<0.062	0.50	0.062	05/11/21 13:15	
Chromium	ug/L	<0.23	1.0	0.23	05/11/21 13:15	
Selenium	ug/L	<0.18	1.0	0.18	05/11/21 13:15	
Thallium	ug/L	<0.094	1.0	0.094	05/11/21 13:15	

LABORATORY CONTROL SAMPLE: 2890943

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.7	97	85-115	
Arsenic	ug/L	40	39.7	99	85-115	
Cadmium	ug/L	40	39.8	100	85-115	
Chromium	ug/L	40	39.0	98	85-115	
Selenium	ug/L	40	40.2	101	85-115	
Thallium	ug/L	40	36.7	92	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2890944 2890945

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result	% Rec	% Rec						
Antimony	ug/L	ND	40	40	40.8	38.6	101	95	70-130	6	20		
Arsenic	ug/L	1.2	40	40	42.4	40.4	103	98	70-130	5	20		
Cadmium	ug/L	ND	40	40	39.5	37.6	99	94	70-130	5	20		
Chromium	ug/L	ND	40	40	40.0	37.6	98	92	70-130	6	20		
Selenium	ug/L	3.5	40	40	42.1	39.8	96	91	70-130	5	20		
Thallium	ug/L	ND	40	40	40.0	37.9	100	95	70-130	5	20		

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60367583

QC Batch: 719408 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: 60367583001, 60367583002, 60367583003, 60367583004

METHOD BLANK: 2893284 Matrix: Water
Associated Lab Samples: 60367583001, 60367583002, 60367583003, 60367583004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.10	1.0	0.10	06/02/21 08:17	
Arsenic	ug/L	<0.11	1.0	0.11	06/01/21 17:23	
Cadmium	ug/L	<0.062	0.50	0.062	06/01/21 17:23	
Chromium	ug/L	0.44J	1.0	0.23	06/01/21 17:23	
Selenium	ug/L	<0.18	1.0	0.18	06/01/21 17:23	
Thallium	ug/L	<0.094	1.0	0.094	06/01/21 17:23	

LABORATORY CONTROL SAMPLE: 2893285

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	43.0	107	85-115	
Arsenic	ug/L	40	41.8	104	85-115	
Cadmium	ug/L	40	42.1	105	85-115	
Chromium	ug/L	40	42.8	107	85-115	
Selenium	ug/L	40	42.7	107	85-115	
Thallium	ug/L	40	39.1	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893286 2893287

Parameter	Units	60367582003		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Antimony	ug/L	<0.10	40	40	42.3	41.4	106	103	70-130	2	20		
Arsenic	ug/L	34.2	40	40	74.3	74.7	100	101	70-130	1	20		
Cadmium	ug/L	0.13J	40	40	40.2	39.8	100	99	70-130	1	20		
Chromium	ug/L	0.79J	40	40	41.3	40.9	101	100	70-130	1	20		
Selenium	ug/L	0.73J	40	40	38.2	38.0	94	93	70-130	1	20		
Thallium	ug/L	<0.094	40	40	42.1	41.6	105	104	70-130	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893288 2893289

Parameter	Units	60367583001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Antimony	ug/L	<0.10	40	40	41.7	42.2	104	105	70-130	1	20		
Arsenic	ug/L	157	40	40	186	194	72	94	70-130	5	20		
Cadmium	ug/L	<0.062	40	40	38.8	40.1	97	100	70-130	3	20		
Chromium	ug/L	0.44J	40	40	40.3	41.7	100	103	70-130	3	20		

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Parameter	Units	2893288		2893289		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60367583001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Selenium	ug/L	<0.18	40	40	38.8	39.5	97	98	70-130	2	20		
Thallium	ug/L	<0.094	40	40	38.6	40.1	96	100	70-130	4	20		

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60367583

QC Batch: 719417 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: 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015, 60367583016, 60367583017

METHOD BLANK: 2893304 Matrix: Water
Associated Lab Samples: 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015, 60367583016, 60367583017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.10	1.0	0.10	06/02/21 08:53	
Arsenic	ug/L	<0.11	1.0	0.11	06/01/21 18:13	
Cadmium	ug/L	<0.062	0.50	0.062	06/01/21 18:13	
Chromium	ug/L	<0.23	1.0	0.23	06/01/21 18:13	
Selenium	ug/L	<0.18	1.0	0.18	06/01/21 18:13	
Thallium	ug/L	<0.094	1.0	0.094	06/01/21 18:13	

LABORATORY CONTROL SAMPLE: 2893305

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	42.6	106	85-115	
Arsenic	ug/L	40	41.0	102	85-115	
Cadmium	ug/L	40	42.0	105	85-115	
Chromium	ug/L	40	42.3	106	85-115	
Selenium	ug/L	40	41.8	104	85-115	
Thallium	ug/L	40	39.2	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893306 2893307

Parameter	Units	60367583006		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.								
Antimony	ug/L	<0.10	40	40	40	42.1	42.7	105	107	70-130	1	20	
Arsenic	ug/L	1.2	40	40	40	41.9	42.2	102	102	70-130	1	20	
Cadmium	ug/L	<0.062	40	40	40	39.6	40.3	99	101	70-130	2	20	
Chromium	ug/L	0.36J	40	40	40	40.8	41.0	101	102	70-130	0	20	
Selenium	ug/L	0.22J	40	40	40	38.6	39.2	96	98	70-130	2	20	
Thallium	ug/L	<0.094	40	40	40	40.5	41.2	101	103	70-130	2	20	

MATRIX SPIKE SAMPLE: 2893308

Parameter	Units	60367583013 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.10	40	41.0	102	70-130	
Arsenic	ug/L	3.3	40	43.1	100	70-130	
Cadmium	ug/L	0.086J	40	39.0	97	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

MATRIX SPIKE SAMPLE:		2893308					
Parameter	Units	60367583013 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	0.41J	40	40.1	99	70-130	
Selenium	ug/L	0.52J	40	38.2	94	70-130	
Thallium	ug/L	<0.094	40	41.3	103	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch:	718470	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583013, 60367583014		

METHOD BLANK:	2889670	Matrix:	Water
Associated Lab Samples:	60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583013, 60367583014		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<7.5	20.0	7.5	05/05/21 08:44	

LABORATORY CONTROL SAMPLE: 2889671						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	505	101	90-110	

SAMPLE DUPLICATE: 2889672						
Parameter	Units	60367824001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	818	848	4	10	

SAMPLE DUPLICATE: 2889673						
Parameter	Units	60367583001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	294	287	2	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 718561

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60367583010, 60367583011, 60367583012, 60367583015, 60367583016, 60367583017

METHOD BLANK: 2889949

Matrix: Water

Associated Lab Samples: 60367583010, 60367583011, 60367583012, 60367583015, 60367583016, 60367583017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<7.5	20.0	7.5	05/05/21 17:28	

LABORATORY CONTROL SAMPLE: 2889950

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	497	99	90-110	

SAMPLE DUPLICATE: 2889951

Parameter	Units	60367534001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	380	395	4	10	

SAMPLE DUPLICATE: 2889952

Parameter	Units	60367582003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	273	280	2	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch:	718981	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

METHOD BLANK: 2891589 Matrix: Water
Associated Lab Samples: 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<7.5	20.0	7.5	05/06/21 19:02	

LABORATORY CONTROL SAMPLE: 2891590

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

SAMPLE DUPLICATE: 2891591

Parameter	Units	60367859002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	711	719	1	10	

SAMPLE DUPLICATE: 2891592

Parameter	Units	60367835005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	383	394	3	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch:	717397	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583013, 60367583014

METHOD BLANK: 2885502 Matrix: Water

Associated Lab Samples: 60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583013, 60367583014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/29/21 10:13	

LABORATORY CONTROL SAMPLE: 2885503

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 2885504

Parameter	Units	60367582008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	311	243	25	10	D6

SAMPLE DUPLICATE: 2885505

Parameter	Units	60367583013 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	0	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch:	717531	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60367583010, 60367583011, 60367583012, 60367583015, 60367583016, 60367583017, 60367583020

METHOD BLANK: 2885879 Matrix: Water

Associated Lab Samples: 60367583010, 60367583011, 60367583012, 60367583015, 60367583016, 60367583017, 60367583020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/29/21 10:02	

LABORATORY CONTROL SAMPLE: 2885880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 2885881

Parameter	Units	60367582003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	540	683	23	10	D6

SAMPLE DUPLICATE: 2885882

Parameter	Units	60367583016 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	385	372	3	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 717766

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60367583021, 60367583022, 60367583023, 60367583024

METHOD BLANK: 2886814

Matrix: Water

Associated Lab Samples: 60367583021, 60367583022, 60367583023, 60367583024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/30/21 11:09	

LABORATORY CONTROL SAMPLE: 2886815

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	996	100	80-120	

SAMPLE DUPLICATE: 2886816

Parameter	Units	60367583021 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	477	481	1	10	

SAMPLE DUPLICATE: 2886817

Parameter	Units	60367835003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	485	619	24	10 D6	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 718394

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60367583024

METHOD BLANK: 2889459

Matrix: Water

Associated Lab Samples: 60367583024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/04/21 14:31	

LABORATORY CONTROL SAMPLE: 2889460

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	998	100	80-120	

SAMPLE DUPLICATE: 2889464

Parameter	Units	60367761001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	646	659	2	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 718252

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: 60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583013, 60367583014, 60367583015

METHOD BLANK: 2888724

Matrix: Water

Associated Lab Samples: 60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583013, 60367583014, 60367583015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.048	0.20	0.048	05/10/21 12:02	H6

LABORATORY CONTROL SAMPLE: 2888725

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.0	102	90-110	H6

SAMPLE DUPLICATE: 2888726

Parameter	Units	60367051015 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.36	0.37	2	20	H6

SAMPLE DUPLICATE: 2888727

Parameter	Units	60367583001 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	1.0	1.1	4	20	H6

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 718253

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: 60367583010, 60367583011, 60367583012, 60367583016, 60367583017, 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

METHOD BLANK: 2888728

Matrix: Water

Associated Lab Samples: 60367583010, 60367583011, 60367583012, 60367583016, 60367583017, 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.048	0.20	0.048	05/10/21 12:11	H6

LABORATORY CONTROL SAMPLE: 2888729

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.0	102	90-110	H6

SAMPLE DUPLICATE: 2888730

Parameter	Units	60367583016 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.25	0.24	3	20	H6

SAMPLE DUPLICATE: 2888731

Parameter	Units	60367582003 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.33	0.33	1	20	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60367583

QC Batch: 716876 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: 60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014

METHOD BLANK: 2884010 Matrix: Water
Associated Lab Samples: 60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.026	0.050	0.026	04/27/21 10:39	

LABORATORY CONTROL SAMPLE: 2884011

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.53	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2884012 2884013

Parameter	Units	60367582006 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	<0.026	0.5	0.5	0.53	0.50	102	97	75-125	6	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2884015 2884016

Parameter	Units	60367583001 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	0.033J	0.5	0.5	0.55	0.56	104	106	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2884019 2884020

Parameter	Units	60367582003 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	0.36	0.5	0.5	0.76	0.76	81	80	75-125	0	20	

SAMPLE DUPLICATE: 2884014

Parameter	Units	60367582007 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.044J	0.043J		20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

SAMPLE DUPLICATE: 2884017

Parameter	Units	60367583001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.033J	0.033J		20	

SAMPLE DUPLICATE: 2884018

Parameter	Units	60367583008 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	5.0	5.1	3	20	

SAMPLE DUPLICATE: 2884021

Parameter	Units	60367582003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.36	0.35	2	20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 717193

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: 60367583015, 60367583016, 60367583017, 60367583020, 60367583021, 60367583022, 60367583023

METHOD BLANK: 2884971

Matrix: Water

Associated Lab Samples: 60367583015, 60367583016, 60367583017, 60367583020, 60367583021, 60367583022, 60367583023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.026	0.050	0.026	04/28/21 10:38	

LABORATORY CONTROL SAMPLE: 2884972

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.54	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2884973 2884974

Parameter	Units	60366935001		60367583015		60367583021		60367583022		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Sulfide, Total	mg/L	0.39	0.5	0.5	0.5	0.90	0.89	100	100	75-125	0	20	H1

SAMPLE DUPLICATE: 2884975

Parameter	Units	60367583015 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.026	<0.026		20	

SAMPLE DUPLICATE: 2884976

Parameter	Units	60367656004 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.026		20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 717221	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: 60367583024

METHOD BLANK: 2885090 Matrix: Water

Associated Lab Samples: 60367583024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.026	0.050	0.026	04/28/21 11:05	

LABORATORY CONTROL SAMPLE: 2885091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.54	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2885092 2885093

Parameter	Units	60367583024		2885093		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Sulfide, Total	mg/L	<0.026	0.5	0.5	0.60	0.60	115	116	75-125	1	20

SAMPLE DUPLICATE: 2885094

Parameter	Units	60367746002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	2.6	2.6	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 717700 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: 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

METHOD BLANK: 2886614 Matrix: Water
 Associated Lab Samples: 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	04/30/21 18:03	
Fluoride	mg/L	<0.086	0.20	0.086	04/30/21 18:03	
Sulfate	mg/L	<0.42	1.0	0.42	04/30/21 18:03	

METHOD BLANK: 2888963 Matrix: Water
 Associated Lab Samples: 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/03/21 09:20	
Fluoride	mg/L	<0.086	0.20	0.086	05/03/21 09:20	
Sulfate	mg/L	<0.42	1.0	0.42	05/03/21 09:20	

METHOD BLANK: 2889425 Matrix: Water
 Associated Lab Samples: 60367583020, 60367583021, 60367583022, 60367583023, 60367583024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/04/21 09:48	
Fluoride	mg/L	<0.086	0.20	0.086	05/04/21 09:48	
Sulfate	mg/L	<0.42	1.0	0.42	05/04/21 09:48	

LABORATORY CONTROL SAMPLE: 2886615

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

LABORATORY CONTROL SAMPLE: 2888964

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	2.4	97	90-110	
Sulfate	mg/L	5	4.9	99	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

LABORATORY CONTROL SAMPLE: 2889426

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.2	103	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE SAMPLE: 2886616

Parameter	Units	60367827001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	187	100	322	135	80-120	M1
Fluoride	mg/L	ND	50	69.3	134	80-120	
Sulfate	mg/L	97.1	100	221	123	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2886617 2886618

Parameter	Units	60366962023 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	22.0	10	10	33.7	33.7	117	117	80-120	0	15	
Fluoride	mg/L	0.45	2.5	2.5	3.1	3.1	104	105	80-120	1	15	
Sulfate	mg/L	155	50	50	212	211	113	113	80-120	0	15	E

SAMPLE DUPLICATE: 2886619

Parameter	Units	60366962023 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	22.0	21.9	0	15	
Fluoride	mg/L	0.45	0.46	1	15	
Sulfate	mg/L	155	155	0	15	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 718359

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: 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015

METHOD BLANK: 2889292

Matrix: Water

Associated Lab Samples: 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/06/21 08:59	
Fluoride	mg/L	<0.086	0.20	0.086	05/06/21 08:59	
Sulfate	mg/L	<0.42	1.0	0.42	05/06/21 08:59	

METHOD BLANK: 2894180

Matrix: Water

Associated Lab Samples: 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/07/21 08:25	
Fluoride	mg/L	<0.086	0.20	0.086	05/07/21 08:25	
Sulfate	mg/L	<0.42	1.0	0.42	05/07/21 08:25	

METHOD BLANK: 2894374

Matrix: Water

Associated Lab Samples: 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.66J	1.0	0.39	05/11/21 07:30	
Fluoride	mg/L	<0.086	0.20	0.086	05/11/21 07:30	
Sulfate	mg/L	<0.42	1.0	0.42	05/11/21 07:30	

LABORATORY CONTROL SAMPLE: 2889293

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.0	101	90-110	

LABORATORY CONTROL SAMPLE: 2894181

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	103	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

LABORATORY CONTROL SAMPLE: 2894181

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.6	106	90-110	
Sulfate	mg/L	5	4.9	99	90-110	

LABORATORY CONTROL SAMPLE: 2894375

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	2.4	97	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2889294 2889295

Parameter	Units	60367582003		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec						
Chloride	mg/L	29.0	10	10	41.6	40.8	126	118	80-120	2	15	E,M1	
Fluoride	mg/L	1.1	2.5	2.5	3.7	3.8	107	108	80-120	0	15		
Sulfate	mg/L	245	250	250	643	554	159	124	80-120	15	15	M1	

MATRIX SPIKE SAMPLE: 2889297

Parameter	Units	60367583005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	23.3	10	35.4	121	80-120	M1
Fluoride	mg/L	2.0	2.5	4.9	116	80-120	
Sulfate	mg/L	291	100	399	108	80-120	

SAMPLE DUPLICATE: 2889296

Parameter	Units	60367582003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	29.0	28.6	1	15	
Fluoride	mg/L	1.1	0.72	38	15	D6
Sulfate	mg/L	245	252	3	15	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 718360 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: 60367583001, 60367583016, 60367583017

METHOD BLANK: 2889298 Matrix: Water
 Associated Lab Samples: 60367583001, 60367583016, 60367583017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/07/21 11:54	
Fluoride	mg/L	<0.086	0.20	0.086	05/07/21 11:54	
Sulfate	mg/L	<0.42	1.0	0.42	05/07/21 11:54	

METHOD BLANK: 2896324 Matrix: Water
 Associated Lab Samples: 60367583001, 60367583016, 60367583017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/11/21 07:30	
Fluoride	mg/L	<0.086	0.20	0.086	05/11/21 07:30	
Sulfate	mg/L	<0.42	1.0	0.42	05/11/21 07:30	

LABORATORY CONTROL SAMPLE: 2889299

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	2.3	93	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 2896325

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	2.5	100	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2889301 2889302

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60367583001 Result	Spike Conc.	Spike Conc.	Result						
Chloride	mg/L	23.1	25	25	46.8	49.4	95	105	80-120	5	15
Fluoride	mg/L	0.38	2.5	2.5	3.5	2.7	125	91	80-120	27	15 M1,R1
Sulfate	mg/L	15.8	25	25	39.3	42.0	94	105	80-120	7	15

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

MATRIX SPIKE SAMPLE: 2889303		60368243002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	696	500	1200	100	80-120	
Fluoride	mg/L	ND	250	267	102	80-120	
Sulfate	mg/L	555	500	1070	102	80-120	

SAMPLE DUPLICATE: 2889300

Parameter	Units	60367583001	Dup	RPD	Max	Qualifiers
		Result	Result		RPD	
Chloride	mg/L	23.1	22.9	1	15	
Fluoride	mg/L	0.38	0.39	3	15	
Sulfate	mg/L	15.8	15.6	1	15	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P05S **Lab ID: 60367583001** Collected: 04/22/21 10:50 Received: 04/24/21 03:10 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	0.781 ± 0.644 (0.931) C:NA T:94%	pCi/L	06/06/21 14:27	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.125 ± 0.349 (0.780) C:76% T:96%	pCi/L	06/04/21 16:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P10S **Lab ID: 60367583002** Collected: 04/22/21 15:15 Received: 04/24/21 03:10 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	-0.237 ± 0.515 (1.19) C:NA T:88%	pCi/L	06/06/21 14:27	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.656 ± 0.422 (0.800) C:77% T:86%	pCi/L	06/04/21 16:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P16S **Lab ID: 60367583003** Collected: 04/22/21 11:35 Received: 04/24/21 03:10 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	0.0652 ± 0.298 (0.177) C:NA T:97%	pCi/L	06/06/21 14:27	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.186 ± 0.344 (0.754) C:72% T:101%	pCi/L	06/04/21 16:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P17S **Lab ID: 60367583004** Collected: 04/22/21 12:20 Received: 04/24/21 03:10 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	0.207 ± 0.358 (0.640) C:NA T:96%	pCi/L	06/06/21 15:03	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.809 ± 0.411 (0.731) C:80% T:92%	pCi/L	06/04/21 16:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P171 **Lab ID: 60367583005** Collected: 04/22/21 13:08 Received: 04/24/21 03:10 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	0.0714 ± 0.326 (0.663) C:NA T:91%	pCi/L	06/06/21 15:14	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.273 ± 0.523 (1.15) C:71% T:70%	pCi/L	06/04/21 16:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P17D **Lab ID: 60367583006** Collected: 04/22/21 12:14 Received: 04/24/21 03:10 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	0.0708 ± 0.367 (0.762) C:NA T:89%	pCi/L	06/06/21 15:03	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.405 ± 0.375 (0.767) C:77% T:92%	pCi/L	06/04/21 16:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P19S **Lab ID: 60367583007** Collected: 04/22/21 10:10 Received: 04/24/21 03:10 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	0.000 ± 0.307 (0.495) C:NA T:95%	pCi/L	06/06/21 15:03	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.29 ± 0.498 (0.771) C:75% T:92%	pCi/L	06/04/21 16:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P191 **Lab ID: 60367583008** Collected: 04/22/21 10:05 Received: 04/24/21 03:10 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	0.451 ± 0.554 (0.903) C:NA T:82%	pCi/L	06/06/21 15:03	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.625 ± 0.862 (1.85) C:69% T:47%	pCi/L	06/04/21 16:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P19D **Lab ID: 60367583009** Collected: 04/22/21 11:15 Received: 04/24/21 03:10 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	0.289 ± 0.450 (0.779) C:NA T:95%	pCi/L	06/06/21 15:03	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.566 ± 0.425 (0.839) C:77% T:90%	pCi/L	06/04/21 16:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.0700 ± 0.412 (0.841) C:NA T:93%	pCi/L	06/06/21 15:03	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.02 ± 0.465 (0.780) C:75% T:88%	pCi/L	06/04/21 16:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P211 **Lab ID: 60367583011** Collected: 04/23/21 12:05 Received: 04/24/21 03:10 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	0.142 ± 0.324 (0.192) C:NA T:92%	pCi/L	06/06/21 15:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.536 ± 0.379 (0.738) C:75% T:98%	pCi/L	06/04/21 16:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P21D **Lab ID: 60367583012** Collected: 04/23/21 12:45 Received: 04/24/21 03:10 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	0.483 ± 0.362 (0.187) C:NA T:88%	pCi/L	06/06/21 15:37	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.427 ± 0.387 (0.794) C:82% T:93%	pCi/L	06/04/21 16:17	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P22S **Lab ID: 60367583013** Collected: 04/22/21 16:00 Received: 04/24/21 03:10 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	0.200 ± 0.305 (0.180) C:NA T:94%	pCi/L	06/06/21 15:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.996 ± 0.430 (0.714) C:80% T:99%	pCi/L	06/04/21 16:17	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P22D **Lab ID: 60367583014** Collected: 04/22/21 15:45 Received: 04/24/21 03:10 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	0.0887 ± 0.405 (0.240) C:NA T:75%	pCi/L	06/06/21 15:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.214 ± 0.434 (0.957) C:70% T:79%	pCi/L	06/04/21 16:17	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-DUP-1 **Lab ID: 60367583015** Collected: 04/23/21 00:00 Received: 04/24/21 03:10 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	0.423 ± 0.394 (0.519) C:NA T:93%	pCi/L	06/06/21 15:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.858 ± 0.398 (0.668) C:74% T:98%	pCi/L	06/04/21 16:17	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-DUP-2 **Lab ID: 60367583016** Collected: 04/23/21 00:00 Received: 04/24/21 03:10 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	0.132 ± 0.302 (0.179) C:NA T:98%	pCi/L	06/06/21 15:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0692 ± 0.286 (0.653) C:75% T:88%	pCi/L	06/04/21 16:13	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-FB-1 **Lab ID: 60367583017** Collected: 04/23/21 13:10 Received: 04/24/21 03:10 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	0.0667 ± 0.305 (0.491) C:NA T:97%	pCi/L	06/06/21 15:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.194 ± 0.305 (0.660) C:74% T:92%	pCi/L	06/04/21 16:13	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-MS-1 **Lab ID: 60367583018** Collected: 04/22/21 10:50 Received: 04/24/21 03:10 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	75.15 %REC ± NA (NA) C:NA T:NA%	pCi/L	06/06/21 15:50	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	108.94 %REC ± NA (NA) C:NA T:NA	pCi/L	06/04/21 16:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	59.87 %REC 22.63 RPD ± NA (NA) C:NA T:NA%	pCi/L	06/06/21 15:50	13982-63-3	1e
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	92.64 %REC 16.18 RPD ± NA (NA) C:NA T:NA	pCi/L	06/04/21 16:12	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P29S **Lab ID: 60367583020** Collected: 04/26/21 14:20 Received: 04/27/21 03:43 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	0.210 ± 0.321 (0.190) C:NA T:92%	pCi/L	06/06/21 15:48	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.512 ± 0.390 (0.769) C:77% T:86%	pCi/L	06/04/21 16:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P29D **Lab ID: 60367583021** Collected: 04/26/21 09:55 Received: 04/27/21 03:43 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	0.384 ± 0.563 (0.961) C:NA T:90%	pCi/L	05/20/21 13:40	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.514 ± 0.354 (0.672) C:71% T:88%	pCi/L	05/18/21 14:52	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P30S **Lab ID: 60367583022** Collected: 04/26/21 12:40 Received: 04/27/21 03:43 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	-0.128 ± 0.355 (0.840) C:NA T:100%	pCi/L	05/20/21 13:55	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.55 ± 0.553 (0.792) C:70% T:83%	pCi/L	05/18/21 14:52	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-P31S **Lab ID: 60367583023** Collected: 04/26/21 09:41 Received: 04/27/21 03:43 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	0.133 ± 0.412 (0.798) C:NA T:95%	pCi/L	05/20/21 13:55	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.288 ± 0.378 (0.804) C:71% T:75%	pCi/L	05/18/21 14:52	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Sample: R-CA-FB-2 **Lab ID: 60367583024** Collected: 04/26/21 13:05 Received: 04/27/21 03:43 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	0.261 ± 0.544 (0.980) C:NA T:95%	pCi/L	05/20/21 13:55	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.197 ± 0.311 (0.674) C:72% T:87%	pCi/L	05/18/21 14:52	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 446796

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: 60367583021, 60367583022, 60367583023, 60367583024

METHOD BLANK: 2156084

Matrix: Water

Associated Lab Samples: 60367583021, 60367583022, 60367583023, 60367583024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.632 ± 0.392 (0.722) C:69% T:81%	pCi/L	05/18/21 14:56	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 446786

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: 60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015, 60367583016, 60367583017, 60367583018, 60367583019, 60367583020

METHOD BLANK: 2156064

Matrix: Water

Associated Lab Samples: 60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015, 60367583016, 60367583017, 60367583018, 60367583019, 60367583020

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0549 ± 0.285 (0.591) C:NA T:91%	pCi/L	06/06/21 14:27	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 446797

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: 60367583021, 60367583022, 60367583023, 60367583024

METHOD BLANK: 2156087

Matrix: Water

Associated Lab Samples: 60367583021, 60367583022, 60367583023, 60367583024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.106 ± 0.294 (0.694) C:NA T:85%	pCi/L	05/20/21 12:50	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

QC Batch: 446784

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: 60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015, 60367583016, 60367583017, 60367583018, 60367583019, 60367583020

METHOD BLANK: 2156061

Matrix: Water

Associated Lab Samples: 60367583001, 60367583002, 60367583003, 60367583004, 60367583005, 60367583006, 60367583007, 60367583008, 60367583009, 60367583010, 60367583011, 60367583012, 60367583013, 60367583014, 60367583015, 60367583016, 60367583017, 60367583018, 60367583019, 60367583020

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.280 ± 0.306 (0.772) C:70% T:85%	pCi/L	06/04/21 13:12	

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QUALIFIERS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

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.

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 The matrix spike duplicate recovery was low and outside of the default acceptance criteria for MS recovery. The MS/MSD RPD was acceptable. The low MSD recovery may be due to sample matrix interference.
- B Analyte was detected in the associated method blank.
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- E Analyte concentration exceeded the calibration range. The reported result is estimated.
- H1 Analysis conducted outside the EPA method holding time.
- H5 Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.
- 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.
- R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60367583001	R-P05S	EPA 200.7	719402	EPA 200.7	719547
60367583002	R-P10S	EPA 200.7	719402	EPA 200.7	719547
60367583003	R-P16S	EPA 200.7	719402	EPA 200.7	719547
60367583004	R-P17S	EPA 200.7	719402	EPA 200.7	719547
60367583005	R-P17I	EPA 200.7	719416	EPA 200.7	719542
60367583006	R-P17D	EPA 200.7	719416	EPA 200.7	719542
60367583007	R-P19S	EPA 200.7	719416	EPA 200.7	719542
60367583008	R-P19I	EPA 200.7	719416	EPA 200.7	719542
60367583009	R-P19D	EPA 200.7	719416	EPA 200.7	719542
60367583010	R-P21S	EPA 200.7	719416	EPA 200.7	719542
60367583011	R-P21I	EPA 200.7	719416	EPA 200.7	719542
60367583012	R-P21D	EPA 200.7	719416	EPA 200.7	719542
60367583013	R-P22S	EPA 200.7	719416	EPA 200.7	719542
60367583014	R-P22D	EPA 200.7	719416	EPA 200.7	719542
60367583015	R-CA-DUP-1	EPA 200.7	719416	EPA 200.7	719542
60367583016	R-CA-DUP-2	EPA 200.7	719416	EPA 200.7	719542
60367583017	R-CA-FB-1	EPA 200.7	719416	EPA 200.7	719542
60367583020	R-P29S	EPA 200.7	717917	EPA 200.7	718060
60367583021	R-P29D	EPA 200.7	717917	EPA 200.7	718060
60367583022	R-P30S	EPA 200.7	717917	EPA 200.7	718060
60367583023	R-P31S	EPA 200.7	717917	EPA 200.7	718060
60367583024	R-CA-FB-2	EPA 200.7	717917	EPA 200.7	718060
60367583001	R-P05S	EPA 200.8	719408	EPA 200.8	719549
60367583002	R-P10S	EPA 200.8	719408	EPA 200.8	719549
60367583003	R-P16S	EPA 200.8	719408	EPA 200.8	719549
60367583004	R-P17S	EPA 200.8	719408	EPA 200.8	719549
60367583005	R-P17I	EPA 200.8	719417	EPA 200.8	719543
60367583006	R-P17D	EPA 200.8	719417	EPA 200.8	719543
60367583007	R-P19S	EPA 200.8	719417	EPA 200.8	719543
60367583008	R-P19I	EPA 200.8	719417	EPA 200.8	719543
60367583009	R-P19D	EPA 200.8	719417	EPA 200.8	719543
60367583010	R-P21S	EPA 200.8	719417	EPA 200.8	719543
60367583011	R-P21I	EPA 200.8	719417	EPA 200.8	719543
60367583012	R-P21D	EPA 200.8	719417	EPA 200.8	719543
60367583013	R-P22S	EPA 200.8	719417	EPA 200.8	719543
60367583014	R-P22D	EPA 200.8	719417	EPA 200.8	719543
60367583015	R-CA-DUP-1	EPA 200.8	719417	EPA 200.8	719543
60367583016	R-CA-DUP-2	EPA 200.8	719417	EPA 200.8	719543
60367583017	R-CA-FB-1	EPA 200.8	719417	EPA 200.8	719543
60367583020	R-P29S	EPA 200.8	718826	EPA 200.8	718964
60367583021	R-P29D	EPA 200.8	718826	EPA 200.8	718964
60367583022	R-P30S	EPA 200.8	718826	EPA 200.8	718964
60367583023	R-P31S	EPA 200.8	718826	EPA 200.8	718964
60367583024	R-CA-FB-2	EPA 200.8	718826	EPA 200.8	718964
60367583001	R-P05S	EPA 7470	719268	EPA 7470	719618
60367583002	R-P10S	EPA 7470	719268	EPA 7470	719618

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60367583003	R-P16S	EPA 7470	719268	EPA 7470	719618
60367583004	R-P17S	EPA 7470	719268	EPA 7470	719618
60367583005	R-P17I	EPA 7470	719268	EPA 7470	719618
60367583006	R-P17D	EPA 7470	719268	EPA 7470	719618
60367583007	R-P19S	EPA 7470	719268	EPA 7470	719618
60367583008	R-P19I	EPA 7470	719268	EPA 7470	719618
60367583009	R-P19D	EPA 7470	719268	EPA 7470	719618
60367583010	R-P21S	EPA 7470	719268	EPA 7470	719618
60367583011	R-P21I	EPA 7470	719268	EPA 7470	719618
60367583012	R-P21D	EPA 7470	719268	EPA 7470	719618
60367583013	R-P22S	EPA 7470	719268	EPA 7470	719618
60367583014	R-P22D	EPA 7470	719268	EPA 7470	719618
60367583015	R-CA-DUP-1	EPA 7470	719268	EPA 7470	719618
60367583016	R-CA-DUP-2	EPA 7470	719268	EPA 7470	719618
60367583017	R-CA-FB-1	EPA 7470	719268	EPA 7470	719618
60367583020	R-P29S	EPA 7470	719266	EPA 7470	719616
60367583021	R-P29D	EPA 7470	719266	EPA 7470	719616
60367583022	R-P30S	EPA 7470	719266	EPA 7470	719616
60367583023	R-P31S	EPA 7470	719266	EPA 7470	719616
60367583024	R-CA-FB-2	EPA 7470	719266	EPA 7470	719616
60367583001	R-P05S	EPA 903.1	446786		
60367583002	R-P10S	EPA 903.1	446786		
60367583003	R-P16S	EPA 903.1	446786		
60367583004	R-P17S	EPA 903.1	446786		
60367583005	R-P17I	EPA 903.1	446786		
60367583006	R-P17D	EPA 903.1	446786		
60367583007	R-P19S	EPA 903.1	446786		
60367583008	R-P19I	EPA 903.1	446786		
60367583009	R-P19D	EPA 903.1	446786		
60367583010	R-P21S	EPA 903.1	446786		
60367583011	R-P21I	EPA 903.1	446786		
60367583012	R-P21D	EPA 903.1	446786		
60367583013	R-P22S	EPA 903.1	446786		
60367583014	R-P22D	EPA 903.1	446786		
60367583015	R-CA-DUP-1	EPA 903.1	446786		
60367583016	R-CA-DUP-2	EPA 903.1	446786		
60367583017	R-CA-FB-1	EPA 903.1	446786		
60367583018	R-CA-MS-1	EPA 903.1	446786		
60367583019	R-CA-MSD-1	EPA 903.1	446786		
60367583020	R-P29S	EPA 903.1	446786		
60367583021	R-P29D	EPA 903.1	446797		
60367583022	R-P30S	EPA 903.1	446797		
60367583023	R-P31S	EPA 903.1	446797		
60367583024	R-CA-FB-2	EPA 903.1	446797		
60367583001	R-P05S	EPA 904.0	446784		
60367583002	R-P10S	EPA 904.0	446784		
60367583003	R-P16S	EPA 904.0	446784		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60367583004	R-P17S	EPA 904.0	446784		
60367583005	R-P17I	EPA 904.0	446784		
60367583006	R-P17D	EPA 904.0	446784		
60367583007	R-P19S	EPA 904.0	446784		
60367583008	R-P19I	EPA 904.0	446784		
60367583009	R-P19D	EPA 904.0	446784		
60367583010	R-P21S	EPA 904.0	446784		
60367583011	R-P21I	EPA 904.0	446784		
60367583012	R-P21D	EPA 904.0	446784		
60367583013	R-P22S	EPA 904.0	446784		
60367583014	R-P22D	EPA 904.0	446784		
60367583015	R-CA-DUP-1	EPA 904.0	446784		
60367583016	R-CA-DUP-2	EPA 904.0	446784		
60367583017	R-CA-FB-1	EPA 904.0	446784		
60367583018	R-CA-MS-1	EPA 904.0	446784		
60367583019	R-CA-MSD-1	EPA 904.0	446784		
60367583020	R-P29S	EPA 904.0	446784		
60367583021	R-P29D	EPA 904.0	446796		
60367583022	R-P30S	EPA 904.0	446796		
60367583023	R-P31S	EPA 904.0	446796		
60367583024	R-CA-FB-2	EPA 904.0	446796		
60367583001	R-P05S	SM 2320B	718470		
60367583002	R-P10S	SM 2320B	718470		
60367583003	R-P16S	SM 2320B	718470		
60367583004	R-P17S	SM 2320B	718470		
60367583005	R-P17I	SM 2320B	718470		
60367583006	R-P17D	SM 2320B	718470		
60367583007	R-P19S	SM 2320B	718470		
60367583008	R-P19I	SM 2320B	718470		
60367583009	R-P19D	SM 2320B	718470		
60367583010	R-P21S	SM 2320B	718561		
60367583011	R-P21I	SM 2320B	718561		
60367583012	R-P21D	SM 2320B	718561		
60367583013	R-P22S	SM 2320B	718470		
60367583014	R-P22D	SM 2320B	718470		
60367583015	R-CA-DUP-1	SM 2320B	718561		
60367583016	R-CA-DUP-2	SM 2320B	718561		
60367583017	R-CA-FB-1	SM 2320B	718561		
60367583020	R-P29S	SM 2320B	718981		
60367583021	R-P29D	SM 2320B	718981		
60367583022	R-P30S	SM 2320B	718981		
60367583023	R-P31S	SM 2320B	718981		
60367583024	R-CA-FB-2	SM 2320B	718981		
60367583001	R-P05S	SM 2540C	717397		
60367583002	R-P10S	SM 2540C	717397		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60367583003	R-P16S	SM 2540C	717397		
60367583004	R-P17S	SM 2540C	717397		
60367583005	R-P17I	SM 2540C	717397		
60367583006	R-P17D	SM 2540C	717397		
60367583007	R-P19S	SM 2540C	717397		
60367583008	R-P19I	SM 2540C	717397		
60367583009	R-P19D	SM 2540C	717397		
60367583010	R-P21S	SM 2540C	717531		
60367583011	R-P21I	SM 2540C	717531		
60367583012	R-P21D	SM 2540C	717531		
60367583013	R-P22S	SM 2540C	717397		
60367583014	R-P22D	SM 2540C	717397		
60367583015	R-CA-DUP-1	SM 2540C	717531		
60367583016	R-CA-DUP-2	SM 2540C	717531		
60367583017	R-CA-FB-1	SM 2540C	717531		
60367583020	R-P29S	SM 2540C	717531		
60367583021	R-P29D	SM 2540C	717766		
60367583022	R-P30S	SM 2540C	717766		
60367583023	R-P31S	SM 2540C	717766		
60367583024	R-CA-FB-2	SM 2540C	717766		
60367583024	R-CA-FB-2	SM 2540C	718394		
60367583001	R-P05S	SM 3500-Fe B#4	720612		
60367583002	R-P10S	SM 3500-Fe B#4	720612		
60367583003	R-P16S	SM 3500-Fe B#4	720612		
60367583004	R-P17S	SM 3500-Fe B#4	720612		
60367583005	R-P17I	SM 3500-Fe B#4	720612		
60367583006	R-P17D	SM 3500-Fe B#4	720612		
60367583007	R-P19S	SM 3500-Fe B#4	720612		
60367583008	R-P19I	SM 3500-Fe B#4	720612		
60367583009	R-P19D	SM 3500-Fe B#4	720612		
60367583010	R-P21S	SM 3500-Fe B#4	720612		
60367583011	R-P21I	SM 3500-Fe B#4	720612		
60367583012	R-P21D	SM 3500-Fe B#4	720613		
60367583013	R-P22S	SM 3500-Fe B#4	720613		
60367583014	R-P22D	SM 3500-Fe B#4	720613		
60367583015	R-CA-DUP-1	SM 3500-Fe B#4	720613		
60367583016	R-CA-DUP-2	SM 3500-Fe B#4	720613		
60367583017	R-CA-FB-1	SM 3500-Fe B#4	720613		
60367583020	R-P29S	SM 3500-Fe B#4	720769		
60367583021	R-P29D	SM 3500-Fe B#4	720769		
60367583022	R-P30S	SM 3500-Fe B#4	720769		
60367583023	R-P31S	SM 3500-Fe B#4	723195		
60367583024	R-CA-FB-2	SM 3500-Fe B#4	723195		
60367583001	R-P05S	SM 3500-Fe B#4	718252		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60367583002	R-P10S	SM 3500-Fe B#4	718252		
60367583003	R-P16S	SM 3500-Fe B#4	718252		
60367583004	R-P17S	SM 3500-Fe B#4	718252		
60367583005	R-P17I	SM 3500-Fe B#4	718252		
60367583006	R-P17D	SM 3500-Fe B#4	718252		
60367583007	R-P19S	SM 3500-Fe B#4	718252		
60367583008	R-P19I	SM 3500-Fe B#4	718252		
60367583009	R-P19D	SM 3500-Fe B#4	718252		
60367583010	R-P21S	SM 3500-Fe B#4	718253		
60367583011	R-P21I	SM 3500-Fe B#4	718253		
60367583012	R-P21D	SM 3500-Fe B#4	718253		
60367583013	R-P22S	SM 3500-Fe B#4	718252		
60367583014	R-P22D	SM 3500-Fe B#4	718252		
60367583015	R-CA-DUP-1	SM 3500-Fe B#4	718252		
60367583016	R-CA-DUP-2	SM 3500-Fe B#4	718253		
60367583017	R-CA-FB-1	SM 3500-Fe B#4	718253		
60367583020	R-P29S	SM 3500-Fe B#4	718253		
60367583021	R-P29D	SM 3500-Fe B#4	718253		
60367583022	R-P30S	SM 3500-Fe B#4	718253		
60367583023	R-P31S	SM 3500-Fe B#4	718253		
60367583024	R-CA-FB-2	SM 3500-Fe B#4	718253		
60367583001	R-P05S	SM 4500-S-2 D	716876		
60367583002	R-P10S	SM 4500-S-2 D	716876		
60367583003	R-P16S	SM 4500-S-2 D	716876		
60367583004	R-P17S	SM 4500-S-2 D	716876		
60367583005	R-P17I	SM 4500-S-2 D	716876		
60367583006	R-P17D	SM 4500-S-2 D	716876		
60367583007	R-P19S	SM 4500-S-2 D	716876		
60367583008	R-P19I	SM 4500-S-2 D	716876		
60367583009	R-P19D	SM 4500-S-2 D	716876		
60367583010	R-P21S	SM 4500-S-2 D	716876		
60367583011	R-P21I	SM 4500-S-2 D	716876		
60367583012	R-P21D	SM 4500-S-2 D	716876		
60367583013	R-P22S	SM 4500-S-2 D	716876		
60367583014	R-P22D	SM 4500-S-2 D	716876		
60367583015	R-CA-DUP-1	SM 4500-S-2 D	717193		
60367583016	R-CA-DUP-2	SM 4500-S-2 D	717193		
60367583017	R-CA-FB-1	SM 4500-S-2 D	717193		
60367583020	R-P29S	SM 4500-S-2 D	717193		
60367583021	R-P29D	SM 4500-S-2 D	717193		
60367583022	R-P30S	SM 4500-S-2 D	717193		
60367583023	R-P31S	SM 4500-S-2 D	717193		
60367583024	R-CA-FB-2	SM 4500-S-2 D	717221		
60367583001	R-P05S	EPA 300.0	718360		
60367583002	R-P10S	EPA 300.0	718359		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60367583

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60367583003	R-P16S	EPA 300.0	718359		
60367583004	R-P17S	EPA 300.0	718359		
60367583005	R-P17I	EPA 300.0	718359		
60367583006	R-P17D	EPA 300.0	718359		
60367583007	R-P19S	EPA 300.0	718359		
60367583008	R-P19I	EPA 300.0	718359		
60367583009	R-P19D	EPA 300.0	718359		
60367583010	R-P21S	EPA 300.0	718359		
60367583011	R-P21I	EPA 300.0	718359		
60367583012	R-P21D	EPA 300.0	718359		
60367583013	R-P22S	EPA 300.0	718359		
60367583014	R-P22D	EPA 300.0	718359		
60367583015	R-CA-DUP-1	EPA 300.0	718359		
60367583016	R-CA-DUP-2	EPA 300.0	718360		
60367583017	R-CA-FB-1	EPA 300.0	718360		
60367583020	R-P29S	EPA 300.0	717700		
60367583021	R-P29D	EPA 300.0	717700		
60367583022	R-P30S	EPA 300.0	717700		
60367583023	R-P31S	EPA 300.0	717700		
60367583024	R-CA-FB-2	EPA 300.0	717700		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60367583



Client Name: Golder Associates

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 ZPIC

Thermometer Used: T298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 0.3 Corr. Factor 0.0 Corrected 0.3

Date and initials of person examining contents: 4/24/21 JCB

Temperature should be above freezing to 6°C 0.6

Chain of Custody present:	<u>15.4</u> <u>1.9</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>15.4</u> <u>1.9</u>
Chain of Custody relinquished:	<u>16.6</u> <u>2.9</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>16.6</u> <u>2.9</u>
Samples arrived within holding time:	<u>14.9</u> <u>14.1</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>14.9</u> <u>14.1</u>
Short Hold Time analyses (<72hr):	<u>2.1</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>14.1</u> <u>2.1</u> <u>Fe+2</u>
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 ₃ , H ₂ SO ₄ , 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>W03173 W03212</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: _____

REVIEWED
By jchurch at 8:57 am, 4/26/21

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:		Section B Required Project Information:		Section C Invoice Information:	
Company: Golder Associates		Report To: Jeffrey Ingram		Attention:	
Address: 13515 Barrett Parkway Dr., Ste 260 Ballwin, MO 63021		Copy To: Eric Schnieder, Ryan Feldman		Company Name: Golder Associates Inc	
Email To: jeffrey_ingram@golder.com		Purchase Order No.: COC #6		Address:	
Phone: 636-724-9191		Project Name: Ameren Rush Island EC RCPA-CA		Pace Quote Reference:	
Requested Due Date/TAT: Standard		Project Number: 153140602.0002A		Pace Project Manager: Jamie Church	
				Pace Profile #: 9285, line 1	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location: MO

STATE: MO

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	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP) (see valid codes to left)	MATRIX CODE	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
		COMPOSITE START	COMPOSITE END/GRAB											
1	R-P22S			G	WT		4/12/21	1600		4/12/21	03:10	N		
2	R-P22D			G	WT		4/12/21	1545		4/12/21	03:10	N		
3	R-P29S			G	WT							N		
4	R-P29D			G	WT							N		
5	R-P30S			G	WT							N		
6	R-P31S			G	WT							N		
7	R-CA-DUP-1			G	WT		4/12/21			4/12/21	03:10	N		
8	R-CA-DUP-2			G	WT		4/12/21			4/12/21	03:10	N		
9	R-CA-FB-1			G	WT		4/12/21	1310		4/12/21	03:10	N		
10	R-CA-FB-2			G	WT							N		
11	R-CA-MS-1			G	WT		4/12/21	1050		4/12/21	03:10	N		
12	R-CA-MSD-1			G	WT		4/12/21	1050		4/12/21	03:10	N		

ADDITIONAL COMMENTS

*App III and Cat/An Metals - EPA 200.7; Fe, Mg, Mn, K, Na, Ca, B

** App IV Metals - EPA 200.7 - Ba, Be, Co, Pb, Li, Mo

200.8 Metals - Sb, As, Cd, Cr, Se, Ti

RELINQUISHED BY / AFFILIATION: *Eric Schnieder* 4/12/21 1725

ACCEPTED BY / AFFILIATION: *Eric Schnieder* 4/12/21 03:10

DATE: 4/12/21

TIME: 03:10

DATE: 4/12/21

TIME: 03:10

Requested Analysis Filtered (Y/N): Y

Residual Chlorine (Y/N): Y

Pace Project No./ Lab I.D.: 60767583

SAMPLER NAME AND SIGNATURE: *Eric Schnieder*

PRINT Name of SAMPLER: Eric Schnieder

SIGNATURE of SAMPLER: *Eric Schnieder*

DATE Signed (MM/DD/YYYY): 04/12/21



Sample Condition Upon Receipt

WO#: 60367583



60367583

Client Name: Golder Associates

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 4-27-21kd Seals intact: Yes No 4-27-21kd

Packing Material: Bubble Wrap Bubble Bags 21kd Foam None Other ZPLC

Thermometer Used: T-296 Type of Ice: Wet Blue None 2.4 °C

Cooler Temperature (°C): As-read 21.5 Corr. Factor -0.1 Corrected 21.3

Date and initials of person examining contents:

4-27-21kd

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	<u>All radiums received in cooler</u> <u>21.3 °C</u>
Chain of Custody relinquished:	<input 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 ₃ , H ₂ SO ₄ , 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. <u>LOT# 603173, 603222</u>
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: _____

REVIEWED
By jchurch at 12:37 pm, 4/27/21

Project Manager Review: _____ Date: _____



GOLDER
MEMBER OF WSP

MEMORANDUM

DATE August 31, 2021

Project No. 153140603

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA-CA – CORRECTIVE ACTION SAMPLING APRIL 2021 - DATA PACKAGE 60367583

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 results were qualified as estimates (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 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).
- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
 Project Name: Ameren - RIEC - RCPA-CA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140603
 Validation Date: 8/31/2021

Laboratory: Pace Analytical - Kansas City and Greensburg

SDG #: 60367583

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); EPA 7470 (Mercury); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions);

Matrix: Air Soil/Sed. Water Waste SM 3500-FE B#4 (Ferric/Ferrous Iron); SM 4500-S-2 D (Sulfide); EPA 903.1/904.0 (Radium 226/228)

Sample Names R-P05S, R-P10S, R-P16S, R-P17S, R-P17I, R-P17D, R-P19S, R-P19I, R-P19D, R-P21S, R-P21I, R-P21D, R-P22S, R-P22D,
R-CA-DUP-1, R-CA-DUP-2, R-CA-FB-1, R-CA-MS-1, R-CA-MSD-1, R-P29S, R-P29D, R-P30S, R-P31S, 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>4/22/2021 - 4/26/2021</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>BTT/RR/EMS</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.Conductivity, ORP, Temp, DO, Turbidity</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: <u>_____</u>				
<u>_____</u>				
<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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"/>	See Notes
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

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Comments/Notes:

Ferrous Iron analyzed outside of hold time in all samples. All results were qualified as estimated.

TDS re-analyzed outside of hold time in R-CA-FB-2. The result was non-detect and qualified as estimated.

Chloride, Sulfate, and Total Sulfide analyzed at a dilution in several samples, no qualification necessary.

Method Blank:

2887521: Potassium (189J), associated with samples -020 through -024. Sample results >RL and 10x blank, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

(Method Blanks continued)

2893278: Boron (11.4J), associated with samples -001 through -004. Sample results >RL and 10x blank, no qualification necessary.

2893284: Chromium (0.44J), associated with samples -001 through -004. Sample results <RL, qualified as non-detect.

2894374: Chloride (0.66J), associated with samples -002 through -015. Sample results >RL and 10x blank were not qualified, results >RL but <10x blank were qualified as estimates.

Field Blanks:

R-CA-FB-1 @ R-P21D: Lead (3.9J), Chromium (0.38J), TDS (290), Ferric Iron (0.0042J). Non-detect sample results and results >RL and 10x blank were not qualified. Results <RL and/or <10x the blank were qualified.

R-CA-FB-2 @ R-P30S: Chromium (0.33J), Ferric Iron (0.0035J). Sample results <RL were qualified as non-detects, results > RL and 10x blank were not qualified.

Duplicates:

R-CA-DUP-1 @ R-P21S: Dup RPD exceeds limit (20%) for Cadmium (46.2%), TDS (76.3%), Ferrous Iron (34.5%), Chloride (24.4%).

R-CA-DUP-2 @ R-P21I: Lead non-detect in sample, detected in Dup; Dup RPD exceeds limit (20%) for Chromium (27.4%), TDS (73.1%).

Lab duplicate 2885504: RPD exceeds limit (10%) for TDS (25%). Duplicate performed on unrelated sample, no qualification necessary.

Lab duplicate 2885881: RPD exceeds limit (10%) for TDS (23%). Duplicate performed on unrelated sample, no qualification necessary.

Lab duplicate 2886817: RPD exceeds limit (10%) for TDS (24%). Duplicate performed on unrelated sample, no qualification necessary.

Lab duplicate 2889296: RPD exceeds limit (15%) for Fluoride (38%). Duplicate performed on unrelated sample, no qualification necessary.

MS/MSD:

2893301/2893302: MS % recovery low for Calcium, Magnesium, and Sodium. Associated with sample -007. Only 1 QC indicator is outside control limits, no qualification necessary.

2893303: MS % recovery low for Calcium. Associated with sample -013. Only 1 QC indicator is outside control limits, no qualification necessary.

2889297: MS % recovery high for Chloride. Associated with sample -005. Only 1 QC indicator is outside control limits, no qualification necessary.

2889301/2889302: MS % recovery high, RPD exceeds limit for Fluoride. Associated with sample -001. Qualified as an estimate.

Multiple MS/MSD analyses that were run on unrelated samples resulted in % recoveries outside control limits. Because these were run for unrelated samples, no qualification is necessary.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-P05S	Ferrous Iron	1.0	J	Analyzed outside of hold time
R-P17S	"	0.41	J	"
R-P17I	"	0.32	J	"
R-P17D	"	0.47	J	"
R-P19S	"	0.72	J	"
R-P19I	"	0.26	J	"
R-P19D	"	1.1	J	"
R-P21I	"	0.24	J	"
R-P21D	"	0.64	J	"
R-P22S	"	0.056	J	"
R-P22D	"	1.3	J	"
R-CA-DUP-2	"	0.25	J	"
R-P29S	"	0.54	J	"
R-P29D	"	0.11	J	"
R-P31S	"	0.31	J	"
R-P21S	"	1.7	J	Analyzed outside of hold time; DUP RPD exceeds limit
R-CA-DUP-1	"	1.2	J	"
R-P10S	"	0.048	UJ	Non-detect, analyzed outside of hold time
R-P16S	"	0.048	"	"
R-CA-FB-1	"	0.048	"	"
R-P30S	"	0.048	"	"
R-CA-FB-2	"	0.048	"	"
R-CA-FB-2	TDS	5.0	UJ	Non-detect, analyzed outside of hold time
R-P05S	Chromium	1.0	U	Detected in MB, sample result <RL
R-P10S	"	1.0	U	"
R-P16S	"	1.0	U	"
R-P17S	"	1.0	U	"
R-P16S	Chloride	1.5	J	Detected in MB, sample result <10x blank
R-P21D	Chromium	1.0	U	Detected in FB, sample result <RL
"	TDS	1550	J	Detected in FB, sample result <10x blank
R-P30S	Chromium	1.0	U	Detected in FB, sample result <RL
R-P21S	Cadmium	0.10	J	DUP RPD exceeds limit
"	TDS	390	J	"
"	Chloride	23.8	J	"

June 18, 2021

Jeffrey Ingram
Golder Associates
13515 Barrett Parkway Drive
Suite 260
Ballwin, MO 63021

RE: Project: AMEREN-RIEC VS SAMPLING
Pace Project No.: 60371986

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on June 11, 2021. 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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates
Brendan Talbert, Golder Associates



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 VS SAMPLING

Pace Project No.: 60371986

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 200030

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

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 VS SAMPLING

Pace Project No.: 60371986

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60371986001	R-MW-5	Water	06/10/21 11:46	06/11/21 04:22
60371986002	R-MW-4	Water	06/10/21 12:50	06/11/21 04:22
60371986003	R-MW-1	Water	06/10/21 14:07	06/11/21 04:22
60371986004	R-RCPA-DUP-1	Water	06/10/21 00:00	06/11/21 04:22
60371986005	R-RCPA-FB-1	Water	06/10/21 11:55	06/11/21 04:22

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 VS SAMPLING

Pace Project No.: 60371986

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60371986001	R-MW-5	SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60371986002	R-MW-4	SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60371986003	R-MW-1	SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60371986004	R-RCPA-DUP-1	SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K
60371986005	R-RCPA-FB-1	SM 2540C	VRP	1	PASI-K
		EPA 300.0	CRN2	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN-RIEC VS SAMPLING

Pace Project No.: 60371986

Sample: R-MW-5 **Lab ID: 60371986001** Collected: 06/10/21 11:46 Received: 06/11/21 04:22 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	366	mg/L	10.0	10.0	1		06/17/21 12:40		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	0.16J	mg/L	0.20	0.086	1		06/16/21 20:25	16984-48-8	

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ANALYTICAL RESULTS

Project: AMEREN-RIEC VS SAMPLING

Pace Project No.: 60371986

Sample: R-MW-4 **Lab ID: 60371986002** Collected: 06/10/21 12:50 Received: 06/11/21 04:22 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	420	mg/L	10.0	10.0	1		06/17/21 12:41		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Fluoride	0.75	mg/L	0.20	0.086	1		06/16/21 22:48	16984-48-8	

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ANALYTICAL RESULTS

Project: AMEREN-RIEC VS SAMPLING

Pace Project No.: 60371986

Sample: R-MW-1 **Lab ID: 60371986003** Collected: 06/10/21 14:07 Received: 06/11/21 04:22 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	741	mg/L	10.0	10.0	1		06/17/21 12:41		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	<0.086	mg/L	0.20	0.086	1		06/16/21 23:01	16984-48-8	

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ANALYTICAL RESULTS

Project: AMEREN-RIEC VS SAMPLING

Pace Project No.: 60371986

Sample: R-RCPA-DUP-1 **Lab ID: 60371986004** Collected: 06/10/21 00:00 Received: 06/11/21 04:22 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	432	mg/L	10.0	10.0	1		06/17/21 12:41		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	0.80	mg/L	0.20	0.086	1		06/16/21 23:49	16984-48-8	

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ANALYTICAL RESULTS

Project: AMEREN-RIEC VS SAMPLING

Pace Project No.: 60371986

Sample: R-RCPA-FB-1 **Lab ID: 60371986005** Collected: 06/10/21 11:55 Received: 06/11/21 04:22 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		06/17/21 12:41		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	<0.086	mg/L	0.20	0.086	1		06/17/21 00:25	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN-RIEC VS SAMPLING

Pace Project No.: 60371986

QC Batch: 726677 Analysis Method: SM 2540C
 QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60371986001, 60371986002, 60371986003, 60371986004, 60371986005

METHOD BLANK: 2919587 Matrix: Water
 Associated Lab Samples: 60371986001, 60371986002, 60371986003, 60371986004, 60371986005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/17/21 12:40	

LABORATORY CONTROL SAMPLE: 2919588

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	965	96	80-120	

SAMPLE DUPLICATE: 2919589

Parameter	Units	60371986003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	741	748	1	10	

SAMPLE DUPLICATE: 2919590

Parameter	Units	60372033001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	236	244	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.

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QUALITY CONTROL DATA

Project: AMEREN-RIEC VS SAMPLING

Pace Project No.: 60371986

QC Batch: 726411

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: 60371986001

METHOD BLANK: 2918617

Matrix: Water

Associated Lab Samples: 60371986001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.086	0.20	0.086	06/16/21 10:51	

METHOD BLANK: 2921626

Matrix: Water

Associated Lab Samples: 60371986001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.086	0.20	0.086	06/17/21 08:37	

METHOD BLANK: 2922025

Matrix: Water

Associated Lab Samples: 60371986001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.086	0.20	0.086	06/18/21 09:15	

LABORATORY CONTROL SAMPLE: 2918618

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.4	97	90-110	

LABORATORY CONTROL SAMPLE: 2921627

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

LABORATORY CONTROL SAMPLE: 2922026

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	109	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN-RIEC VS SAMPLING

Pace Project No.: 60371986

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2918620												2918621	
Parameter	Units	60371261001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Fluoride	mg/L	0.33	2.5	2.5	2.9	2.9	101	101	80-120	0	15		

MATRIX SPIKE SAMPLE: 2918622		60371916004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	<0.086	2.5	2.6	101	80-120	

SAMPLE DUPLICATE: 2918619							
Parameter	Units	60371261001 Result	Dup Result	RPD	Max RPD	Qualifiers	
Fluoride	mg/L	0.33	0.33	2	15		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN-RIEC VS SAMPLING

Pace Project No.: 60371986

QC Batch: 726576

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: 60371986002, 60371986003, 60371986004, 60371986005

METHOD BLANK: 2919147

Matrix: Water

Associated Lab Samples: 60371986002, 60371986003, 60371986004, 60371986005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.086	0.20	0.086	06/16/21 19:35	

METHOD BLANK: 2922023

Matrix: Water

Associated Lab Samples: 60371986002, 60371986003, 60371986004, 60371986005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.086	0.20	0.086	06/18/21 09:15	

LABORATORY CONTROL SAMPLE: 2919148

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	98	90-110	

LABORATORY CONTROL SAMPLE: 2922024

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2919150 2919151

Parameter	Units	60371255002		60371255002		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MSD Result								
Fluoride	mg/L	0.26	2.5	2.5	2.9	2.9	104	106	80-120	1	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2919152 2919153

Parameter	Units	60371258002		60371258002		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MSD Result								
Fluoride	mg/L	<0.86	25	25	26.4	26.7	106	107	80-120	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.

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QUALITY CONTROL DATA

Project: AMEREN-RIEC VS SAMPLING

Pace Project No.: 60371986

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2919155												2919156	
Parameter	Units	60371986003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Fluoride	mg/L	<0.086	2.5	2.5	2.4	2.5	93	98	80-120	5	15		

SAMPLE DUPLICATE: 2919149							
Parameter	Units	60371255002 Result	Dup Result	RPD	Max RPD	Qualifiers	
Fluoride	mg/L	0.26	<0.086		15		

SAMPLE DUPLICATE: 2919154							
Parameter	Units	60371258002 Result	Dup Result	RPD	Max RPD	Qualifiers	
Fluoride	mg/L	<0.86	<0.86		15		

SAMPLE DUPLICATE: 2919157							
Parameter	Units	60371986003 Result	Dup Result	RPD	Max RPD	Qualifiers	
Fluoride	mg/L	<0.086	<0.086		15		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN-RIEC VS SAMPLING

Pace Project No.: 60371986

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.

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN-RIEC VS SAMPLING

Pace Project No.: 60371986

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60371986001	R-MW-5	SM 2540C	726677		
60371986002	R-MW-4	SM 2540C	726677		
60371986003	R-MW-1	SM 2540C	726677		
60371986004	R-RCPA-DUP-1	SM 2540C	726677		
60371986005	R-RCPA-FB-1	SM 2540C	726677		
60371986001	R-MW-5	EPA 300.0	726411		
60371986002	R-MW-4	EPA 300.0	726576		
60371986003	R-MW-1	EPA 300.0	726576		
60371986004	R-RCPA-DUP-1	EPA 300.0	726576		
60371986005	R-RCPA-FB-1	EPA 300.0	726576		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60371986



Client Name: Golder Associates

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 2plc

Thermometer Used: T298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 2.5 Corr. Factor 0.0 Corrected 2.5

Date and initials of person examining contents: 6/11/21 JSZ

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>Wff</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , 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 _____

REVIEWED
By jchurch at 4:58 pm, 6/11/21

Project Manager Review: _____ Date: _____



GOLDER
MEMBER OF WSP

MEMORANDUM

DATE August 31, 2021

Project No. 153140603

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA – VERIFICATION SAMPLING - DATA PACKAGE 60371986

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).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
 Project Name: Ameren - RIEC - RCPA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140603
 Validation Date: 8/31/2021

Laboratory: Pace Analytical - Kansas SDG #: 60371986
 Analytical Method (type and no.): SM2540C (TDS); EPA 300.0 (Anions)
 Matrix: Air Soil/Sed. Water Waste
 Sample Names R-MW-5, R-MW-4, 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>6/10/2021</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>BTT/SSS</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. Conductivity, ORP, Temp, DO, Turbidity</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

Blanks	YES	NO	NA	COMMENTS
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-5
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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-RCPA-DUP-1 @ R-MW-4
b) Were field dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD: 6.5% [<20%]
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD: 3% [<10%]

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 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:

January 14, 2022

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

RE: Project: AMEREN RCPA
Pace Project No.: 60384734

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between October 27, 2021 and October 30, 2021. 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 - Indianapolis
- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

(Greensburg, PA) - Revision 1 - This report replaces the November, 11, 2021 report. This project was revised on December, 09, 2021 to remove total radium.

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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates
Brendan Talbert, Golder Associates



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN RCPA

Pace Project No.: 60384734

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 #: 9526

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 Indianapolis

7726 Moller Road, Indianapolis, IN 46268

Illinois Accreditation #: 200074

Indiana Drinking Water Laboratory #: C-49-06

Kansas/TNI Certification #: E-10177

Kentucky UST Agency Interest #: 80226

Kentucky WW Laboratory ID #: 98019

Michigan Drinking Water Laboratory #9050

Ohio VAP Certified Laboratory #: CL0065

Oklahoma Laboratory #: 9204

Texas Certification #: T104704355

Wisconsin Laboratory #: 999788130

USDA Soil Permit #: P330-19-00257

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN RCPA

Pace Project No.: 60384734

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60384734001	R-MW-B1	Water	10/27/21 15:36	10/30/21 04:25
60384734002	R-MW-3	Water	10/27/21 13:27	10/30/21 04:25
60384734003	R-MW-4	Water	10/27/21 15:41	10/30/21 04:25
60384734004	R-MW-5	Water	10/27/21 16:20	10/30/21 04:25
60384734005	R-MW-6	Water	10/27/21 10:07	10/30/21 04:25
60384734006	R-MW-7(r)	Water	10/27/21 14:15	10/30/21 04:25
60384734007	R-MS-1	Water	10/27/21 10:07	10/30/21 04:25
60384734008	R-MSD-1	Water	10/27/21 10:07	10/30/21 04:25
60384734009	R-MW-1	Water	10/26/21 11:02	10/27/21 04:05
60384734010	R-MW-2	Water	10/26/21 14:45	10/27/21 04:05
60384734011	R-MW-B2	Water	10/25/21 16:02	10/27/21 04:05
60384734012	R-DUP-1	Water	10/26/21 00:00	10/27/21 04:05
60384734013	R-FB-1	Water	10/26/21 11:30	10/27/21 04:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA

Pace Project No.: 60384734

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384734001	R-MW-B1	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734002	R-MW-3	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734003	R-MW-4	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734004	R-MW-5	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734005	R-MW-6	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734006	R-MW-7(r)	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA

Pace Project No.: 60384734

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734007	R-MS-1	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60384734008	R-MSD-1	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60384734009	R-MW-1	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734010	R-MW-2	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734011	R-MW-B2	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734012	R-DUP-1	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA

Pace Project No.: 60384734

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384734013	R-FB-1	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K

PASI-I = Pace Analytical Services - Indianapolis

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-B1 **Lab ID: 60384734001** Collected: 10/27/21 15:36 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	492	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:56	7440-39-3	
Boron	102	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:56	7440-42-8	
Calcium	157000	ug/L	2000	754	10	11/05/21 15:40	11/10/21 14:51	7440-70-2	
Iron	24000	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:56	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:56	7439-92-1	
Lithium	<76.7	ug/L	100	76.7	10	11/05/21 15:40	11/10/21 14:51	7439-93-2	
Magnesium	41200	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:56	7439-95-4	
Manganese	1210	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:56	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:56	7439-98-7	
Potassium	8750	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:56	7440-09-7	
Sodium	25000	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:56	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/17/21 12:35	11/18/21 17:31	7440-36-0	
Arsenic	23.2	ug/L	1.0	0.11	1	11/17/21 12:35	11/18/21 17:31	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/17/21 12:35	11/18/21 17:31	7440-43-9	
Chromium	0.24J	ug/L	1.0	0.23	1	11/17/21 12:35	11/18/21 17:31	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/17/21 12:35	11/18/21 17:31	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	480	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	630	mg/L	10.0	10.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	42.1	mg/L	5.0	1.9	5		11/05/21 19:12	16887-00-6	
Fluoride	0.22	mg/L	0.20	0.086	1		11/05/21 18:32	16984-48-8	
Sulfate	33.7	mg/L	5.0	2.1	5		11/05/21 19:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-3 **Lab ID: 60384734002** Collected: 10/27/21 13:27 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	23.8	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:58	7440-39-3	
Boron	14900	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:58	7440-42-8	
Calcium	6500	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 20:58	7440-70-2	
Iron	178	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:58	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:58	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 20:58	7439-93-2	
Magnesium	419	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:58	7439-95-4	
Manganese	9.3	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:58	7439-96-5	
Molybdenum	871	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:58	7439-98-7	
Potassium	1990	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:58	7440-09-7	
Sodium	247000	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:58	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/17/21 12:35	11/18/21 17:33	7440-36-0	
Arsenic	37.0	ug/L	1.0	0.11	1	11/17/21 12:35	11/18/21 17:33	7440-38-2	
Cadmium	0.17J	ug/L	0.50	0.062	1	11/17/21 12:35	11/18/21 17:33	7440-43-9	
Chromium	0.82J	ug/L	1.0	0.23	1	11/17/21 12:35	11/18/21 17:33	7440-47-3	
Selenium	0.47J	ug/L	1.0	0.18	1	11/17/21 12:35	11/18/21 17:33	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	274	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	727	mg/L	10.0	10.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	25.2	mg/L	5.0	1.9	5		11/05/21 19:39	16887-00-6	
Fluoride	0.89	mg/L	0.20	0.086	1		11/05/21 19:25	16984-48-8	
Sulfate	200	mg/L	20.0	8.4	20		11/05/21 19:52	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-4 **Lab ID: 60384734003** Collected: 10/27/21 15:41 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	322	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 21:00	7440-39-3	
Boron	2850	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 21:00	7440-42-8	
Calcium	83700	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 21:00	7440-70-2	
Iron	6080	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 21:00	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 21:00	7439-92-1	
Lithium	37.0	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 21:00	7439-93-2	
Magnesium	17200	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 21:00	7439-95-4	
Manganese	328	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 21:00	7439-96-5	
Molybdenum	69.3	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 21:00	7439-98-7	
Potassium	5480	ug/L	500	146	1	11/05/21 15:40	11/09/21 21:00	7440-09-7	
Sodium	60000	ug/L	500	254	1	11/05/21 15:40	11/09/21 21:00	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/17/21 12:35	11/18/21 17:46	7440-36-0	
Arsenic	13.6	ug/L	1.0	0.11	1	11/17/21 12:35	11/18/21 17:46	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/17/21 12:35	11/18/21 17:46	7440-43-9	
Chromium	0.32J	ug/L	1.0	0.23	1	11/17/21 12:35	11/18/21 17:46	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/17/21 12:35	11/18/21 17:46	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	348	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	459	mg/L	10.0	10.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	15.4	mg/L	1.0	0.39	1		11/05/21 20:05	16887-00-6	
Fluoride	0.79	mg/L	0.20	0.086	1		11/05/21 20:05	16984-48-8	
Sulfate	17.8	mg/L	1.0	0.42	1		11/05/21 20:05	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-5 **Lab ID: 60384734004** Collected: 10/27/21 16:20 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	316	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 21:07	7440-39-3	
Boron	55.9J	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 21:07	7440-42-8	
Calcium	118000	ug/L	2000	754	10	11/05/21 15:40	11/10/21 14:53	7440-70-2	
Iron	8370	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 21:07	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 21:07	7439-92-1	
Lithium	<76.7	ug/L	100	76.7	10	11/05/21 15:40	11/10/21 14:53	7439-93-2	
Magnesium	15100	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 21:07	7439-95-4	
Manganese	297	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 21:07	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 21:07	7439-98-7	
Potassium	1910	ug/L	500	146	1	11/05/21 15:40	11/09/21 21:07	7440-09-7	
Sodium	4070	ug/L	500	254	1	11/05/21 15:40	11/09/21 21:07	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/17/21 12:35	11/18/21 17:48	7440-36-0	
Arsenic	1.9	ug/L	1.0	0.11	1	11/17/21 12:35	11/18/21 17:48	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/17/21 12:35	11/18/21 17:48	7440-43-9	
Chromium	0.32J	ug/L	1.0	0.23	1	11/17/21 12:35	11/18/21 17:48	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/17/21 12:35	11/18/21 17:48	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	304	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	367	mg/L	5.0	5.0	1		11/02/21 11:24		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	3.5	mg/L	1.0	0.39	1		11/05/21 20:45	16887-00-6	
Fluoride	0.24	mg/L	0.20	0.086	1		11/05/21 20:45	16984-48-8	
Sulfate	14.4	mg/L	1.0	0.42	1		11/05/21 20:45	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-6 **Lab ID: 60384734005** Collected: 10/27/21 10:07 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	4370	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 21:09	7440-39-3	
Boron	248	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 21:09	7440-42-8	
Calcium	138000	ug/L	2000	754	10	11/05/21 15:40	11/10/21 14:55	7440-70-2	M1
Iron	136000	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 21:09	7439-89-6	M1
Lead	7.3J	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 21:09	7439-92-1	
Lithium	<76.7	ug/L	100	76.7	10	11/05/21 15:40	11/10/21 14:55	7439-93-2	
Magnesium	14900	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 21:09	7439-95-4	
Manganese	350	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 21:09	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 21:09	7439-98-7	
Potassium	1370	ug/L	500	146	1	11/05/21 15:40	11/09/21 21:09	7440-09-7	
Sodium	9180	ug/L	500	254	1	11/05/21 15:40	11/09/21 21:09	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.25J	ug/L	1.0	0.10	1	11/17/21 12:35	11/18/21 17:36	7440-36-0	
Arsenic	49.6	ug/L	1.0	0.11	1	11/17/21 12:35	11/18/21 17:36	7440-38-2	
Cadmium	0.55	ug/L	0.50	0.062	1	11/17/21 12:35	11/18/21 17:36	7440-43-9	M1
Chromium	21.5	ug/L	1.0	0.23	1	11/17/21 12:35	11/18/21 17:36	7440-47-3	
Selenium	4.7	ug/L	1.0	0.18	1	11/17/21 12:35	11/18/21 17:36	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	235	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	302	mg/L	5.0	5.0	1		11/02/21 11:24		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	3.2	mg/L	1.0	0.39	1		11/05/21 20:59	16887-00-6	
Fluoride	0.27	mg/L	0.20	0.086	1		11/05/21 20:59	16984-48-8	
Sulfate	28.7	mg/L	5.0	2.1	5		11/09/21 00:45	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-7(r) **Lab ID: 60384734006** Collected: 10/27/21 14:15 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	234	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 21:15	7440-39-3	
Boron	2300	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 21:15	7440-42-8	
Calcium	65100	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 21:15	7440-70-2	
Iron	11000	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 21:15	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 21:15	7439-92-1	
Lithium	27.9	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 21:15	7439-93-2	
Magnesium	19200	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 21:15	7439-95-4	
Manganese	277	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 21:15	7439-96-5	
Molybdenum	74.2	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 21:15	7439-98-7	
Potassium	5450	ug/L	500	146	1	11/05/21 15:40	11/09/21 21:15	7440-09-7	
Sodium	33300	ug/L	500	254	1	11/05/21 15:40	11/09/21 21:15	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/17/21 12:35	11/18/21 17:50	7440-36-0	
Arsenic	122	ug/L	1.0	0.11	1	11/17/21 12:35	11/18/21 17:50	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/17/21 12:35	11/18/21 17:50	7440-43-9	
Chromium	0.30J	ug/L	1.0	0.23	1	11/17/21 12:35	11/18/21 17:50	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/17/21 12:35	11/18/21 17:50	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	279	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	355	mg/L	5.0	5.0	1		11/03/21 10:37		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	8.0	mg/L	1.0	0.39	1		11/05/21 22:06	16887-00-6	
Fluoride	0.39	mg/L	0.20	0.086	1		11/05/21 22:06	16984-48-8	
Sulfate	19.3	mg/L	1.0	0.42	1		11/05/21 22:06	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-1 **Lab ID: 60384734009** Collected: 10/26/21 11:02 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	47.3	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:43	7440-39-3	
Boron	2340	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:43	7440-42-8	
Calcium	67600	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 20:43	7440-70-2	
Iron	71.8	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:43	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:43	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 20:43	7439-93-2	
Magnesium	11300	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:43	7439-95-4	
Manganese	70.0	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:43	7439-96-5	
Molybdenum	76.9	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:43	7439-98-7	
Potassium	6920	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:43	7440-09-7	
Sodium	115000	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:43	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.15J	ug/L	1.0	0.10	1	11/08/21 11:14	11/10/21 12:29	7440-36-0	
Arsenic	2.7	ug/L	1.0	0.11	1	11/08/21 11:14	11/10/21 12:29	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/08/21 11:14	11/10/21 12:29	7440-43-9	
Chromium	0.38J	ug/L	1.0	0.23	1	11/08/21 11:14	11/10/21 12:29	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/08/21 11:14	11/10/21 12:29	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	167	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	579	mg/L	10.0	10.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	31.0	mg/L	2.0	0.78	2		11/05/21 17:26	16887-00-6	
Fluoride	0.33	mg/L	0.20	0.086	1		11/04/21 19:44	16984-48-8	L2
Sulfate	60.5	mg/L	5.0	2.1	5		11/04/21 19:55	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-2 **Lab ID: 60384734010** Collected: 10/26/21 14:45 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	11.5	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:45	7440-39-3	
Boron	3810	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:45	7440-42-8	
Calcium	9480	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 20:45	7440-70-2	
Iron	121	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:45	7439-89-6	
Lead	15.5	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:45	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 20:45	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:45	7439-95-4	
Manganese	2.1J	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:45	7439-96-5	
Molybdenum	107	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:45	7439-98-7	
Potassium	3080	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:45	7440-09-7	
Sodium	220000	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:45	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	3.2	ug/L	1.0	0.10	1	11/08/21 11:14	11/10/21 12:40	7440-36-0	
Arsenic	242	ug/L	1.0	0.11	1	11/08/21 11:14	11/10/21 12:40	7440-38-2	
Cadmium	0.43J	ug/L	0.50	0.062	1	11/08/21 11:14	11/10/21 12:40	7440-43-9	
Chromium	0.82J	ug/L	1.0	0.23	1	11/08/21 11:14	11/10/21 12:40	7440-47-3	
Selenium	4.3	ug/L	1.0	0.18	1	11/08/21 11:14	11/10/21 12:40	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	195	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	761	mg/L	10.0	10.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	21.2	mg/L	5.0	1.9	5		11/03/21 18:54	16887-00-6	B
Fluoride	1.5	mg/L	0.20	0.086	1		11/04/21 20:06	16984-48-8	L2
Sulfate	248	mg/L	20.0	8.4	20		11/03/21 19:06	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-B2 **Lab ID: 60384734011** Collected: 10/25/21 16:02 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	391	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:48	7440-39-3	
Boron	40.2J	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:48	7440-42-8	
Calcium	106000	ug/L	2000	754	10	11/05/21 15:40	11/10/21 14:47	7440-70-2	M1
Iron	9220	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:48	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:48	7439-92-1	
Lithium	<76.7	ug/L	100	76.7	10	11/05/21 15:40	11/10/21 14:47	7439-93-2	
Magnesium	18700	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:48	7439-95-4	
Manganese	219	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:48	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:48	7439-98-7	
Potassium	1780	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:48	7440-09-7	
Sodium	15600	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:48	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/08/21 11:14	11/10/21 12:42	7440-36-0	
Arsenic	5.4	ug/L	1.0	0.11	1	11/08/21 11:14	11/10/21 12:42	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/08/21 11:14	11/10/21 12:42	7440-43-9	
Chromium	0.34J	ug/L	1.0	0.23	1	11/08/21 11:14	11/10/21 12:42	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/08/21 11:14	11/10/21 12:42	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	311	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	384	mg/L	5.0	5.0	1		11/02/21 11:21		H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	21.9	mg/L	5.0	1.9	5		11/03/21 19:29	16887-00-6	B
Fluoride	0.26	mg/L	0.20	0.086	1		11/04/21 20:40	16984-48-8	L2
Sulfate	9.8	mg/L	1.0	0.42	1		11/04/21 20:40	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-DUP-1 **Lab ID: 60384734012** Collected: 10/26/21 00:00 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	11.5	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:52	7440-39-3	
Boron	3990	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:52	7440-42-8	
Calcium	9920	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 20:52	7440-70-2	
Iron	124	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:52	7439-89-6	
Lead	16.1	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:52	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 20:52	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:52	7439-95-4	
Manganese	2.3J	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:52	7439-96-5	
Molybdenum	110	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:52	7439-98-7	
Potassium	3230	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:52	7440-09-7	
Sodium	229000	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:52	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	3.2	ug/L	1.0	0.10	1	11/08/21 11:14	11/10/21 12:44	7440-36-0	
Arsenic	246	ug/L	1.0	0.11	1	11/08/21 11:14	11/10/21 12:44	7440-38-2	
Cadmium	0.44J	ug/L	0.50	0.062	1	11/08/21 11:14	11/10/21 12:44	7440-43-9	
Chromium	0.81J	ug/L	1.0	0.23	1	11/08/21 11:14	11/10/21 12:44	7440-47-3	
Selenium	4.2	ug/L	1.0	0.18	1	11/08/21 11:14	11/10/21 12:44	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	196	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	784	mg/L	10.0	10.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	42.6	mg/L	10.0	3.9	10		11/03/21 19:53	16887-00-6	B
Fluoride	1.5	mg/L	0.20	0.086	1		11/04/21 20:51	16984-48-8	L2
Sulfate	296	mg/L	50.0	21.0	50		11/04/21 21:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-FB-1 **Lab ID: 60384734013** Collected: 10/26/21 11:30 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<1.8	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:54	7440-39-3	
Boron	16.2J	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:54	7440-42-8	
Calcium	<75.4	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 20:54	7440-70-2	
Iron	<21.4	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:54	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:54	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 20:54	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:54	7439-95-4	
Manganese	<0.74	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:54	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:54	7439-98-7	
Potassium	<146	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:54	7440-09-7	
Sodium	<254	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:54	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/08/21 11:14	11/10/21 12:38	7440-36-0	
Arsenic	<0.11	ug/L	1.0	0.11	1	11/08/21 11:14	11/10/21 12:38	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/08/21 11:14	11/10/21 12:38	7440-43-9	
Chromium	<0.23	ug/L	1.0	0.23	1	11/08/21 11:14	11/10/21 12:38	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/08/21 11:14	11/10/21 12:38	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	2.0	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.45J	mg/L	1.0	0.39	1		11/04/21 21:14	16887-00-6	B
Fluoride	<0.086	mg/L	0.20	0.086	1		11/04/21 21:14	16984-48-8	L2
Sulfate	<0.42	mg/L	1.0	0.42	1		11/04/21 21:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch:	754371	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: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK:	3019297	Matrix:	Water
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Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	11/09/21 20:35	
Boron	ug/L	<8.6	100	8.6	11/09/21 20:35	
Calcium	ug/L	<75.4	200	75.4	11/09/21 20:35	
Iron	ug/L	<21.4	50.0	21.4	11/09/21 20:35	
Lead	ug/L	<3.8	10.0	3.8	11/09/21 20:35	
Lithium	ug/L	<7.7	10.0	7.7	11/09/21 20:35	
Magnesium	ug/L	<31.4	50.0	31.4	11/09/21 20:35	
Manganese	ug/L	<0.74	5.0	0.74	11/09/21 20:35	
Molybdenum	ug/L	<2.2	20.0	2.2	11/09/21 20:35	
Potassium	ug/L	<146	500	146	11/09/21 20:35	
Sodium	ug/L	<254	500	254	11/09/21 20:35	

LABORATORY CONTROL SAMPLE: 3019298

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1000	100	85-115	
Boron	ug/L	1000	935	94	85-115	
Calcium	ug/L	10000	9590	96	85-115	
Iron	ug/L	10000	9700	97	85-115	
Lead	ug/L	1000	974	97	85-115	
Lithium	ug/L	1000	855	86	85-115	
Magnesium	ug/L	10000	9930	99	85-115	
Manganese	ug/L	1000	949	95	85-115	
Molybdenum	ug/L	1000	999	100	85-115	
Potassium	ug/L	10000	9940	99	85-115	
Sodium	ug/L	10000	10100	101	85-115	

MATRIX SPIKE SAMPLE: 3019299

Parameter	Units	60384734011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	391	1000	1410	102	70-130	
Boron	ug/L	40.2J	1000	977	94	70-130	
Calcium	ug/L	106000	10000	124000	177	70-130 M1	
Iron	ug/L	9220	10000	19300	101	70-130	
Lead	ug/L	<3.8	1000	964	96	70-130	
Lithium	ug/L	<76.7	1000	793	79	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

MATRIX SPIKE SAMPLE:		3019299		60384734011		Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	Conc.	Conc.	Result	% Rec	Limits	Qualifiers
Magnesium	ug/L	18700	10000	27900	10000	10000	27900	92	70-130	
Manganese	ug/L	219	1000	1170	1000	1000	1170	95	70-130	
Molybdenum	ug/L	<2.2	1000	997	1000	1000	997	100	70-130	
Potassium	ug/L	1780	10000	11900	10000	10000	11900	101	70-130	
Sodium	ug/L	15600	10000	26600	10000	10000	26600	111	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3019300		3019301		MS		MSD		% Rec	Max		
Parameter	Units	60384734005	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	RPD	Qual
		Result	Spike	Spike	Result	Result	% Rec	% Rec					
Barium	ug/L	4370	1000	1000	5230	5230	86	86	70-130	0	20		
Boron	ug/L	248	1000	1000	1190	1210	94	97	70-130	2	20		
Calcium	ug/L	138000	10000	10000	144000	143000	68	58	70-130	1	20	M1	
Iron	ug/L	136000	10000	10000	142000	145000	54	88	70-130	2	20	M1	
Lead	ug/L	7.3J	1000	1000	969	977	96	97	70-130	1	20		
Lithium	ug/L	<76.7	1000	1000	827	824	82	82	70-130	0	20		
Magnesium	ug/L	14900	10000	10000	23200	23900	82	90	70-130	3	20		
Manganese	ug/L	350	1000	1000	1280	1310	93	97	70-130	2	20		
Molybdenum	ug/L	<2.2	1000	1000	995	1000	100	100	70-130	1	20		
Potassium	ug/L	1370	10000	10000	11500	11800	101	104	70-130	3	20		
Sodium	ug/L	9180	10000	10000	19100	19400	100	102	70-130	1	20		

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch:	754751	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: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK: 3020828 Matrix: Water

Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.10	1.0	0.10	11/10/21 12:24	
Arsenic	ug/L	<0.11	1.0	0.11	11/10/21 12:24	
Cadmium	ug/L	<0.062	0.50	0.062	11/10/21 12:24	
Chromium	ug/L	<0.23	1.0	0.23	11/10/21 12:24	
Selenium	ug/L	<0.18	1.0	0.18	11/10/21 12:24	

LABORATORY CONTROL SAMPLE: 3020829

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.8	104	85-115	
Arsenic	ug/L	40	40.1	100	85-115	
Cadmium	ug/L	40	43.2	108	85-115	
Chromium	ug/L	40	41.1	103	85-115	
Selenium	ug/L	40	40.8	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020830 3020831

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60384734009 Result	Spike Conc.	Spike Conc.	Result						
Antimony	ug/L	0.15J	40	40	38.8	38.2	97	95	70-130	2	20
Arsenic	ug/L	2.7	40	40	42.7	42.6	100	100	70-130	0	20
Cadmium	ug/L	<0.062	40	40	40.2	39.8	100	99	70-130	1	20
Chromium	ug/L	0.38J	40	40	39.0	38.5	97	95	70-130	1	20
Selenium	ug/L	<0.18	40	40	39.2	39.3	98	98	70-130	0	20

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch:	756898	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: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

METHOD BLANK: 3028935 Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.10	1.0	0.10	11/18/21 17:26	
Arsenic	ug/L	<0.11	1.0	0.11	11/18/21 17:26	
Cadmium	ug/L	<0.062	0.50	0.062	11/18/21 17:26	
Chromium	ug/L	<0.23	1.0	0.23	11/18/21 17:26	
Selenium	ug/L	<0.18	1.0	0.18	11/18/21 17:26	

LABORATORY CONTROL SAMPLE: 3028936

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.9	105	85-115	
Arsenic	ug/L	40	41.7	104	85-115	
Cadmium	ug/L	40	44.0	110	85-115	
Chromium	ug/L	40	38.1	95	85-115	
Selenium	ug/L	40	42.9	107	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3028937 3028938

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Antimony	ug/L	40	0.25J	40	44.5	111	107	70-130	4	20	
Arsenic	ug/L	40	49.6	40	90.5	102	105	70-130	1	20	
Cadmium	ug/L	40	0.55	40	60.7	150	146	70-130	3	20 M1	
Chromium	ug/L	40	21.5	40	59.0	94	93	70-130	0	20	
Selenium	ug/L	40	4.7	40	55.5	127	127	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 648552

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK: 2988277

Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<2.0	2.0	2.0	11/04/21 11:32	

LABORATORY CONTROL SAMPLE: 2988278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	48.9	98	90-110	

SAMPLE DUPLICATE: 2988279

Parameter	Units	60384734001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	480	485	1	20	

SAMPLE DUPLICATE: 2988280

Parameter	Units	50301781001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	217	220	1	20	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch:	753551	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK: 3016235 Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/02/21 11:20	

LABORATORY CONTROL SAMPLE: 3016236

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	994	99	80-120	

SAMPLE DUPLICATE: 3016237

Parameter	Units	60384736013 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	609	611	0	10	

SAMPLE DUPLICATE: 3016238

Parameter	Units	60384734005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	302	306	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 753818

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60384734006

METHOD BLANK: 3017179

Matrix: Water

Associated Lab Samples: 60384734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/03/21 10:36	

LABORATORY CONTROL SAMPLE: 3017180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3017181

Parameter	Units	60384734006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	355	356	0	10	

SAMPLE DUPLICATE: 3017182

Parameter	Units	60384736007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	591	583	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 753652 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: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK: 3016612 Matrix: Water
 Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/03/21 08:10	
Fluoride	mg/L	<0.086	0.20	0.086	11/03/21 08:10	
Sulfate	mg/L	<0.42	1.0	0.42	11/03/21 08:10	

METHOD BLANK: 3019321 Matrix: Water
 Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.45J	1.0	0.39	11/04/21 08:04	
Fluoride	mg/L	<0.086	0.20	0.086	11/04/21 08:04	
Sulfate	mg/L	<0.42	1.0	0.42	11/04/21 08:04	

METHOD BLANK: 3020953 Matrix: Water
 Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.45J	1.0	0.39	11/05/21 18:11	
Fluoride	mg/L	<0.086	0.20	0.086	11/05/21 18:11	
Sulfate	mg/L	<0.42	1.0	0.42	11/05/21 18:11	

LABORATORY CONTROL SAMPLE: 3016613

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	2.2	89	90-110 L2	
Sulfate	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 3019322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	101	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

LABORATORY CONTROL SAMPLE: 3020954

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	2.7	109	90-110	
Sulfate	mg/L	5	5.2	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3016614 3016615

Parameter	Units	60384777001		3016614		3016615		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec				
Chloride	mg/L	180	100	100	291	292	111	112	80-120	0	15
Fluoride	mg/L	4.6	50	50	59.3	59.7	109	110	80-120	1	15
Sulfate	mg/L	767	100	500	<8.4	1240	-762	94	80-120		15 M1

MATRIX SPIKE SAMPLE: 3016616

Parameter	Units	60384736021 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	60.7	50	109	97	80-120	
Fluoride	mg/L	0.36	2.5	3.1	111	80-120	
Sulfate	mg/L	256	100	358	102	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch:	754240	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: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

METHOD BLANK: 3018842 Matrix: Water
Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/05/21 08:53	
Fluoride	mg/L	<0.086	0.20	0.086	11/05/21 08:53	
Sulfate	mg/L	<0.42	1.0	0.42	11/05/21 08:53	

METHOD BLANK: 3021937 Matrix: Water
Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/08/21 08:38	
Fluoride	mg/L	<0.086	0.20	0.086	11/08/21 08:38	
Sulfate	mg/L	<0.42	1.0	0.42	11/08/21 08:38	

METHOD BLANK: 3023023 Matrix: Water
Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/09/21 07:59	
Fluoride	mg/L	<0.086	0.20	0.086	11/09/21 07:59	
Sulfate	mg/L	<0.42	1.0	0.42	11/09/21 07:59	

METHOD BLANK: 3024071 Matrix: Water
Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/10/21 10:55	
Fluoride	mg/L	<0.086	0.20	0.086	11/10/21 10:55	
Sulfate	mg/L	<0.42	1.0	0.42	11/10/21 10:55	

LABORATORY CONTROL SAMPLE: 3018843

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	2.5	100	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

LABORATORY CONTROL SAMPLE: 3018843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 3021938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

LABORATORY CONTROL SAMPLE: 3023024

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

LABORATORY CONTROL SAMPLE: 3024072

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	2.5	99	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018844 3018845

Parameter	Units	60384688029		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec						
Chloride	mg/L	185	100	100	306	301	117	112	80-120	1	15				
Fluoride	mg/L	0.92J	12.5	12.5	12.6	12.7	93	95	80-120	1	15				
Sulfate	mg/L	37.1	25	25	61.4	61.7	95	96	80-120	0	15				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018846 3018847

Parameter	Units	60384734005		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec						
Chloride	mg/L	3.2	5	5	7.6	7.6	88	88	80-120	0	15				
Fluoride	mg/L	0.27	2.5	2.5	2.6	2.6	93	93	80-120	0	15				
Sulfate	mg/L	28.7	25	25	58.7	57.8	120	116	80-120	1	15				

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-B1 **Lab ID: 60384734001** Collected: 10/27/21 15:36 Received: 10/30/21 04:25 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	0.307 ± 0.467 (0.804) C:NA T:104%	pCi/L	11/22/21 13:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.59 ± 0.520 (0.682) C:68% T:95%	pCi/L	11/19/21 14:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-3 **Lab ID: 60384734002** Collected: 10/27/21 13:27 Received: 10/30/21 04:25 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	0.0584 ± 0.413 (0.823) C:NA T:98%	pCi/L	11/22/21 13:39	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.34 ± 0.540 (0.840) C:62% T:89%	pCi/L	11/19/21 14:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-4 **Lab ID: 60384734003** Collected: 10/27/21 15:41 Received: 10/30/21 04:25 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	0.265 ± 0.452 (0.797) C:NA T:95%	pCi/L	11/22/21 13:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.864 ± 0.445 (0.788) C:71% T:91%	pCi/L	11/19/21 14:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-5 **Lab ID: 60384734004** Collected: 10/27/21 16:20 Received: 10/30/21 04:25 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	0.0661 ± 0.430 (0.866) C:NA T:99%	pCi/L	11/22/21 13:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.803 ± 0.419 (0.738) C:69% T:92%	pCi/L	11/19/21 14:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-6 **Lab ID: 60384734005** Collected: 10/27/21 10:07 Received: 10/30/21 04:25 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	0.000 ± 0.299 (0.633) C:NA T:95%	pCi/L	11/22/21 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.527 ± 0.352 (0.659) C:67% T:91%	pCi/L	11/19/21 14:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-7(r) **Lab ID: 60384734006** Collected: 10/27/21 14:15 Received: 10/30/21 04:25 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	0.259 ± 0.402 (0.696) C:NA T:91%	pCi/L	11/22/21 13:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.644 ± 0.412 (0.773) C:67% T:88%	pCi/L	11/19/21 14:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MS-1 **Lab ID: 60384734007** Collected: 10/27/21 10:07 Received: 10/30/21 04:25 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	113.27 %REC ± NA (NA) C:NA T:NA	pCi/L	11/22/21 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	110.58 %REC ± NA (NA) C:NA T:NA	pCi/L	11/19/21 14:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MSD-1 **Lab ID: 60384734008** Collected: 10/27/21 10:07 Received: 10/30/21 04:25 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	99.70 %REC 12.75 RPD ± NA (NA) C:NA T:NA	pCi/L	11/22/21 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	101.01 %REC 9.04 RPD ± NA (NA) C:NA T:NA	pCi/L	11/19/21 14:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-1 **Lab ID: 60384734009** Collected: 10/26/21 11:02 Received: 10/27/21 04:05 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	0.160 ± 0.647 (1.13) C:NA T:63%	pCi/L	01/09/22 13:07	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.572 ± 0.517 (1.05) C:52% T:83%	pCi/L	01/11/22 11:35	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-2 **Lab ID: 60384734010** Collected: 10/26/21 14:45 Received: 10/27/21 04:05 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	0.493 ± 0.746 (1.18) C:NA T:79%	pCi/L	01/09/22 13:07	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.218 ± 1.92 (4.38) C:63% T:61%	pCi/L	01/11/22 14:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-B2 **Lab ID: 60384734011** Collected: 10/25/21 16:02 Received: 10/27/21 04:05 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	0.000 ± 0.457 (0.819) C:NA T:96%	pCi/L	01/09/22 13:07	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.324 ± 0.798 (1.76) C:51% T:84%	pCi/L	01/11/22 11:38	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-DUP-1 **Lab ID: 60384734012** Collected: 10/26/21 00:00 Received: 10/27/21 04:05 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	0.282 ± 0.576 (0.947) C:NA T:94%	pCi/L	01/09/22 13:31	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.189 ± 1.79 (4.14) C:65% T:48%	pCi/L	01/11/22 14:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-FB-1 **Lab ID: 60384734013** Collected: 10/26/21 11:30 Received: 10/27/21 04:05 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	0.000 ± 0.316 (0.586) C:NA T:99%	pCi/L	01/09/22 13:31	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.471 ± 0.570 (1.39) C:50% T:86%	pCi/L	01/11/22 11:38	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 472458

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: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734007, 60384734008

METHOD BLANK: 2280944

Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734007, 60384734008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0658 ± 0.282 (0.644) C:68% T:96%	pCi/L	11/19/21 14:35	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 476806

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: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK: 2303566

Matrix: Water

Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0349 ± 0.274 (0.492) C:NA T:95%	pCi/L	01/09/22 13:07	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch:	472457	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: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734007, 60384734008

METHOD BLANK: 2280942 Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734007, 60384734008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.194 ± 0.357 (0.636) C:NA T:97%	pCi/L	11/22/21 13:11	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 476808

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: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK: 2303572

Matrix: Water

Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.315 ± 0.344 (0.714) C:57% T:91%	pCi/L	01/11/22 11:36	

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QUALIFIERS

Project: AMEREN RCPA

Pace Project No.: 60384734

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

B Analyte was detected in the associated method blank.

H1 Analysis conducted outside the EPA method holding time.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA

Pace Project No.: 60384734

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60384734001	R-MW-B1	EPA 200.7	754371	EPA 200.7	754544
60384734002	R-MW-3	EPA 200.7	754371	EPA 200.7	754544
60384734003	R-MW-4	EPA 200.7	754371	EPA 200.7	754544
60384734004	R-MW-5	EPA 200.7	754371	EPA 200.7	754544
60384734005	R-MW-6	EPA 200.7	754371	EPA 200.7	754544
60384734006	R-MW-7(r)	EPA 200.7	754371	EPA 200.7	754544
60384734009	R-MW-1	EPA 200.7	754371	EPA 200.7	754544
60384734010	R-MW-2	EPA 200.7	754371	EPA 200.7	754544
60384734011	R-MW-B2	EPA 200.7	754371	EPA 200.7	754544
60384734012	R-DUP-1	EPA 200.7	754371	EPA 200.7	754544
60384734013	R-FB-1	EPA 200.7	754371	EPA 200.7	754544
60384734001	R-MW-B1	EPA 200.8	756898	EPA 200.8	757071
60384734002	R-MW-3	EPA 200.8	756898	EPA 200.8	757071
60384734003	R-MW-4	EPA 200.8	756898	EPA 200.8	757071
60384734004	R-MW-5	EPA 200.8	756898	EPA 200.8	757071
60384734005	R-MW-6	EPA 200.8	756898	EPA 200.8	757071
60384734006	R-MW-7(r)	EPA 200.8	756898	EPA 200.8	757071
60384734009	R-MW-1	EPA 200.8	754751	EPA 200.8	754851
60384734010	R-MW-2	EPA 200.8	754751	EPA 200.8	754851
60384734011	R-MW-B2	EPA 200.8	754751	EPA 200.8	754851
60384734012	R-DUP-1	EPA 200.8	754751	EPA 200.8	754851
60384734013	R-FB-1	EPA 200.8	754751	EPA 200.8	754851
60384734001	R-MW-B1	EPA 903.1	472457		
60384734002	R-MW-3	EPA 903.1	472457		
60384734003	R-MW-4	EPA 903.1	472457		
60384734004	R-MW-5	EPA 903.1	472457		
60384734005	R-MW-6	EPA 903.1	472457		
60384734006	R-MW-7(r)	EPA 903.1	472457		
60384734007	R-MS-1	EPA 903.1	472457		
60384734008	R-MSD-1	EPA 903.1	472457		
60384734009	R-MW-1	EPA 903.1	476806		
60384734010	R-MW-2	EPA 903.1	476806		
60384734011	R-MW-B2	EPA 903.1	476806		
60384734012	R-DUP-1	EPA 903.1	476806		
60384734013	R-FB-1	EPA 903.1	476806		
60384734001	R-MW-B1	EPA 904.0	472458		
60384734002	R-MW-3	EPA 904.0	472458		
60384734003	R-MW-4	EPA 904.0	472458		
60384734004	R-MW-5	EPA 904.0	472458		
60384734005	R-MW-6	EPA 904.0	472458		
60384734006	R-MW-7(r)	EPA 904.0	472458		
60384734007	R-MS-1	EPA 904.0	472458		
60384734008	R-MSD-1	EPA 904.0	472458		
60384734009	R-MW-1	EPA 904.0	476808		
60384734010	R-MW-2	EPA 904.0	476808		
60384734011	R-MW-B2	EPA 904.0	476808		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA

Pace Project No.: 60384734

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60384734012	R-DUP-1	EPA 904.0	476808		
60384734013	R-FB-1	EPA 904.0	476808		
60384734001	R-MW-B1	SM 2320B	648552		
60384734002	R-MW-3	SM 2320B	648552		
60384734003	R-MW-4	SM 2320B	648552		
60384734004	R-MW-5	SM 2320B	648552		
60384734005	R-MW-6	SM 2320B	648552		
60384734006	R-MW-7(r)	SM 2320B	648552		
60384734009	R-MW-1	SM 2320B	648552		
60384734010	R-MW-2	SM 2320B	648552		
60384734011	R-MW-B2	SM 2320B	648552		
60384734012	R-DUP-1	SM 2320B	648552		
60384734013	R-FB-1	SM 2320B	648552		
60384734001	R-MW-B1	SM 2540C	753551		
60384734002	R-MW-3	SM 2540C	753551		
60384734003	R-MW-4	SM 2540C	753551		
60384734004	R-MW-5	SM 2540C	753551		
60384734005	R-MW-6	SM 2540C	753551		
60384734006	R-MW-7(r)	SM 2540C	753818		
60384734009	R-MW-1	SM 2540C	753551		
60384734010	R-MW-2	SM 2540C	753551		
60384734011	R-MW-B2	SM 2540C	753551		
60384734012	R-DUP-1	SM 2540C	753551		
60384734013	R-FB-1	SM 2540C	753551		
60384734001	R-MW-B1	EPA 300.0	754240		
60384734002	R-MW-3	EPA 300.0	754240		
60384734003	R-MW-4	EPA 300.0	754240		
60384734004	R-MW-5	EPA 300.0	754240		
60384734005	R-MW-6	EPA 300.0	754240		
60384734006	R-MW-7(r)	EPA 300.0	754240		
60384734009	R-MW-1	EPA 300.0	753652		
60384734010	R-MW-2	EPA 300.0	753652		
60384734011	R-MW-B2	EPA 300.0	753652		
60384734012	R-DUP-1	EPA 300.0	753652		
60384734013	R-FB-1	EPA 300.0	753652		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60384734



Client Name: Colder

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-206 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 3.1 Corr. Factor 0.2 Corrected 2.9

Date and initials of person examining contents: 10/30/21 cc

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	<p><i>All coolers out of temp held only Radion</i></p> <p><i>u 10/30/21</i></p> <p><i>Received 2 BP1A, 1 BP1U, 1 BP3U for Ameron ROP</i></p> <p><i>Sample ID R-MSD-1 taken 10/27/21</i></p> <p><i>@10/27</i></p>
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 ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# <u>603222</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<p>List sample IDs, volumes, lot #'s of preservative and the date/time added.</p>
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: _____

REVIEWED
By jchurch at 6:40 pm, 10/30/21

Project Manager Review _____ Date: _____



Sample Condition Upon Receipt
ESI Tech Spec Client

WO#: 60384734



60384734

Client Name: Golden

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 ^{31, 2-9} 15.5, 16.5 Corr. Factor -0.2 Corrected ^{3.3, 3.1} 15.3, 16.3

Date and initials of person examining contents: Jan 12/24
Jan KWS

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 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>Water</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , 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	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.

Start: <u>1550</u>	Start:
End: <u>1405</u>	End:
Temp: <u>4.8</u>	Temp:

Project Manager Review: _____

REVIEWED
By jchurc at 7:25 pm, 11/1/21

Date: _____



GOLDER
MEMBER OF WSP

MEMORANDUM

DATE January 14, 2022

Project No. 153140603

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA – DETECTION MONITORING AND ASSESSMENT MONITORING - DATA PACKAGE 60384734

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 a compound was analyzed outside of hold time, the results were qualified as estimates (J).
- 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 duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates biased high, and J- for estimates biased low).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
 Project Name: Ameren - RIEC - RCPA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140603
 Validation Date: 1/14/2022

Laboratory: Pace Analytical

SDG #: 60384736

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions); EPA 903.1/904.0 (Radium 226/228)

Matrix: Air Soil/Sed. Water Waste _____

Sample Names R-MW-B1, R-MW-3, R-MW-4, R-MW-5, R-MW-6, R-MW-7(r), R-MS-1, R-MSD-1, R-MW-1, R-MW-2, 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>10/26/2021 - 10/27/2021</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>SSS/BTT/ETF</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
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"/>	_____
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

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"/>	_____
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</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"/>	_____
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"/>	_____
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</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"/>	
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD: 1% [<20%]

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Comments/Notes:

The Sample Condition Upon Receipt form indicated that coolers received outside of temperature only contained radium samples, no qualification necessary.

TDS was analyzed outside of hold time in sample R-MW-B2.

Calcium, lithium, chloride, and sulfate analyzed at a dilution in multiple samples. No qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Blanks:

3019321/3020953: Chloride (0.45J/0.45J). Associated with samples -009 through -013. Results >RL and 10x blank not qualified. Results < RL were reported at the RL and qualified as estimates.

R-FB-1 @ R-MW-1: Boron (16.2J), alkalinity (2.0), chloride (0.45 J). Sample results >RL and 10x blank, no qualification necessary.

LCS:

3016613: LCS % recovery low for fluoride. Associated with samples -009 through -013. LCS recovery was within the EPA guidance recovery range (70%-130%). No qualification was deemed necessary.

R-DUP-1 @ R-MW-2: Dup RPD for chloride (67.1%) exceeds limit (20%).

Laboratory analyzed sample duplicates for alkalinity and TDS.

MS/MSD:

3019299: MS % recovery high for calcium. Associated with sample -011. Only 1 QC indicator out, no qualification necessary.

3019300/3019301: MS % recovery low for iron, only 1 QC indicator out, no qualification necessary. MS/MSD % recovery low for calcium. Associated with sample -005.

3028937/3028938: MS/MSD % recovery high for cadmium. Associated with sample -005.

3016614/3016615: MS % recovery low for sulfate, RPD not calculated. MS/MSD performed on unrelated sample, no qualification necessary.

December 27, 2021

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

RE: Project: AMEREN RCPA-CA
Pace Project No.: 60384736

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between October 27, 2021 and October 30, 2021. 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 - Indianapolis
- 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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates
Brendan Talbert, Golder Associates



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

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 #: 9526

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 Indianapolis

7726 Moller Road, Indianapolis, IN 46268

Illinois Accreditation #: 200074

Indiana Drinking Water Laboratory #: C-49-06

Kansas/TNI Certification #: E-10177

Kentucky UST Agency Interest #: 80226

Kentucky WW Laboratory ID #: 98019

Michigan Drinking Water Laboratory #9050

Ohio VAP Certified Laboratory #: CL0065

Oklahoma Laboratory #: 9204

Texas Certification #: T104704355

Wisconsin Laboratory #: 999788130

USDA Soil Permit #: P330-19-00257

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60384736001	R-P05S	Water	10/28/21 12:40	10/30/21 04:25
60384736002	R-P10S	Water	10/27/21 12:54	10/30/21 04:25
60384736003	R-P19S	Water	10/27/21 12:30	10/30/21 04:25
60384736004	R-P-19I	Water	10/27/21 13:40	10/30/21 04:25
60384736005	R-P19D	Water	10/27/21 12:18	10/30/21 04:25
60384736006	R-P22S	Water	10/27/21 10:40	10/30/21 04:25
60384736007	R-P22D	Water	10/27/21 10:05	10/30/21 04:25
60384736008	R-P29S	Water	10/29/21 13:15	10/30/21 04:25
60384736009	R-P30S	Water	10/29/21 11:10	10/30/21 04:25
60384736010	R-P31S	Water	10/28/21 11:45	10/30/21 04:25
60384736011	R-CA-MS-1	Water	10/27/21 10:05	10/30/21 04:25
60384736012	R-CA-MSD-1	Water	10/27/21 10:05	10/30/21 04:25
60384736013	R-P16S	Water	10/26/21 11:51	10/27/21 04:05
60384736014	R-P17S	Water	10/26/21 13:30	10/27/21 04:05
60384736015	R-P17I	Water	10/26/21 13:25	10/27/21 04:05
60384736016	R-P17D	Water	10/26/21 14:50	10/27/21 04:05
60384736017	R-P21S	Water	10/26/21 15:15	10/27/21 04:05
60384736018	R-P21I	Water	10/26/21 13:35	10/27/21 04:05
60384736019	R-P21D	Water	10/26/21 12:40	10/27/21 04:05
60384736020	R-P29D	Water	10/25/21 14:51	10/27/21 04:05
60384736021	R-CA-DUP-1	Water	10/25/21 00:00	10/27/21 04:05
60384736022	R-CA-DUP-2	Water	10/25/21 00:00	10/27/21 04:05
60384736023	R-CA-FB-1	Water	10/26/21 12:15	10/27/21 04:05
60384736024	R-CA-FB-2	Water	10/26/21 13:00	10/27/21 04:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384736001	R-P05S	EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736002	R-P10S	EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736003	R-P19S	EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736004	R-P-19I	EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736005	R-P19D	EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736006	R-P22S	EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384736007	R-P22D	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
60384736008	R-P29S	SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MA1	11	PASI-K
60384736009	R-P30S	EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
60384736010	R-P31S	SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736011	R-CA-MS-1	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
60384736012	R-CA-MSD-1	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384736013	R-P16S	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736014	R-P17S	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736015	R-P17I	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736016	R-P17D	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736017	R-P21S	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736018	R-P21I	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384736019	R-P21D	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
60384736020	R-P29D	SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MRV	11	PASI-K
60384736021	R-CA-DUP-1	EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
60384736022	R-CA-DUP-2	SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736023	R-CA-FB-1	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384736024	R-CA-FB-2	SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K

PASI-I = Pace Analytical Services - Indianapolis

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P05S **Lab ID: 60384736001** Collected: 10/28/21 12:40 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	184	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:16	7440-39-3	
Boron	4420	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:16	7440-42-8	
Calcium	65500	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:16	7440-70-2	
Iron	10100	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:16	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:16	7439-92-1	
Lithium	15.4	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:16	7439-93-2	
Magnesium	21800	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:16	7439-95-4	
Manganese	308	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:16	7439-96-5	
Molybdenum	11.8J	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:16	7439-98-7	
Potassium	5730	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:16	7440-09-7	
Sodium	29500	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:16	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 16:46	7440-36-0	
Arsenic	180	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 16:46	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 16:46	7440-43-9	
Chromium	0.39J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 16:46	7440-47-3	
Selenium	0.21J	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 16:46	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	265	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	368	mg/L	5.0	5.0	1		11/03/21 10:38		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	22.8	mg/L	2.0	0.78	2		11/05/21 22:46	16887-00-6	
Fluoride	0.43	mg/L	0.20	0.086	1		11/05/21 22:32	16984-48-8	
Sulfate	17.1	mg/L	1.0	0.42	1		11/05/21 22:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P10S **Lab ID: 60384736002** Collected: 10/27/21 12:54 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	185	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:18	7440-39-3	
Boron	2500	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:18	7440-42-8	
Calcium	70900	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:18	7440-70-2	M1
Iron	3160	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:18	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:18	7439-92-1	
Lithium	15.9	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:18	7439-93-2	
Magnesium	10900	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:18	7439-95-4	
Manganese	1200	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:18	7439-96-5	
Molybdenum	105	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:18	7439-98-7	
Potassium	4310	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:18	7440-09-7	
Sodium	106000	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:18	7440-23-5	M1
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 16:48	7440-36-0	
Arsenic	11.7	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 16:48	7440-38-2	
Cadmium	0.11J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 16:48	7440-43-9	
Chromium	0.44J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 16:48	7440-47-3	
Selenium	0.28J	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 16:48	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	268	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	534	mg/L	10.0	10.0	1		11/03/21 10:37		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	17.4	mg/L	1.0	0.39	1		11/08/21 18:24	16887-00-6	L1
Fluoride	0.48	mg/L	0.20	0.086	1		11/08/21 18:24	16984-48-8	L1
Sulfate	125	mg/L	20.0	8.4	20		11/08/21 18:42	14808-79-8	L1

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P19S **Lab ID: 60384736003** Collected: 10/27/21 12:30 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	256	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:22	7440-39-3	
Boron	449	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:22	7440-42-8	
Calcium	98400	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:22	7440-70-2	
Iron	10100	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:22	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:22	7439-92-1	
Lithium	26.2	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:22	7439-93-2	
Magnesium	19100	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:22	7439-95-4	
Manganese	687	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:22	7439-96-5	
Molybdenum	6.5J	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:22	7439-98-7	
Potassium	5600	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:22	7440-09-7	
Sodium	22700	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:22	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 16:49	7440-36-0	
Arsenic	13.7	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 16:49	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 16:49	7440-43-9	
Chromium	0.38J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 16:49	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 16:49	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	327	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	406	mg/L	5.0	5.0	1		11/03/21 10:37		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	2.6	mg/L	1.0	0.39	1		11/08/21 19:01	16887-00-6	L1
Fluoride	0.32	mg/L	0.20	0.086	1		11/08/21 19:01	16984-48-8	L1
Sulfate	30.5	mg/L	5.0	2.1	5		11/08/21 19:19	14808-79-8	L1

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P-19I **Lab ID: 60384736004** Collected: 10/27/21 13:40 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	14.6	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:25	7440-39-3	B
Boron	4660	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:25	7440-42-8	
Calcium	10600	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:25	7440-70-2	
Iron	102	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:25	7439-89-6	
Lead	5.0J	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:25	7439-92-1	
Lithium	16.3	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:25	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:25	7439-95-4	
Manganese	1.8J	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:25	7439-96-5	
Molybdenum	138	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:25	7439-98-7	
Potassium	12600	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:25	7440-09-7	
Sodium	295000	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:25	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	2.3	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 16:55	7440-36-0	
Arsenic	149	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 16:55	7440-38-2	
Cadmium	0.15J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 16:55	7440-43-9	
Chromium	0.72J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 16:55	7440-47-3	
Selenium	0.99J	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 16:55	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	455	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	996	mg/L	10.0	10.0	1		11/03/21 10:37		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	26.0	mg/L	5.0	1.9	5		11/12/21 14:50	16887-00-6	
Fluoride	1.3	mg/L	0.20	0.086	1		11/15/21 22:52	16984-48-8	
Sulfate	168	mg/L	20.0	8.4	20		11/11/21 18:50	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P19D **Lab ID: 60384736005** Collected: 10/27/21 12:18 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	99.0	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:27	7440-39-3	
Boron	11900	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:27	7440-42-8	
Calcium	30200	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:27	7440-70-2	
Iron	1920	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:27	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:27	7439-92-1	
Lithium	19.0	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:27	7439-93-2	
Magnesium	4640	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:27	7439-95-4	
Manganese	246	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:27	7439-96-5	
Molybdenum	974	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:27	7439-98-7	
Potassium	3440	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:27	7440-09-7	
Sodium	183000	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:27	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 17:01	7440-36-0	
Arsenic	0.72J	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 17:01	7440-38-2	
Cadmium	0.16J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 17:01	7440-43-9	
Chromium	0.89J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 17:01	7440-47-3	
Selenium	0.29J	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 17:01	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	208	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	661	mg/L	10.0	10.0	1		11/03/21 10:38		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.4	mg/L	5.0	1.9	5		11/10/21 03:48	16887-00-6	L1
Fluoride	2.0	mg/L	0.20	0.086	1		11/08/21 20:14	16984-48-8	L1
Sulfate	5.8	mg/L	5.0	2.1	5		11/10/21 03:48	14808-79-8	L1

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P22S **Lab ID: 60384736006** Collected: 10/27/21 10:40 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	170	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:29	7440-39-3	
Boron	547	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:29	7440-42-8	
Calcium	234000	ug/L	1000	377	5	11/16/21 15:51	11/22/21 12:25	7440-70-2	
Iron	691	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:29	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:29	7439-92-1	
Lithium	62.4	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:29	7439-93-2	
Magnesium	43600	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:29	7439-95-4	
Manganese	520	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:29	7439-96-5	
Molybdenum	8.3J	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:29	7439-98-7	
Potassium	7860	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:29	7440-09-7	
Sodium	60900	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:29	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 17:03	7440-36-0	
Arsenic	1.5	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 17:03	7440-38-2	
Cadmium	0.16J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 17:03	7440-43-9	
Chromium	0.30J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 17:03	7440-47-3	
Selenium	0.42J	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 17:03	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	283	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	962	mg/L	10.0	10.0	1		11/03/21 10:38		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	41.2	mg/L	10.0	3.9	10		11/08/21 21:46	16887-00-6	L1
Fluoride	0.37	mg/L	0.20	0.086	1		11/08/21 21:27	16984-48-8	L1
Sulfate	206	mg/L	20.0	8.4	20		11/08/21 22:04	14808-79-8	L1

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P22D **Lab ID: 60384736007** Collected: 10/27/21 10:05 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	74.2	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:31	7440-39-3	
Boron	9490	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:31	7440-42-8	
Calcium	22800	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:31	7440-70-2	
Iron	1210	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:31	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:31	7439-92-1	
Lithium	27.7	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:31	7439-93-2	
Magnesium	3230	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:31	7439-95-4	
Manganese	72.5	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:31	7439-96-5	
Molybdenum	358	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:31	7439-98-7	
Potassium	4680	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:31	7440-09-7	
Sodium	171000	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:31	7440-23-5	M1
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.13J	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 17:05	7440-36-0	
Arsenic	8.6	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 17:05	7440-38-2	
Cadmium	0.096J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 17:05	7440-43-9	
Chromium	1.5	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 17:05	7440-47-3	
Selenium	0.74J	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 17:05	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	275	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	591	mg/L	10.0	10.0	1		11/03/21 10:38		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	26.1	mg/L	5.0	1.9	5		11/08/21 23:18	16887-00-6	
Fluoride	2.5	mg/L	0.20	0.086	1		11/08/21 22:22	16984-48-8	
Sulfate	98.0	mg/L	5.0	2.1	5		11/08/21 23:18	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P29S **Lab ID: 60384736008** Collected: 10/29/21 13:15 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	601	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:41	7440-39-3	
Boron	85.5J	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:41	7440-42-8	
Calcium	251000	ug/L	1000	377	5	11/16/21 15:51	11/22/21 12:27	7440-70-2	
Iron	11500	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:41	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:41	7439-92-1	
Lithium	57.8	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:41	7439-93-2	
Magnesium	48300	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:41	7439-95-4	
Manganese	514	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:41	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:41	7439-98-7	
Potassium	6940	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:41	7440-09-7	
Sodium	23500	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:41	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 17:15	7440-36-0	
Arsenic	22.1	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 17:15	7440-38-2	
Cadmium	0.078J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 17:15	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 17:15	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 17:15	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	643	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	935	mg/L	10.0	10.0	1		11/03/21 10:39		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	30.7	mg/L	5.0	1.9	5		11/10/21 04:00	16887-00-6	L1
Fluoride	0.23	mg/L	0.20	0.086	1		11/09/21 00:49	16984-48-8	L1
Sulfate	125	mg/L	20.0	8.4	20		11/10/21 04:11	14808-79-8	L1

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P30S **Lab ID: 60384736009** Collected: 10/29/21 11:10 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	109	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:43	7440-39-3	
Boron	977	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:43	7440-42-8	
Calcium	160000	ug/L	1000	377	5	11/16/21 15:51	11/22/21 12:30	7440-70-2	
Iron	1590	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:43	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:43	7439-92-1	
Lithium	35.7	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:43	7439-93-2	
Magnesium	23400	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:43	7439-95-4	
Manganese	579	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:43	7439-96-5	
Molybdenum	2.3J	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:43	7439-98-7	
Potassium	6970	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:43	7440-09-7	
Sodium	62600	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:43	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.94J	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 17:17	7440-36-0	
Arsenic	1.5	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 17:17	7440-38-2	
Cadmium	0.090J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 17:17	7440-43-9	
Chromium	0.30J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 17:17	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 17:17	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	345	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	831	mg/L	13.3	13.3	1		11/03/21 10:39		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	39.3	mg/L	5.0	1.9	5		11/09/21 01:26	16887-00-6	L1
Fluoride	0.44	mg/L	0.20	0.086	1		11/09/21 01:08	16984-48-8	L1
Sulfate	149	mg/L	20.0	8.4	20		11/09/21 01:44	14808-79-8	L1

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P31S **Lab ID: 60384736010** Collected: 10/28/21 11:45 Received: 10/30/21 04:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	302	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:45	7440-39-3	
Boron	307	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:45	7440-42-8	
Calcium	60400	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:45	7440-70-2	
Iron	9880	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:45	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:45	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:45	7439-93-2	
Magnesium	11500	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:45	7439-95-4	
Manganese	2180	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:45	7439-96-5	
Molybdenum	7.1J	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:45	7439-98-7	
Potassium	3720	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:45	7440-09-7	
Sodium	11500	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:45	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 17:19	7440-36-0	
Arsenic	83.7	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 17:19	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 17:19	7440-43-9	
Chromium	0.51J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 17:19	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 17:19	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	189	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	293	mg/L	5.0	5.0	1		11/03/21 10:38		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	1.6	mg/L	1.0	0.39	1		11/09/21 14:08	16887-00-6	B
Fluoride	0.39	mg/L	0.20	0.086	1		11/09/21 14:08	16984-48-8	
Sulfate	15.4	mg/L	1.0	0.42	1		11/09/21 14:08	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P16S **Lab ID: 60384736013** Collected: 10/26/21 11:51 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	112	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 21:43	7440-39-3	
Boron	482	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 21:43	7440-42-8	
Calcium	148000	ug/L	2000	754	10	11/05/21 16:54	11/10/21 15:09	7440-70-2	M1
Iron	82.6	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 21:43	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 21:43	7439-92-1	
Lithium	<76.7	ug/L	100	76.7	10	11/05/21 16:54	11/10/21 15:09	7439-93-2	
Magnesium	32300	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 21:43	7439-95-4	M1
Manganese	1.1J	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 21:43	7439-96-5	
Molybdenum	13.7J	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 21:43	7439-98-7	
Potassium	4290	ug/L	500	146	1	11/05/21 16:54	11/09/21 21:43	7440-09-7	
Sodium	35300	ug/L	500	254	1	11/05/21 16:54	11/09/21 21:43	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.14J	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 11:45	7440-36-0	
Arsenic	1.0	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 12:20	7440-38-2	
Cadmium	0.065J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 12:20	7440-43-9	
Chromium	0.37J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 12:20	7440-47-3	
Selenium	2.9	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 12:20	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	408	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	609	mg/L	10.0	10.0	1		11/02/21 11:21		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	2.5	mg/L	1.0	0.39	1		11/04/21 16:31	16887-00-6	B
Fluoride	0.48	mg/L	0.20	0.086	1		11/04/21 16:31	16984-48-8	L2
Sulfate	<0.42	mg/L	1.0	0.42	1		11/04/21 16:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P17S **Lab ID: 60384736014** Collected: 10/26/21 13:30 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	183	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 21:49	7440-39-3	
Boron	1390	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 21:49	7440-42-8	
Calcium	186000	ug/L	2000	754	10	11/05/21 16:54	11/10/21 15:16	7440-70-2	
Iron	1740	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 21:49	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 21:49	7439-92-1	
Lithium	<76.7	ug/L	100	76.7	10	11/05/21 16:54	11/10/21 15:16	7439-93-2	
Magnesium	35100	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 21:49	7439-95-4	
Manganese	4660	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 21:49	7439-96-5	
Molybdenum	18.4J	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 21:49	7439-98-7	
Potassium	3510	ug/L	500	146	1	11/05/21 16:54	11/09/21 21:49	7440-09-7	
Sodium	183000	ug/L	500	254	1	11/05/21 16:54	11/09/21 21:49	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.18J	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 11:47	7440-36-0	
Arsenic	21.0	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:25	7440-38-2	
Cadmium	0.10J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:25	7440-43-9	
Chromium	0.47J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:25	7440-47-3	
Selenium	0.91J	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:25	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	620	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1140	mg/L	13.3	13.3	1		11/02/21 11:21		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	66.0	mg/L	5.0	1.9	5		11/03/21 11:12	16887-00-6	
Fluoride	0.37	mg/L	0.20	0.086	1		11/04/21 16:42	16984-48-8	L2
Sulfate	<0.42	mg/L	1.0	0.42	1		11/04/21 16:42	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P171 **Lab ID: 60384736015** Collected: 10/26/21 13:25 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	21.4	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 21:51	7440-39-3	
Boron	2160	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 21:51	7440-42-8	
Calcium	12500	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 21:51	7440-70-2	
Iron	242	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 21:51	7439-89-6	
Lead	9.8J	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 21:51	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 21:51	7439-93-2	
Magnesium	622	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 21:51	7439-95-4	
Manganese	7.2	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 21:51	7439-96-5	
Molybdenum	133	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 21:51	7439-98-7	
Potassium	2350	ug/L	500	146	1	11/05/21 16:54	11/09/21 21:51	7440-09-7	
Sodium	238000	ug/L	500	254	1	11/05/21 16:54	11/09/21 21:51	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.34J	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 11:56	7440-36-0	
Arsenic	53.3	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:36	7440-38-2	
Cadmium	0.30J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:36	7440-43-9	
Chromium	0.89J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:36	7440-47-3	
Selenium	1.7	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:36	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	169	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	769	mg/L	10.0	10.0	1		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	22.8	mg/L	2.0	0.78	2		11/03/21 12:23	16887-00-6	
Fluoride	1.9	mg/L	0.20	0.086	1		11/04/21 16:53	16984-48-8	L2
Sulfate	4.3	mg/L	1.0	0.42	1		11/04/21 16:53	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P17D **Lab ID: 60384736016** Collected: 10/26/21 14:50 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	104	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 21:58	7440-39-3	
Boron	7560	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 21:58	7440-42-8	
Calcium	45200	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 21:58	7440-70-2	
Iron	2490	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 21:58	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 21:58	7439-92-1	
Lithium	39.1	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 21:58	7439-93-2	
Magnesium	10300	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 21:58	7439-95-4	
Manganese	384	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 21:58	7439-96-5	
Molybdenum	732	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 21:58	7439-98-7	
Potassium	7330	ug/L	500	146	1	11/05/21 16:54	11/09/21 21:58	7440-09-7	
Sodium	132000	ug/L	500	254	1	11/05/21 16:54	11/09/21 21:58	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 11:58	7440-36-0	
Arsenic	1.1	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:38	7440-38-2	
Cadmium	0.15J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:38	7440-43-9	
Chromium	0.38J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:38	7440-47-3	
Selenium	0.25J	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:38	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	127	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	615	mg/L	10.0	10.0	1		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	24.0	mg/L	5.0	1.9	5		11/03/21 12:58	16887-00-6	
Fluoride	0.70	mg/L	0.20	0.086	1		11/04/21 17:05	16984-48-8	L2
Sulfate	2.4	mg/L	1.0	0.42	1		11/04/21 17:05	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P21S **Lab ID: 60384736017** Collected: 10/26/21 15:15 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	260	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:00	7440-39-3	
Boron	213	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:00	7440-42-8	
Calcium	136000	ug/L	2000	754	10	11/05/21 16:54	11/10/21 15:18	7440-70-2	
Iron	701	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:00	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:00	7439-92-1	
Lithium	<76.7	ug/L	100	76.7	10	11/05/21 16:54	11/10/21 15:18	7439-93-2	
Magnesium	26500	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:00	7439-95-4	
Manganese	106	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:00	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:00	7439-98-7	
Potassium	4350	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:00	7440-09-7	
Sodium	24300	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:00	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.19J	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 11:59	7440-36-0	
Arsenic	5.9	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:40	7440-38-2	
Cadmium	0.17J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:40	7440-43-9	
Chromium	0.31J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:40	7440-47-3	
Selenium	0.85J	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:40	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	422	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	512	mg/L	10.0	10.0	1		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	6.0	mg/L	1.0	0.39	1		11/04/21 17:16	16887-00-6	
Fluoride	0.28	mg/L	0.20	0.086	1		11/04/21 17:16	16984-48-8	L2
Sulfate	<0.42	mg/L	1.0	0.42	1		11/04/21 17:16	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P211 **Lab ID: 60384736018** Collected: 10/26/21 13:35 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	39.2	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:02	7440-39-3	
Boron	2450	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:02	7440-42-8	
Calcium	19100	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 22:02	7440-70-2	
Iron	253	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:02	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:02	7439-92-1	
Lithium	20.1	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 22:02	7439-93-2	
Magnesium	2480	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:02	7439-95-4	
Manganese	51.5	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:02	7439-96-5	
Molybdenum	134	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:02	7439-98-7	
Potassium	4840	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:02	7440-09-7	
Sodium	99200	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:02	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:01	7440-36-0	
Arsenic	5.0	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:42	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:42	7440-43-9	
Chromium	0.50J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:42	7440-47-3	
Selenium	0.39J	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:42	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	137	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	372	mg/L	5.0	5.0	1		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	26.1	mg/L	5.0	1.9	5		11/03/21 21:16	16887-00-6	
Fluoride	1.1	mg/L	0.20	0.086	1		11/04/21 17:27	16984-48-8	L2
Sulfate	5.9	mg/L	1.0	0.42	1		11/04/21 17:27	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P21D **Lab ID: 60384736019** Collected: 10/26/21 12:40 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	84.1	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:04	7440-39-3	
Boron	6410	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:04	7440-42-8	
Calcium	74800	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 22:04	7440-70-2	
Iron	1610	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:04	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:04	7439-92-1	
Lithium	146	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 22:04	7439-93-2	
Magnesium	25400	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:04	7439-95-4	
Manganese	627	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:04	7439-96-5	
Molybdenum	484	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:04	7439-98-7	
Potassium	8290	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:04	7440-09-7	
Sodium	319000	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:04	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:03	7440-36-0	
Arsenic	0.49J	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:44	7440-38-2	
Cadmium	0.074J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:44	7440-43-9	
Chromium	0.57J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:44	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:44	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	239	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1120	mg/L	13.3	13.3	1		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	383	mg/L	50.0	19.4	50		11/03/21 14:57	16887-00-6	
Fluoride	1.4	mg/L	0.20	0.086	1		11/04/21 17:39	16984-48-8	L2
Sulfate	4.8	mg/L	1.0	0.42	1		11/04/21 17:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P29D **Lab ID: 60384736020** Collected: 10/25/21 14:51 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	147	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:06	7440-39-3	
Boron	100	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:06	7440-42-8	
Calcium	86300	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 22:06	7440-70-2	
Iron	4050	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:06	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:06	7439-92-1	
Lithium	36.6	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 22:06	7439-93-2	
Magnesium	23800	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:06	7439-95-4	
Manganese	139	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:06	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:06	7439-98-7	
Potassium	4020	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:06	7440-09-7	
Sodium	51900	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:06	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:08	7440-36-0	
Arsenic	0.99J	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:58	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:58	7440-43-9	
Chromium	0.35J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:58	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:58	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	313	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	443	mg/L	10.0	10.0	1		11/02/21 11:21		H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	58.9	mg/L	10.0	3.9	10		11/03/21 15:32	16887-00-6	
Fluoride	0.32	mg/L	0.20	0.086	1		11/04/21 17:50	16984-48-8	L2
Sulfate	19.9	mg/L	1.0	0.42	1		11/03/21 15:09	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-DUP-1 **Lab ID: 60384736021** Collected: 10/25/21 00:00 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	182	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:11	7440-39-3	
Boron	1380	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:11	7440-42-8	
Calcium	181000	ug/L	2000	754	10	11/05/21 16:54	11/10/21 15:20	7440-70-2	
Iron	1710	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:11	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:11	7439-92-1	
Lithium	<76.7	ug/L	100	76.7	10	11/05/21 16:54	11/10/21 15:20	7439-93-2	
Magnesium	34600	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:11	7439-95-4	
Manganese	4630	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:11	7439-96-5	
Molybdenum	19.3J	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:11	7439-98-7	
Potassium	3420	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:11	7440-09-7	
Sodium	184000	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:11	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.20J	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:10	7440-36-0	
Arsenic	21.8	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 12:00	7440-38-2	
Cadmium	0.075J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 12:00	7440-43-9	
Chromium	0.45J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 12:00	7440-47-3	
Selenium	0.88J	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 12:00	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	617	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1110	mg/L	13.3	13.3	1		11/03/21 10:37		H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	60.7	mg/L	10.0	3.9	10		11/03/21 16:31	16887-00-6	
Fluoride	0.36	mg/L	0.20	0.086	1		11/04/21 18:24	16984-48-8	L2
Sulfate	256	mg/L	20.0	8.4	20		11/04/21 18:47	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-DUP-2 **Lab ID: 60384736022** Collected: 10/25/21 00:00 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	40.3	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:13	7440-39-3	
Boron	2530	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:13	7440-42-8	
Calcium	19500	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 22:13	7440-70-2	
Iron	261	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:13	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:13	7439-92-1	
Lithium	20.3	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 22:13	7439-93-2	
Magnesium	2530	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:13	7439-95-4	
Manganese	52.0	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:13	7439-96-5	
Molybdenum	137	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:13	7439-98-7	
Potassium	5060	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:13	7440-09-7	
Sodium	102000	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:13	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:12	7440-36-0	
Arsenic	5.1	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 12:02	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 12:02	7440-43-9	
Chromium	0.49J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 12:02	7440-47-3	
Selenium	0.39J	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 12:02	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	139	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	360	mg/L	5.0	5.0	1		11/03/21 10:37		H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	26.0	mg/L	5.0	1.9	5		11/03/21 17:07	16887-00-6	
Fluoride	1.1	mg/L	0.20	0.086	1		11/04/21 19:09	16984-48-8	L2
Sulfate	76.1	mg/L	5.0	2.1	5		11/03/21 17:07	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-FB-1 **Lab ID: 60384736023** Collected: 10/26/21 12:15 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<1.8	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:15	7440-39-3	
Boron	12.3J	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:15	7440-42-8	
Calcium	<75.4	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 22:15	7440-70-2	
Iron	<21.4	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:15	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:15	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 22:15	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:15	7439-95-4	
Manganese	<0.74	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:15	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:15	7439-98-7	
Potassium	<146	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:15	7440-09-7	
Sodium	<254	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:15	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:17	7440-36-0	
Arsenic	<0.11	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:54	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:54	7440-43-9	
Chromium	0.31J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:54	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:54	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	<2.0	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.49J	mg/L	1.0	0.39	1		11/04/21 19:21	16887-00-6	B
Fluoride	<0.086	mg/L	0.20	0.086	1		11/04/21 19:21	16984-48-8	L2
Sulfate	<0.42	mg/L	1.0	0.42	1		11/04/21 19:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-FB-2 **Lab ID: 60384736024** Collected: 10/26/21 13:00 Received: 10/27/21 04:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<1.8	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:17	7440-39-3	
Boron	<8.6	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:17	7440-42-8	
Calcium	<75.4	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 22:17	7440-70-2	
Iron	<21.4	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:17	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:17	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 22:17	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:17	7439-95-4	
Manganese	<0.74	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:17	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:17	7439-98-7	
Potassium	<146	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:17	7440-09-7	
Sodium	<254	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:17	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:19	7440-36-0	
Arsenic	<0.11	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:56	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:56	7440-43-9	
Chromium	0.31J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:56	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:56	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	<2.0	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.50J	mg/L	1.0	0.39	1		11/04/21 19:32	16887-00-6	B
Fluoride	<0.086	mg/L	0.20	0.086	1		11/04/21 19:32	16984-48-8	L2
Sulfate	<0.42	mg/L	1.0	0.42	1		11/04/21 19:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA
Pace Project No.: 60384736

QC Batch: 754494 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: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

METHOD BLANK: 3019879 Matrix: Water
Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	11/09/21 21:39	
Boron	ug/L	<8.6	100	8.6	11/09/21 21:39	
Calcium	ug/L	<75.4	200	75.4	11/09/21 21:39	
Iron	ug/L	<21.4	50.0	21.4	11/09/21 21:39	
Lead	ug/L	<3.8	10.0	3.8	11/09/21 21:39	
Lithium	ug/L	<7.7	10.0	7.7	11/09/21 21:39	
Magnesium	ug/L	<31.4	50.0	31.4	11/09/21 21:39	
Manganese	ug/L	<0.74	5.0	0.74	11/09/21 21:39	
Molybdenum	ug/L	<2.2	20.0	2.2	11/09/21 21:39	
Potassium	ug/L	<146	500	146	11/09/21 21:39	
Sodium	ug/L	<254	500	254	11/09/21 21:39	

LABORATORY CONTROL SAMPLE: 3019880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	949	95	85-115	
Boron	ug/L	1000	938	94	85-115	
Calcium	ug/L	10000	9690	97	85-115	
Iron	ug/L	10000	9690	97	85-115	
Lead	ug/L	1000	942	94	85-115	
Lithium	ug/L	1000	862	86	85-115	
Magnesium	ug/L	10000	9770	98	85-115	
Manganese	ug/L	1000	960	96	85-115	
Molybdenum	ug/L	1000	972	97	85-115	
Potassium	ug/L	10000	9430	94	85-115	
Sodium	ug/L	10000	9670	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019881 3019882

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60384736013 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Barium	ug/L	112	1000	1000	1090	1100	98	99	70-130	1	20	
Boron	ug/L	482	1000	1000	1390	1450	91	97	70-130	4	20	
Calcium	ug/L	148000	10000	10000	155000	162000	69	139	70-130	4	20	M1
Iron	ug/L	82.6	10000	10000	9500	9530	94	94	70-130	0	20	
Lead	ug/L	<3.8	1000	1000	947	963	95	96	70-130	2	20	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019881												3019882	
Parameter	Units	60384736013 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Lithium	ug/L	<76.7	1000	1000	866	868	83	84	70-130	0	20		
Magnesium	ug/L	32300	10000	10000	39100	39600	68	73	70-130	1	20	M1	
Manganese	ug/L	1.1J	1000	1000	920	930	92	93	70-130	1	20		
Molybdenum	ug/L	13.7J	1000	1000	996	1000	98	99	70-130	1	20		
Potassium	ug/L	4290	10000	10000	14000	14500	98	102	70-130	3	20		
Sodium	ug/L	35300	10000	10000	44400	46300	91	111	70-130	4	20		

MATRIX SPIKE SAMPLE: 3019883											
Parameter	Units	60384736020 Result	Spike Conc.	MS	MS	% Rec	Limits	Qualifiers			
				Result	% Rec						
Barium	ug/L	147	1000	1140	99	70-130					
Boron	ug/L	100	1000	1030	93	70-130					
Calcium	ug/L	86300	10000	98200	119	70-130					
Iron	ug/L	4050	10000	13700	97	70-130					
Lead	ug/L	<3.8	1000	960	96	70-130					
Lithium	ug/L	36.6	1000	1060	102	70-130					
Magnesium	ug/L	23800	10000	32300	84	70-130					
Manganese	ug/L	139	1000	1080	94	70-130					
Molybdenum	ug/L	<2.2	1000	1000	100	70-130					
Potassium	ug/L	4020	10000	14300	103	70-130					
Sodium	ug/L	51900	10000	63100	113	70-130					

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch:	756724	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:	60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010		

METHOD BLANK:	3028124	Matrix:	Water
Associated Lab Samples:	60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	2.0J	5.0	1.8	11/19/21 11:08	
Boron	ug/L	<8.6	100	8.6	11/19/21 11:08	
Calcium	ug/L	<75.4	200	75.4	11/19/21 11:08	
Iron	ug/L	<21.4	50.0	21.4	11/19/21 11:08	
Lead	ug/L	<3.8	10.0	3.8	11/19/21 11:08	
Lithium	ug/L	<7.7	10.0	7.7	11/19/21 11:08	
Magnesium	ug/L	<31.4	50.0	31.4	11/19/21 11:08	
Manganese	ug/L	<0.74	5.0	0.74	11/19/21 11:08	
Molybdenum	ug/L	<2.2	20.0	2.2	11/19/21 11:08	
Potassium	ug/L	<146	500	146	11/19/21 11:08	
Sodium	ug/L	<254	500	254	11/19/21 11:08	

LABORATORY CONTROL SAMPLE: 3028125

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	983	98	85-115	
Boron	ug/L	1000	960	96	85-115	
Calcium	ug/L	10000	9630	96	85-115	
Iron	ug/L	10000	9760	98	85-115	
Lead	ug/L	1000	984	98	85-115	
Lithium	ug/L	1000	848	85	85-115	
Magnesium	ug/L	10000	10000	100	85-115	
Manganese	ug/L	1000	968	97	85-115	
Molybdenum	ug/L	1000	1000	100	85-115	
Potassium	ug/L	10000	9660	97	85-115	
Sodium	ug/L	10000	9790	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3028126 3028127

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60384736007 Result	Spike Conc.	Spike Conc.	Result						
Barium	ug/L	74.2	1000	1000	1050	1060	98	98	70-130	1	20
Boron	ug/L	9490	1000	1000	10400	10400	87	90	70-130	0	20
Calcium	ug/L	22800	10000	10000	31800	32000	90	92	70-130	0	20
Iron	ug/L	1210	10000	10000	11000	11000	98	98	70-130	1	20
Lead	ug/L	<3.8	1000	1000	984	991	98	99	70-130	1	20

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3028126 3028127											
Parameter	Units	60384736007		MS	MSD	3028127		% Rec	% Rec	% Rec	Max
		Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec				
Lithium	ug/L	27.7	1000	1000	1130	1140	111	112	70-130	1	20
Magnesium	ug/L	3230	10000	10000	13000	13100	98	99	70-130	0	20
Manganese	ug/L	72.5	1000	1000	1050	1050	98	98	70-130	0	20
Molybdenum	ug/L	358	1000	1000	1360	1370	100	102	70-130	1	20
Potassium	ug/L	4680	10000	10000	14400	14400	97	97	70-130	0	20
Sodium	ug/L	171000	10000	10000	178000	178000	63	68	70-130	0	20 M1

MATRIX SPIKE SAMPLE: 3028129							
Parameter	Units	60384736002	Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits	
Barium	ug/L	185	1000	1140	95	70-130	
Boron	ug/L	2500	1000	3370	87	70-130	
Calcium	ug/L	70900	10000	77500	66	70-130	M1
Iron	ug/L	3160	10000	12700	95	70-130	
Lead	ug/L	<3.8	1000	967	97	70-130	
Lithium	ug/L	15.9	1000	1070	105	70-130	
Magnesium	ug/L	10900	10000	19500	86	70-130	
Manganese	ug/L	1200	1000	2080	88	70-130	
Molybdenum	ug/L	105	1000	1100	99	70-130	
Potassium	ug/L	4310	10000	14000	97	70-130	
Sodium	ug/L	106000	10000	112000	60	70-130	M1

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch:	754495	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: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

METHOD BLANK: 3019884 Matrix: Water

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.10	1.0	0.10	11/10/21 11:40	
Arsenic	ug/L	<0.11	1.0	0.11	11/08/21 11:17	
Cadmium	ug/L	<0.062	0.50	0.062	11/08/21 11:17	
Chromium	ug/L	<0.23	1.0	0.23	11/08/21 11:17	
Selenium	ug/L	<0.18	1.0	0.18	11/08/21 11:17	

LABORATORY CONTROL SAMPLE: 3019885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.7	104	85-115	
Arsenic	ug/L	40	41.1	103	85-115	
Cadmium	ug/L	40	45.7	114	85-115	
Chromium	ug/L	40	41.1	103	85-115	
Selenium	ug/L	40	41.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019886 3019887

Parameter	Units	60384736014 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Antimony	ug/L	0.18J	40	38.1	38.5	95	96	70-130	1	20		
Arsenic	ug/L	21.0	40	61.6	60.9	101	100	70-130	1	20		
Cadmium	ug/L	0.10J	40	38.3	37.8	96	94	70-130	1	20		
Chromium	ug/L	0.47J	40	38.4	38.1	95	94	70-130	1	20		
Selenium	ug/L	0.91J	40	40.3	40.5	98	99	70-130	1	20		

MATRIX SPIKE SAMPLE: 3019888

Parameter	Units	60384736019 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.10	40	32.9	82	70-130	
Arsenic	ug/L	0.49J	40	39.0	96	70-130	
Cadmium	ug/L	0.074J	40	29.4	73	70-130	
Chromium	ug/L	0.57J	40	39.1	96	70-130	
Selenium	ug/L	<0.18	40	31.4	78	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA
Pace Project No.: 60384736

QC Batch: 756725 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: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010

METHOD BLANK: 3028130 Matrix: Water
Associated Lab Samples: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.10	1.0	0.10	11/18/21 16:41	
Arsenic	ug/L	<0.11	1.0	0.11	11/18/21 16:41	
Cadmium	ug/L	<0.062	0.50	0.062	11/18/21 16:41	
Chromium	ug/L	<0.23	1.0	0.23	11/18/21 16:41	
Selenium	ug/L	<0.18	1.0	0.18	11/18/21 16:41	

LABORATORY CONTROL SAMPLE: 3028131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.0	103	85-115	
Arsenic	ug/L	40	41.1	103	85-115	
Cadmium	ug/L	40	43.0	108	85-115	
Chromium	ug/L	40	38.0	95	85-115	
Selenium	ug/L	40	42.0	105	85-115	

MATRIX SPIKE SAMPLE: 3028132

Parameter	Units	60384736003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.10	40	41.1	103	70-130	
Arsenic	ug/L	13.7	40	57.0	108	70-130	
Cadmium	ug/L	<0.062	40	46.4	116	70-130	
Chromium	ug/L	0.38J	40	37.0	92	70-130	
Selenium	ug/L	<0.18	40	46.2	115	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3028133 3028134

Parameter	Units	60384736007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.13J	40	40	38.3	37.8	95	94	70-130	1	20	
Arsenic	ug/L	8.6	40	40	48.7	48.5	100	100	70-130	0	20	
Cadmium	ug/L	0.096J	40	40	32.9	32.5	82	81	70-130	1	20	
Chromium	ug/L	1.5	40	40	38.8	38.7	93	93	70-130	0	20	
Selenium	ug/L	0.74J	40	40	31.6	30.4	77	74	70-130	4	20	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch:	648546	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Indianapolis
Associated Lab Samples:	60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022		

METHOD BLANK:	2988247	Matrix:	Water
Associated Lab Samples:	60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<2.0	2.0	2.0	11/04/21 11:48	

LABORATORY CONTROL SAMPLE:	2988248					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	50	50.1	100	90-110	

SAMPLE DUPLICATE:	2988249					
Parameter	Units	60384736001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	265	275	3	20	

SAMPLE DUPLICATE:	2988250					
Parameter	Units	60384736003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	327	334	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 648552

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 60384736023, 60384736024

METHOD BLANK: 2988277

Matrix: Water

Associated Lab Samples: 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<2.0	2.0	2.0	11/04/21 11:32	

LABORATORY CONTROL SAMPLE: 2988278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	48.9	98	90-110	

SAMPLE DUPLICATE: 2988279

Parameter	Units	60384734001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	480	485	1	20	

SAMPLE DUPLICATE: 2988280

Parameter	Units	50301781001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	217	220	1	20	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 753818

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736021, 60384736022

METHOD BLANK: 3017179

Matrix: Water

Associated Lab Samples: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736021, 60384736022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/03/21 10:36	

LABORATORY CONTROL SAMPLE: 3017180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3017181

Parameter	Units	60384734006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	355	356	0	10	

SAMPLE DUPLICATE: 3017182

Parameter	Units	60384736007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	591	583	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 753652

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: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

METHOD BLANK: 3016612

Matrix: Water

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/03/21 08:10	
Fluoride	mg/L	<0.086	0.20	0.086	11/03/21 08:10	
Sulfate	mg/L	<0.42	1.0	0.42	11/03/21 08:10	

METHOD BLANK: 3019321

Matrix: Water

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.45J	1.0	0.39	11/04/21 08:04	
Fluoride	mg/L	<0.086	0.20	0.086	11/04/21 08:04	
Sulfate	mg/L	<0.42	1.0	0.42	11/04/21 08:04	

METHOD BLANK: 3020953

Matrix: Water

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.45J	1.0	0.39	11/05/21 18:11	
Fluoride	mg/L	<0.086	0.20	0.086	11/05/21 18:11	
Sulfate	mg/L	<0.42	1.0	0.42	11/05/21 18:11	

LABORATORY CONTROL SAMPLE: 3016613

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	2.2	89	90-110 L2	
Sulfate	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 3019322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	101	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

LABORATORY CONTROL SAMPLE: 3019322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

LABORATORY CONTROL SAMPLE: 3020954

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	2.7	109	90-110	
Sulfate	mg/L	5	5.2	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3016614 3016615

Parameter	Units	60384777001		3016615		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Chloride	mg/L	180	100	291	292	111	112	80-120	0	15	
Fluoride	mg/L	4.6	50	59.3	59.7	109	110	80-120	1	15	
Sulfate	mg/L	767	100	<8.4	1240	-762	94	80-120		15 M1	

MATRIX SPIKE SAMPLE: 3016616

Parameter	Units	60384736021 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	60.7	50	109	97	80-120	
Fluoride	mg/L	0.36	2.5	3.1	111	80-120	
Sulfate	mg/L	256	100	358	102	80-120	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 754240

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: 60384736001

METHOD BLANK: 3018842

Matrix: Water

Associated Lab Samples: 60384736001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/05/21 08:53	
Fluoride	mg/L	<0.086	0.20	0.086	11/05/21 08:53	
Sulfate	mg/L	<0.42	1.0	0.42	11/05/21 08:53	

METHOD BLANK: 3021937

Matrix: Water

Associated Lab Samples: 60384736001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/08/21 08:38	
Fluoride	mg/L	<0.086	0.20	0.086	11/08/21 08:38	
Sulfate	mg/L	<0.42	1.0	0.42	11/08/21 08:38	

METHOD BLANK: 3023023

Matrix: Water

Associated Lab Samples: 60384736001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/09/21 07:59	
Fluoride	mg/L	<0.086	0.20	0.086	11/09/21 07:59	
Sulfate	mg/L	<0.42	1.0	0.42	11/09/21 07:59	

METHOD BLANK: 3024071

Matrix: Water

Associated Lab Samples: 60384736001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/10/21 10:55	
Fluoride	mg/L	<0.086	0.20	0.086	11/10/21 10:55	
Sulfate	mg/L	<0.42	1.0	0.42	11/10/21 10:55	

LABORATORY CONTROL SAMPLE: 3018843

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	2.5	100	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA
Pace Project No.: 60384736

LABORATORY CONTROL SAMPLE: 3018843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 3021938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

LABORATORY CONTROL SAMPLE: 3023024

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

LABORATORY CONTROL SAMPLE: 3024072

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	2.5	99	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018844 3018845

Parameter	Units	60384688029		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
Chloride	mg/L	185	100	100	100	306	301	117	112	80-120	1	15	
Fluoride	mg/L	0.92J	12.5	12.5	12.5	12.6	12.7	93	95	80-120	1	15	
Sulfate	mg/L	37.1	25	25	25	61.4	61.7	95	96	80-120	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018846 3018847

Parameter	Units	60384734005		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
Chloride	mg/L	3.2	5	5	5	7.6	7.6	88	88	80-120	0	15	
Fluoride	mg/L	0.27	2.5	2.5	2.5	2.6	2.6	93	93	80-120	0	15	
Sulfate	mg/L	28.7	25	25	25	58.7	57.8	120	116	80-120	1	15	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch:	754481	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: 60384736002, 60384736003, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009

METHOD BLANK: 3019839 Matrix: Water
Associated Lab Samples: 60384736002, 60384736003, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/08/21 08:58	
Fluoride	mg/L	<0.086	0.20	0.086	11/08/21 08:58	
Sulfate	mg/L	<0.42	1.0	0.42	11/08/21 08:58	

METHOD BLANK: 3023011 Matrix: Water
Associated Lab Samples: 60384736002, 60384736003, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/09/21 07:59	
Fluoride	mg/L	<0.086	0.20	0.086	11/09/21 07:59	
Sulfate	mg/L	<0.42	1.0	0.42	11/09/21 07:59	

METHOD BLANK: 3023060 Matrix: Water
Associated Lab Samples: 60384736002, 60384736003, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<3.9	10.0	3.9	11/09/21 20:53	
Fluoride	mg/L	<0.86	2.0	0.86	11/09/21 20:53	
Sulfate	mg/L	<4.2	10.0	4.2	11/09/21 20:53	

LABORATORY CONTROL SAMPLE: 3019840

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	2.5	102	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

LABORATORY CONTROL SAMPLE: 3023012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

LABORATORY CONTROL SAMPLE: 3023061

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	47.0	941	90-110	L1

MATRIX SPIKE SAMPLE: 3019843

Parameter	Units	60385056001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	144	50	205	121	80-120	E,M1
Fluoride	mg/L	0.55	2.5	3.2	105	80-120	
Sulfate	mg/L	55.3	50	110	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019858 3019859

Parameter	Units	3019858		3019859		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60384736007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Chloride	mg/L	26.1	25	25	50.3	50.4	97	97	80-120	0	15
Fluoride	mg/L	2.5	2.5	2.5	5.1	5.2	104	107	80-120	2	15
Sulfate	mg/L	98.0	25	25	126	126	110	113	80-120	0	15 E

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 754912

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: 60384736010

METHOD BLANK: 3021296

Matrix: Water

Associated Lab Samples: 60384736010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.53J	1.0	0.39	11/09/21 08:03	
Fluoride	mg/L	<0.086	0.20	0.086	11/09/21 08:03	
Sulfate	mg/L	<0.42	1.0	0.42	11/09/21 08:03	

METHOD BLANK: 3024066

Matrix: Water

Associated Lab Samples: 60384736010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/10/21 10:55	
Fluoride	mg/L	<0.086	0.20	0.086	11/10/21 10:55	
Sulfate	mg/L	<0.42	1.0	0.42	11/10/21 10:55	

LABORATORY CONTROL SAMPLE: 3021297

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	90	90-110	
Fluoride	mg/L	2.5	2.4	98	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 3024067

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	2.5	99	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3021298

3021299

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60385393001 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	2.6	5	5	7.0	7.0	87	88	80-120	1	15		
Fluoride	mg/L	0.27	2.5	2.5	2.5	2.5	89	90	80-120	1	15		
Sulfate	mg/L	61.4	50	50	110	109	98	95	80-120	2	15		

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

MATRIX SPIKE SAMPLE:		3021300					
Parameter	Units	60385308002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	13.4	5	18.6	104	80-120	
Fluoride	mg/L	<0.086	2.5	2.5	101	80-120	
Sulfate	mg/L	2.5	5	7.5	101	80-120	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 755520

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: 60384736004

METHOD BLANK: 3023412

Matrix: Water

Associated Lab Samples: 60384736004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/12/21 11:28	
Fluoride	mg/L	<0.086	0.20	0.086	11/11/21 09:00	
Sulfate	mg/L	<0.42	1.0	0.42	11/12/21 11:28	

METHOD BLANK: 3026738

Matrix: Water

Associated Lab Samples: 60384736004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/13/21 15:27	
Fluoride	mg/L	<0.086	0.20	0.086	11/13/21 15:27	
Sulfate	mg/L	<0.42	1.0	0.42	11/13/21 15:27	

METHOD BLANK: 3027905

Matrix: Water

Associated Lab Samples: 60384736004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/15/21 08:30	
Fluoride	mg/L	<0.086	0.20	0.086	11/15/21 08:30	
Sulfate	mg/L	<0.42	1.0	0.42	11/15/21 08:30	

LABORATORY CONTROL SAMPLE: 3023413

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	99	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 3026739

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	102	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

LABORATORY CONTROL SAMPLE: 3027906

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	5	5.2	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3023414 3023415

Parameter	Units	60385430005		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chloride	mg/L	1.4	5	5	5.7	5.7	86	87	80-120	1	15		
Fluoride	mg/L	0.20	2.5	2.5	2.5	2.5	92	93	80-120	1	15		
Sulfate	mg/L	47.2	50	50	96.3	93.4	98	92	80-120	3	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3023417 3023418

Parameter	Units	60385405002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chloride	mg/L	58.7	50	50	96.6	96.1	93	92	80-120	1	15		
Fluoride	mg/L	0.16J	2.5	2.5	2.5	2.4	93	91	80-120	2	15		
Sulfate	mg/L	350	250	250	608	609	103	103	80-120	0	15		

SAMPLE DUPLICATE: 3023416

Parameter	Units	60385430005		Dup Result	RPD	Max RPD	Qualifiers
		Result	Result				
Chloride	mg/L	1.4	1.4	1.4	0	15	
Fluoride	mg/L	0.20	0.20J	0.20J		15	
Sulfate	mg/L	47.2	46.7	46.7	1	15	

SAMPLE DUPLICATE: 3023419

Parameter	Units	60385405002		Dup Result	RPD	Max RPD	Qualifiers
		Result	Result				
Chloride	mg/L	58.7	48.4	48.4	3	15	
Fluoride	mg/L	0.16J	0.18J	0.18J		15	
Sulfate	mg/L	350	353	353	1	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P05S **Lab ID: 60384736001** Collected: 10/28/21 12:40 Received: 10/30/21 04:25 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	0.238 ± 0.363 (0.624) C:NA T:103%	pCi/L	11/30/21 11:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.173 ± 0.419 (0.930) C:69% T:90%	pCi/L	11/24/21 14:25	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P10S **Lab ID: 60384736002** Collected: 10/27/21 12:54 Received: 10/30/21 04:25 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	0.161 ± 0.315 (0.576) C:NA T:94%	pCi/L	11/30/21 11:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.517 ± 0.422 (0.849) C:71% T:90%	pCi/L	11/24/21 14:25	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P19S **Lab ID: 60384736003** Collected: 10/27/21 12:30 Received: 10/30/21 04:25 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	0.260 ± 0.339 (0.559) C:NA T:94%	pCi/L	11/30/21 11:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.848 ± 0.489 (0.914) C:70% T:90%	pCi/L	11/24/21 14:25	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P-19I **Lab ID: 60384736004** Collected: 10/27/21 13:40 Received: 10/30/21 04:25 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	0.112 ± 0.256 (0.412) C:NA T:95%	pCi/L	11/30/21 11:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.785 ± 0.572 (1.12) C:64% T:73%	pCi/L	11/24/21 14:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P19D **Lab ID: 60384736005** Collected: 10/27/21 12:18 Received: 10/30/21 04:25 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	0.222 ± 0.407 (0.726) C:NA T:96%	pCi/L	11/30/21 11:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.502 ± 0.411 (0.828) C:76% T:85%	pCi/L	11/24/21 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P22S **Lab ID: 60384736006** Collected: 10/27/21 10:40 Received: 10/30/21 04:25 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	0.306 ± 0.318 (0.474) C:NA T:98%	pCi/L	11/30/21 11:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.385 ± 0.362 (0.744) C:74% T:93%	pCi/L	11/24/21 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P22D **Lab ID: 60384736007** Collected: 10/27/21 10:05 Received: 10/30/21 04:25 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	0.000 ± 0.244 (0.529) C:NA T:89%	pCi/L	11/30/21 11:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.552 ± 0.394 (0.763) C:71% T:84%	pCi/L	11/24/21 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P29S **Lab ID: 60384736008** Collected: 10/29/21 13:15 Received: 10/30/21 04:25 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	0.341 ± 0.354 (0.528) C:NA T:91%	pCi/L	11/30/21 11:43	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.382 ± 0.377 (0.775) C:72% T:83%	pCi/L	11/24/21 11:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P30S **Lab ID: 60384736009** Collected: 10/29/21 11:10 Received: 10/30/21 04:25 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	-0.0498 ± 0.324 (0.703) C:NA T:97%	pCi/L	11/30/21 11:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0861 ± 0.334 (0.757) C:73% T:87%	pCi/L	11/24/21 11:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P31S **Lab ID: 60384736010** Collected: 10/28/21 11:45 Received: 10/30/21 04:25 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	0.430 ± 0.342 (0.444) C:NA T:103%	pCi/L	11/30/21 11:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.57 ± 0.548 (0.782) C:68% T:89%	pCi/L	11/24/21 11:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-MS-1 **Lab ID: 60384736011** Collected: 10/27/21 10:05 Received: 10/30/21 04:25 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	113.92 %REC ± NA (NA) C:NA T:NA%	pCi/L	11/30/21 11:43	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	111.61 %REC ± NA (NA) C:NA T:NA	pCi/L	11/24/21 14:37	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	83.97 %REC 30.27 RPD ± NA (NA) C:NA T:NA%	pCi/L	11/30/21 11:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	106.67 %REC 4.52 RPD ± NA (NA) C:NA T:NA	pCi/L	11/24/21 11:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P16S **Lab ID: 60384736013** Collected: 10/26/21 11:51 Received: 10/27/21 04:05 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	0.000 ± 0.345 (0.773) C:NA T:80%	pCi/L	12/21/21 12:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.386 ± 0.380 (0.777) C:70% T:86%	pCi/L	12/22/21 14:13	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P17S **Lab ID: 60384736014** Collected: 10/26/21 13:30 Received: 10/27/21 04:05 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	0.209 ± 0.453 (0.836) C:NA T:90%	pCi/L	12/21/21 12:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.479 ± 0.400 (0.796) C:71% T:84%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P171 **Lab ID: 60384736015** Collected: 10/26/21 13:25 Received: 10/27/21 04:05 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	0.115 ± 1.13 (1.83) C:NA T:25%	pCi/L	12/21/21 12:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.348 ± 0.429 (0.905) C:68% T:81%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P17D **Lab ID: 60384736016** Collected: 10/26/21 14:50 Received: 10/27/21 04:05 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	0.216 ± 0.425 (0.776) C:NA T:84%	pCi/L	12/21/21 12:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.519 ± 0.438 (0.877) C:67% T:85%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P21S **Lab ID: 60384736017** Collected: 10/26/21 15:15 Received: 10/27/21 04:05 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	0.185 ± 0.402 (0.742) C:NA T:91%	pCi/L	12/21/21 12:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.650 ± 0.462 (0.899) C:71% T:84%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P211 **Lab ID: 60384736018** Collected: 10/26/21 13:35 Received: 10/27/21 04:05 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	0.0641 ± 0.547 (1.07) C:NA T:88%	pCi/L	12/21/21 12:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0373 ± 0.439 (1.02) C:65% T:83%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P21D **Lab ID: 60384736019** Collected: 10/26/21 12:40 Received: 10/27/21 04:05 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	0.405 ± 0.327 (0.183) C:NA T:89%	pCi/L	12/21/21 12:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.605 ± 0.425 (0.818) C:69% T:88%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P29D **Lab ID: 60384736020** Collected: 10/25/21 14:51 Received: 10/27/21 04:05 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	-0.118 ± 0.433 (0.935) C:NA T:94%	pCi/L	12/21/21 12:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.333 ± 0.384 (0.807) C:71% T:92%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: R-CA-DUP-1 Lab ID: 60384736021 Collected: 10/25/21 00:00 Received: 10/27/21 04:05 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.144 ± 0.445 (0.862) C:NA T:84%	pCi/L	12/21/21 12:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.541 ± 0.476 (0.958) C:66% T:76%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-DUP-2 **Lab ID: 60384736022** Collected: 10/25/21 00:00 Received: 10/27/21 04:05 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	-0.108 ± 0.300 (0.708) C:NA T:105%	pCi/L	12/21/21 12:50	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.00503 ± 0.347 (0.809) C:65% T:97%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-FB-1 **Lab ID: 60384736023** Collected: 10/26/21 12:15 Received: 10/27/21 04:05 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	-0.121 ± 0.412 (0.911) C:NA T:93%	pCi/L	12/21/21 12:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.526 ± 0.389 (0.758) C:70% T:91%	pCi/L	12/22/21 14:15	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-FB-2 **Lab ID: 60384736024** Collected: 10/26/21 13:00 Received: 10/27/21 04:05 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	0.0574 ± 0.262 (0.423) C:NA T:98%	pCi/L	12/21/21 12:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.680 ± 0.468 (0.901) C:67% T:87%	pCi/L	12/22/21 14:15	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 472871

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: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736011, 60384736012

METHOD BLANK: 2283219

Matrix: Water

Associated Lab Samples: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736011, 60384736012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.116 ± 0.332 (0.616) C:NA T:98%	pCi/L	11/30/21 11:26	

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

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 475843

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: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

METHOD BLANK: 2298507

Matrix: Water

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.659 ± 0.404 (0.737) C:69% T:86%	pCi/L	12/22/21 14:14	

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.

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 472872

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: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736011, 60384736012

METHOD BLANK: 2283220

Matrix: Water

Associated Lab Samples: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736011, 60384736012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.627 ± 0.401 (0.765) C:70% T:92%	pCi/L	11/24/21 11:20	

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.

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QUALIFIERS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

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

B Analyte was detected in the associated method blank.

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

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.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60384736001	R-P05S	EPA 200.7	756724	EPA 200.7	756851
60384736002	R-P10S	EPA 200.7	756724	EPA 200.7	756851
60384736003	R-P19S	EPA 200.7	756724	EPA 200.7	756851
60384736004	R-P-19I	EPA 200.7	756724	EPA 200.7	756851
60384736005	R-P19D	EPA 200.7	756724	EPA 200.7	756851
60384736006	R-P22S	EPA 200.7	756724	EPA 200.7	756851
60384736007	R-P22D	EPA 200.7	756724	EPA 200.7	756851
60384736008	R-P29S	EPA 200.7	756724	EPA 200.7	756851
60384736009	R-P30S	EPA 200.7	756724	EPA 200.7	756851
60384736010	R-P31S	EPA 200.7	756724	EPA 200.7	756851
60384736013	R-P16S	EPA 200.7	754494	EPA 200.7	754594
60384736014	R-P17S	EPA 200.7	754494	EPA 200.7	754594
60384736015	R-P17I	EPA 200.7	754494	EPA 200.7	754594
60384736016	R-P17D	EPA 200.7	754494	EPA 200.7	754594
60384736017	R-P21S	EPA 200.7	754494	EPA 200.7	754594
60384736018	R-P21I	EPA 200.7	754494	EPA 200.7	754594
60384736019	R-P21D	EPA 200.7	754494	EPA 200.7	754594
60384736020	R-P29D	EPA 200.7	754494	EPA 200.7	754594
60384736021	R-CA-DUP-1	EPA 200.7	754494	EPA 200.7	754594
60384736022	R-CA-DUP-2	EPA 200.7	754494	EPA 200.7	754594
60384736023	R-CA-FB-1	EPA 200.7	754494	EPA 200.7	754594
60384736024	R-CA-FB-2	EPA 200.7	754494	EPA 200.7	754594
60384736001	R-P05S	EPA 200.8	756725	EPA 200.8	756852
60384736002	R-P10S	EPA 200.8	756725	EPA 200.8	756852
60384736003	R-P19S	EPA 200.8	756725	EPA 200.8	756852
60384736004	R-P-19I	EPA 200.8	756725	EPA 200.8	756852
60384736005	R-P19D	EPA 200.8	756725	EPA 200.8	756852
60384736006	R-P22S	EPA 200.8	756725	EPA 200.8	756852
60384736007	R-P22D	EPA 200.8	756725	EPA 200.8	756852
60384736008	R-P29S	EPA 200.8	756725	EPA 200.8	756852
60384736009	R-P30S	EPA 200.8	756725	EPA 200.8	756852
60384736010	R-P31S	EPA 200.8	756725	EPA 200.8	756852
60384736013	R-P16S	EPA 200.8	754495	EPA 200.8	754593
60384736014	R-P17S	EPA 200.8	754495	EPA 200.8	754593
60384736015	R-P17I	EPA 200.8	754495	EPA 200.8	754593
60384736016	R-P17D	EPA 200.8	754495	EPA 200.8	754593
60384736017	R-P21S	EPA 200.8	754495	EPA 200.8	754593
60384736018	R-P21I	EPA 200.8	754495	EPA 200.8	754593
60384736019	R-P21D	EPA 200.8	754495	EPA 200.8	754593
60384736020	R-P29D	EPA 200.8	754495	EPA 200.8	754593
60384736021	R-CA-DUP-1	EPA 200.8	754495	EPA 200.8	754593
60384736022	R-CA-DUP-2	EPA 200.8	754495	EPA 200.8	754593
60384736023	R-CA-FB-1	EPA 200.8	754495	EPA 200.8	754593
60384736024	R-CA-FB-2	EPA 200.8	754495	EPA 200.8	754593
60384736001	R-P05S	EPA 903.1	472871		
60384736002	R-P10S	EPA 903.1	472871		
60384736003	R-P19S	EPA 903.1	472871		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60384736004	R-P-19I	EPA 903.1	472871		
60384736005	R-P19D	EPA 903.1	472871		
60384736006	R-P22S	EPA 903.1	472871		
60384736007	R-P22D	EPA 903.1	472871		
60384736008	R-P29S	EPA 903.1	472871		
60384736009	R-P30S	EPA 903.1	472871		
60384736010	R-P31S	EPA 903.1	472871		
60384736011	R-CA-MS-1	EPA 903.1	472871		
60384736012	R-CA-MSD-1	EPA 903.1	472871		
60384736013	R-P16S	EPA 903.1	475842		
60384736014	R-P17S	EPA 903.1	475842		
60384736015	R-P17I	EPA 903.1	475842		
60384736016	R-P17D	EPA 903.1	475842		
60384736017	R-P21S	EPA 903.1	475842		
60384736018	R-P21I	EPA 903.1	475842		
60384736019	R-P21D	EPA 903.1	475842		
60384736020	R-P29D	EPA 903.1	475842		
60384736021	R-CA-DUP-1	EPA 903.1	475842		
60384736022	R-CA-DUP-2	EPA 903.1	475842		
60384736023	R-CA-FB-1	EPA 903.1	475842		
60384736024	R-CA-FB-2	EPA 903.1	475842		
60384736001	R-P05S	EPA 904.0	472872		
60384736002	R-P10S	EPA 904.0	472872		
60384736003	R-P19S	EPA 904.0	472872		
60384736004	R-P-19I	EPA 904.0	472872		
60384736005	R-P19D	EPA 904.0	472872		
60384736006	R-P22S	EPA 904.0	472872		
60384736007	R-P22D	EPA 904.0	472872		
60384736008	R-P29S	EPA 904.0	472872		
60384736009	R-P30S	EPA 904.0	472872		
60384736010	R-P31S	EPA 904.0	472872		
60384736011	R-CA-MS-1	EPA 904.0	472872		
60384736012	R-CA-MSD-1	EPA 904.0	472872		
60384736013	R-P16S	EPA 904.0	475843		
60384736014	R-P17S	EPA 904.0	475843		
60384736015	R-P17I	EPA 904.0	475843		
60384736016	R-P17D	EPA 904.0	475843		
60384736017	R-P21S	EPA 904.0	475843		
60384736018	R-P21I	EPA 904.0	475843		
60384736019	R-P21D	EPA 904.0	475843		
60384736020	R-P29D	EPA 904.0	475843		
60384736021	R-CA-DUP-1	EPA 904.0	475843		
60384736022	R-CA-DUP-2	EPA 904.0	475843		
60384736023	R-CA-FB-1	EPA 904.0	475843		
60384736024	R-CA-FB-2	EPA 904.0	475843		
60384736001	R-P05S	SM 2320B	648546		
60384736002	R-P10S	SM 2320B	648546		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60384736003	R-P19S	SM 2320B	648546		
60384736004	R-P-19I	SM 2320B	648546		
60384736005	R-P19D	SM 2320B	648546		
60384736006	R-P22S	SM 2320B	648546		
60384736007	R-P22D	SM 2320B	648546		
60384736008	R-P29S	SM 2320B	648546		
60384736009	R-P30S	SM 2320B	648546		
60384736010	R-P31S	SM 2320B	648546		
60384736013	R-P16S	SM 2320B	648546		
60384736014	R-P17S	SM 2320B	648546		
60384736015	R-P17I	SM 2320B	648546		
60384736016	R-P17D	SM 2320B	648546		
60384736017	R-P21S	SM 2320B	648546		
60384736018	R-P21I	SM 2320B	648546		
60384736019	R-P21D	SM 2320B	648546		
60384736020	R-P29D	SM 2320B	648546		
60384736021	R-CA-DUP-1	SM 2320B	648546		
60384736022	R-CA-DUP-2	SM 2320B	648546		
60384736023	R-CA-FB-1	SM 2320B	648552		
60384736024	R-CA-FB-2	SM 2320B	648552		
60384736001	R-P05S	SM 2540C	753818		
60384736002	R-P10S	SM 2540C	753818		
60384736003	R-P19S	SM 2540C	753818		
60384736004	R-P-19I	SM 2540C	753818		
60384736005	R-P19D	SM 2540C	753818		
60384736006	R-P22S	SM 2540C	753818		
60384736007	R-P22D	SM 2540C	753818		
60384736008	R-P29S	SM 2540C	753818		
60384736009	R-P30S	SM 2540C	753818		
60384736010	R-P31S	SM 2540C	753818		
60384736013	R-P16S	SM 2540C	753551		
60384736014	R-P17S	SM 2540C	753551		
60384736015	R-P17I	SM 2540C	753551		
60384736016	R-P17D	SM 2540C	753551		
60384736017	R-P21S	SM 2540C	753551		
60384736018	R-P21I	SM 2540C	753551		
60384736019	R-P21D	SM 2540C	753551		
60384736020	R-P29D	SM 2540C	753551		
60384736021	R-CA-DUP-1	SM 2540C	753818		
60384736022	R-CA-DUP-2	SM 2540C	753818		
60384736023	R-CA-FB-1	SM 2540C	753551		
60384736024	R-CA-FB-2	SM 2540C	753551		
60384736001	R-P05S	EPA 300.0	754240		
60384736002	R-P10S	EPA 300.0	754481		
60384736003	R-P19S	EPA 300.0	754481		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60384736004	R-P-19I	EPA 300.0	755520		
60384736005	R-P19D	EPA 300.0	754481		
60384736006	R-P22S	EPA 300.0	754481		
60384736007	R-P22D	EPA 300.0	754481		
60384736008	R-P29S	EPA 300.0	754481		
60384736009	R-P30S	EPA 300.0	754481		
60384736010	R-P31S	EPA 300.0	754912		
60384736013	R-P16S	EPA 300.0	753652		
60384736014	R-P17S	EPA 300.0	753652		
60384736015	R-P17I	EPA 300.0	753652		
60384736016	R-P17D	EPA 300.0	753652		
60384736017	R-P21S	EPA 300.0	753652		
60384736018	R-P21I	EPA 300.0	753652		
60384736019	R-P21D	EPA 300.0	753652		
60384736020	R-P29D	EPA 300.0	753652		
60384736021	R-CA-DUP-1	EPA 300.0	753652		
60384736022	R-CA-DUP-2	EPA 300.0	753652		
60384736023	R-CA-FB-1	EPA 300.0	753652		
60384736024	R-CA-FB-2	EPA 300.0	753652		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60384736



Client Name: Colder

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-286 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 3.1 Corr. Factor -0.2 Corrected 2.9

Date and initials of person examining contents: 10/30/21 CC

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	All coolers out of temp held only Radion
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	# 10/30/21
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	Received 2 BPA, 1 BPA, 1 BPA for Ameron RCPA
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sample ID R-MSD-1 taken 10/27/21
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 ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# <u>603222</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: _____

REVIEWED
By jchurch at 7:20 pm, 10/30/21

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: 2 of 2

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Golder Associates	Address: 13515 Barrett Parkway Drive, Ste 260 Ballwin, MO 63021	Report To: Jeffrey Ingram	Copy To: Ryan Feldmann / Eric Schneider	Attention:	Company Name:
Phone: 636-724-9191	Email To: Jeffrey_Ingram@golder.com	Purchase Order No.:	Project Name: Ameren RCPA-CA	Face Quote Reference:	Address:
Requested Due Date/TAT: Standard	Project Number: 153-140603.0002A (COC #6)	Project Name: Ameren RCPA-CA	Face Project Manager: Jamie Church	Face Profile #:	State: MO

ITEM #	Valid Matrix Codes MATRIX CODE GROUND WATER DW WASTE WATER WW PRODUCT P SOILSOLID S OIL OL REF RP COR CT TS TS	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Analysis Test ↑	Requested Analysis Filtered (Y/N)	Temp in °C	Received on	Custody Sealed Cooler	Samples Intact
			COMPOSITE START	COMPOSITE END/GRAB								
1	R-P22S		DATE: 10-27-20	TIME: 1040	4	1	HNO ₃	Y				
2	R-P22D		DATE: 10-27-20	TIME: 1005	1	1	H ₂ SO ₄	Y				
3	R-P29S		DATE: 10-27-20	TIME: 1315	4	1	Unpreserved	Y				
4	R-P29D		DATE: 10-27-20	TIME: 1145	4	1	H ₂ SO ₄	Y				
5	R-P30S		DATE: 10-27-20	TIME: 1240	4	1	HNO ₃	Y				
6	R-P31S		DATE: 10-27-20	TIME: 1145	4	1	HNO ₃	Y				
7	R-CA-DUP-1						HCl	Y				
8	R-CA-DUP-2						NaOH	Y				
9	R-CA-FB-1						Na ₂ S ₂ O ₃	Y				
10	R-CA-FB-2						Methanol	Y				
11	R-CA-MS-1		DATE: 10-27-20	TIME: 1005	4	1	Other	Y				
12	R-CA-MSD-1		DATE: 10-27-20	TIME: 1005	4	1	Other	Y				

RELINQUISHED BY / AFFILIATION JM/Golder	DATE 10/27/20	TIME 1530	ACCEPTED BY / AFFILIATION Clarke Pace	DATE 10/29/20	TIME 0831
ADDITIONAL COMMENTS			SAMPLE CONDITIONS		
*EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B			Received on 10/29/20 at 0831		
**EPA 200.7: Ba, Pb, Li, Mo			Custody Sealed Cooler Y		
***EPA 200.8: Sb, As, Cd, Cr, Se			Samples Intact Y		

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER: Sierra Shields	DATE Signed (MM/DD/YYYY): 10/29/20
SIGNATURE OF SAMPLER: <i>[Signature]</i>	



Sample Condition Upon Receipt
ESI Tech Spec Client

WO#: 60384736



60384736

Client Name: Goldner

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 3.1, 2.9 Corr. Factor -0.2 Corrected 3.3, 3.1

Date and initials of person examining contents: 10/1/21
Jan KAS

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 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>Water</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , 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	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

REVIEWED
By jchurch at 7:33 pm, 11/1/21

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.

Start: <u>155°</u>	Start:
End: <u>1005</u>	End:
Temp: <u>4.8</u>	Temp:



GOLDER
MEMBER OF WSP

MEMORANDUM

DATE January 18, 2022

Project No. 153140603

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA-CA – CORRECTIVE ACTION SAMPLING OCTOBER 2021 - DATA PACKAGE 60384736

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 a compound was analyzed outside of hold time, the results were qualified as estimates (J for 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 duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates biased high, and J- for estimates biased low).
- When laboratory control sample (LCS) criterion was not met, the associated sample result was qualified as an estimate (J).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
 Project Name: Ameren - RIEC - RCPA-CA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140603
 Validation Date: 1/18/2022

Laboratory: Pace Analytical

SDG #: 60384736

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions); EPA 903.1/904.0 (Radium 226/228)

Matrix: Air Soil/Sed. Water Waste

Sample Names R-P05S, R-P10S, R-P19S, R-P-19I, R-P19D, R-P22S, R-P22D, R-P29S, R-P30S, R-P31S, R-CA-MS-1, R-CA-MSD-1, R-P16S, R-P17S, R-P17I, R-P17D, R-P21S, R-P21I, R-P21D, R-P29D, R-CA-DUP-1, R-CA-DUP-2, R-CA-FB-1, 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>10/26/2021 - 10/29/2021</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>SSS/ETF/BTT</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>See Notes</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 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</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"/>	See Notes
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD: 3% [20%]

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:

The Sample Condition Upon Receipt form indicated that coolers received outside of temperature only contained radium samples, no qualification necessary.

TDS was analyzed outside of hold time in samples R-P29D, R-CA-DUP-1, R-CA-DUP-2. Results qualified as estimates.

Calcium, lithium, chloride and sulfate analyzed at a dilution in multiple samples, no qualification required.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Blanks:

3028124: Barium (2.0J). Associated with samples -001 through -10. Results <10x blank but >RL qualified as estimates.

Results >RL and 10x blank not qualified.

3019321/3020953: Chloride (0.45J/0.45J). Associated with samples -013 through -024. Results <10x blank but >RL qualified as estimates.

Results <RL were reported at the RL and qualified as ND. Results >RL and 10x blank not qualified.

3021296: Chloride (0.53J). Associated with sample -010. Result <10x blank but >RL qualified as estimate.

R-CA-FB-1 @ R-P16S: Boron (12.3J), chromium (0.31J), chloride (0.49J). Results >RL and 10x blank not qualified. Results <RL were reported at the RL and qualified as ND. Results <10x blank but >RL qualified as estimate.

R-CA-FB-2 @ R-P21D: Chromium (0.31J), chloride (0.50J). Results <RL were reported at the RL and qualified as ND.

Results >RL and 10x blank not qualified.

Laboratory Control Sample

3016613: LCS % recovery low (89%) for fluoride. Associated with samples -013 through -024. Results generally consistent with historical results, no qualification necessary.

3023061: LCS % recovery high for sulfate. Associated with samples -002, -003, -005 through -009. Results generally consistent with historical results, except for R-P-19D, which was qualified as an estimate.

Duplicates:

R-CA-DUP-1 @ R-P17S: RPD for cadmium (28.6%) exceeds RPD control limit (20%); Sulfate ND in sample, detected in duplicate.

R-CA-DUP-2 @ R-P21I: RPD for sulfate (171.2%) exceeds RPD control limit (20%).

The laboratory analyzed sample duplicates for alkalinity, TDS, and anions.

MS/MSD:

3019881/3019882: MS % recovery low and MSD % recovery high for calcium. Associated with sample 60384736013.

3019881/3019882: MS % recovery low for magnesium. Associated with sample 60384736013. Only 1 QC indicator out, no qualification necessary.

3028129: MS % recovery low for calcium, sodium. Associated with sample 60384736002. Only 1 QC indicator out, no qualification necessary.

3028126/3028127: MS/MSD % recovery low for sodium. Associated with sample 60384736007.

3016614/3016615: MS % recovery low for sulfate. MS performed on unrelated sample, no qualification necessary.

3019843: MS % recovery high for chloride. MS performed on unrelated sample, no qualification necessary.

APPENDIX B

**October 2020 Assessment
Monitoring Statistical Evaluation**

TECHNICAL MEMORANDUM

DATE February 22, 2021

Project No. 153-140602

TO Bill Kutosky
Ameren Missouri

CC Susan Knowles, Craig Giesmann, Charlie Henderson

FROM Jeffrey Ingram, Sean Paulsen and Mark Haddock

EMAIL JIngram@Golder.com

ASSESSMENT MONITORING STATISTICAL EVALUATION FOR THE 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 2020 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 outliers were removed prior to the calculation of confidence limits:

- Arsenic
 - MW-6 at 24.2 micrograms per liter (µg/L) on 4/09/2020; Result was statistically higher than other values at the the same well. The high result was not confirmed during subsequent sampling events.
- Fluoride
 - MW-7/MW-7(R) at 0.095 J µg/L on 1/09/2020; Result was statistically lower than other values at the the same well. The low result was not confirmed during subsequent sampling events.

Additionally, an analysis of the outliers removed to date was completed and statistical outliers that were previously removed were added back into the dataset, as they are no longer outliers. The following statistical outliers were added back into the dataset prior to the calculation of confidence limits:

- Arsenic
 - MW-7/MW-7(R) at 34.5 µg/L on 3/10/2016 was originally removed as an outlier for the November 2018 event statistical analysis because the value was statistically lower than the other results at the same well. Additional sampling results have displayed a larger spatial variability in this well and it is no longer a statistical outlier.

- Barium
 - MW-1 at 33.0 µg/L on 3/10/2016 was originally removed as an outlier for the November 2018 event statistical analysis because the value was statistically higher than the other results at the same well. Additional sampling results have displayed a larger spatial variability in this well and it is no longer a statistical outlier.
- Radium (226 + 228)
 - MW-7/MW-7(R) at 1.426 picocuries per liter (pCi/L) on 11/2/2018 was originally removed as an outlier for the November 2019 event statistical analysis because the value was statistically higher than the other results at the same well. Additional sampling results have displayed a larger spatial variability in this well and it is no longer a statistical outlier.

Molybdenum at MW-7/MW-7(R), which was identified as an SSL in the November 2018 sampling event, is no longer an SSL as the lower confidence limit is at 95.2 µg/L, and no statistically significant trend is observed. The other SSLs were unchanged in the October 2020 sampling event. A summary of SSLs for the October 2020 sampling event is as follows:

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

Golder 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, R.G.
Senior Project Geologist



Sean Paulsen,
Associate, Senior Consultant

JSI/SCP/MNH

Enclosures:

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 ⁶
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	30	30
Barium	µg/L	2000	2000	564.3
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	5.422
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.2414
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	2.865
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. Spring 2012. <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 August 2019 from monitoring wells MW-B1 and MW-B2.

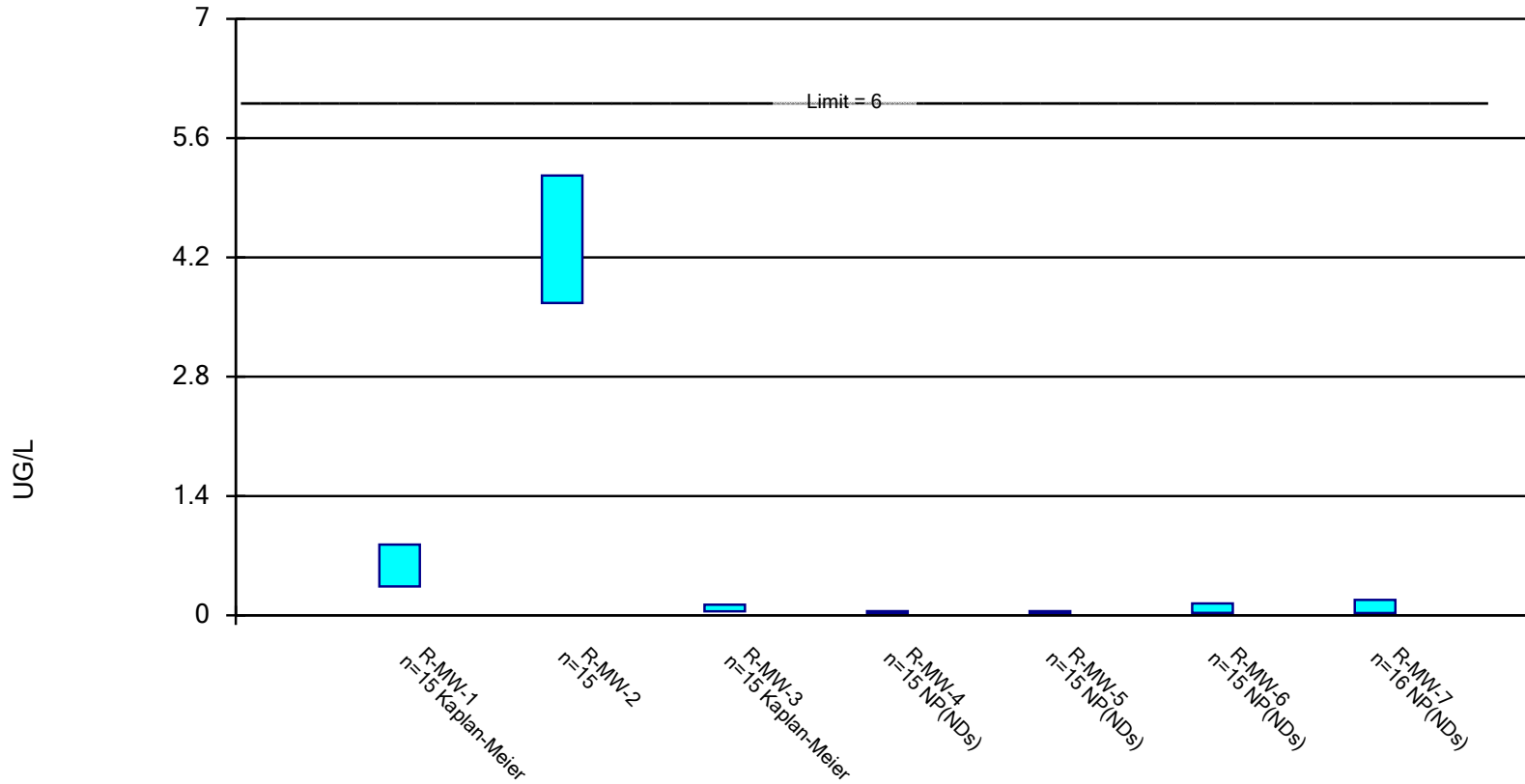
Prepared by: JSI
Checked by: EMS
Reviewed by: SCP

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.

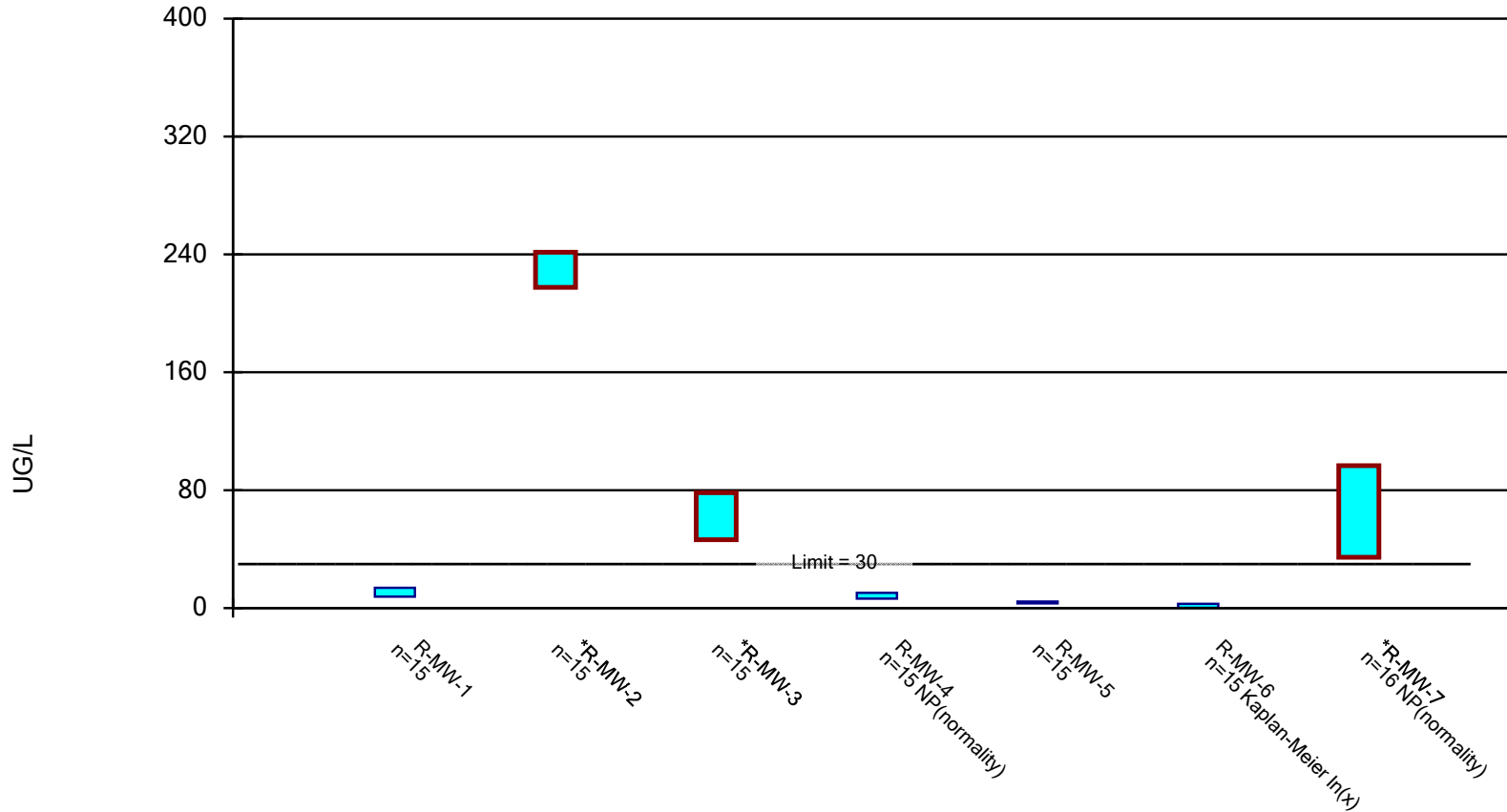


Constituent: ANTIMONY, TOTAL Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

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.

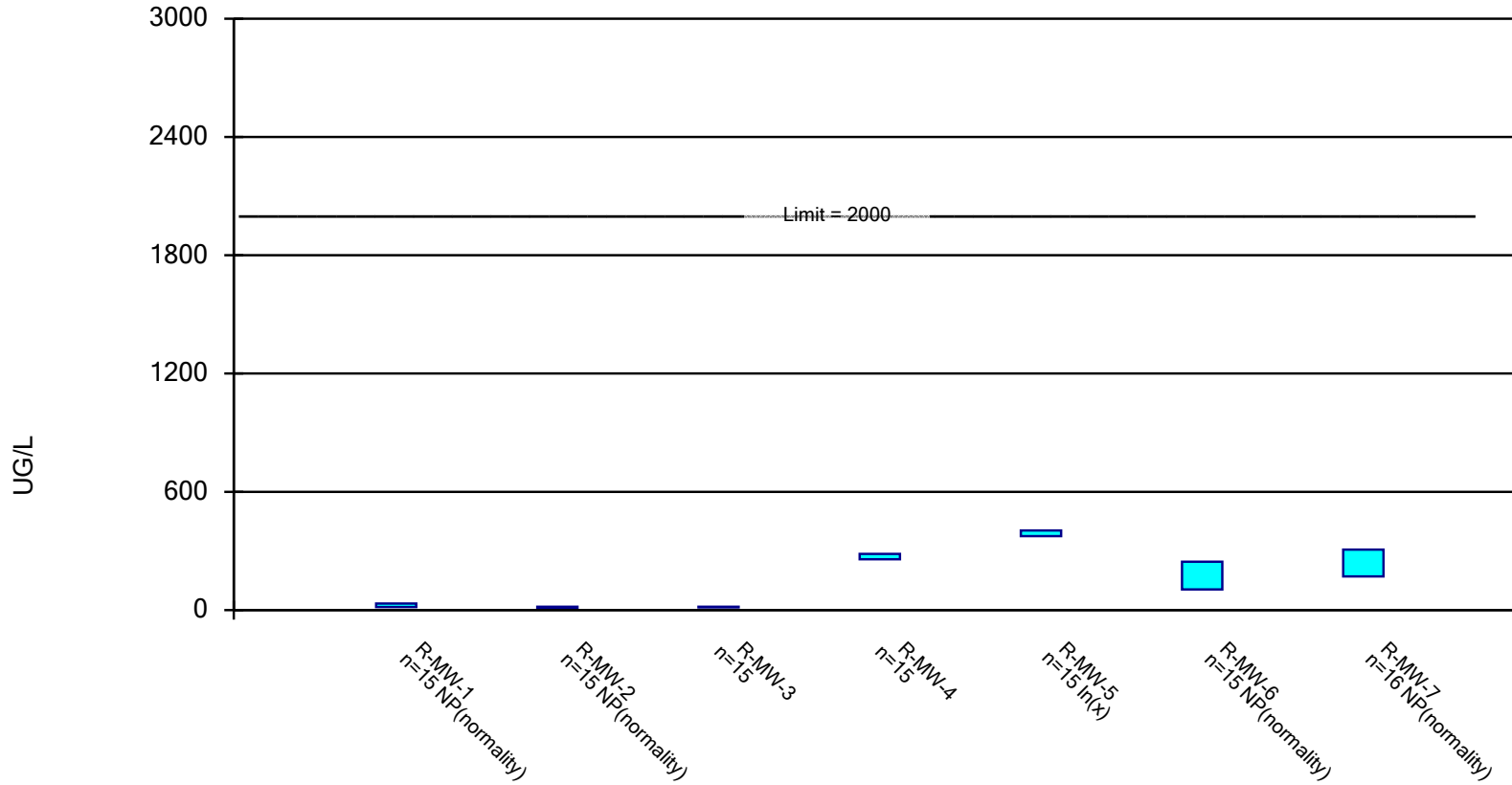


Constituent: ARSENIC, TOTAL Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

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.

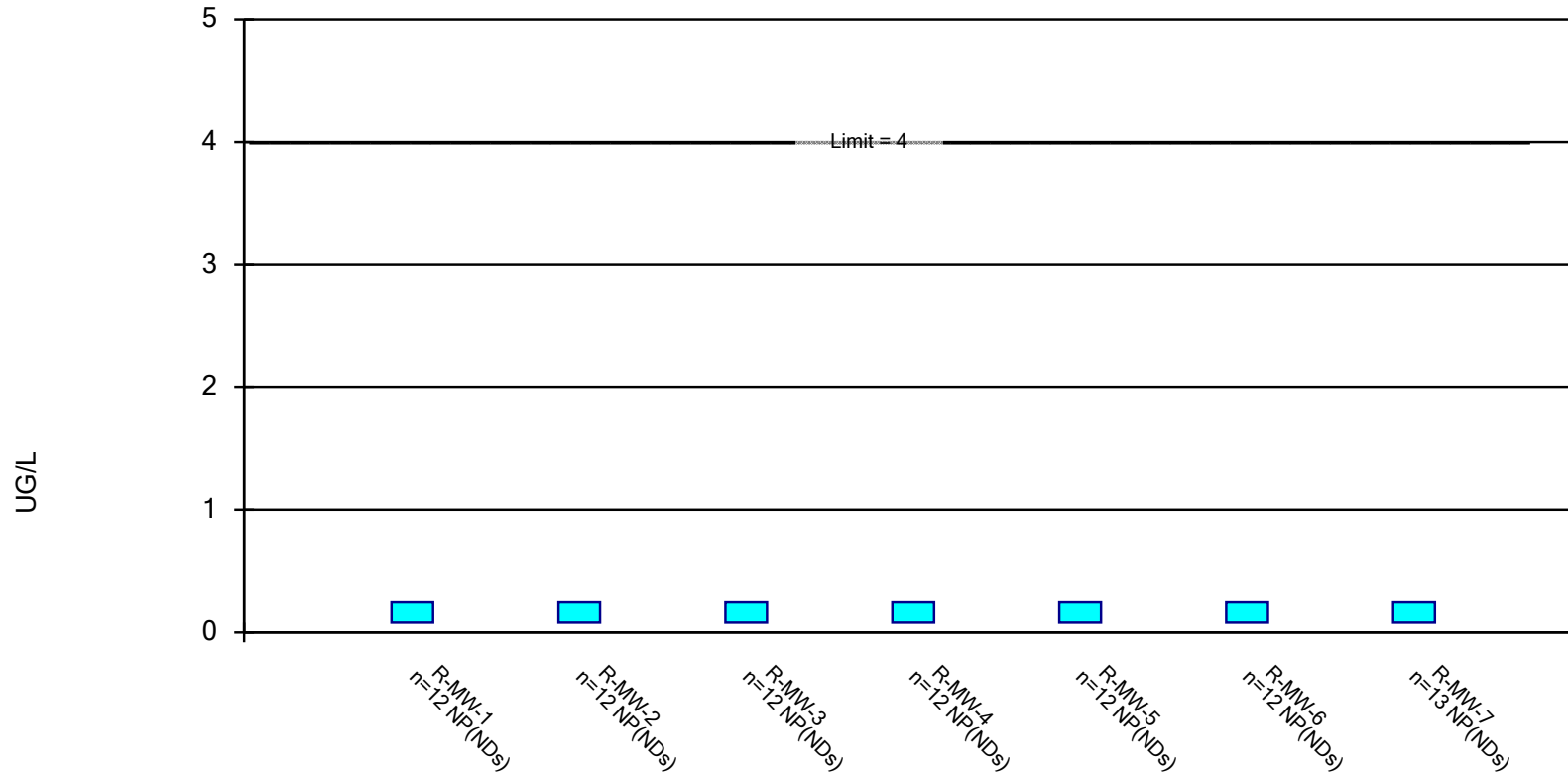


Constituent: BARIUM, TOTAL Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

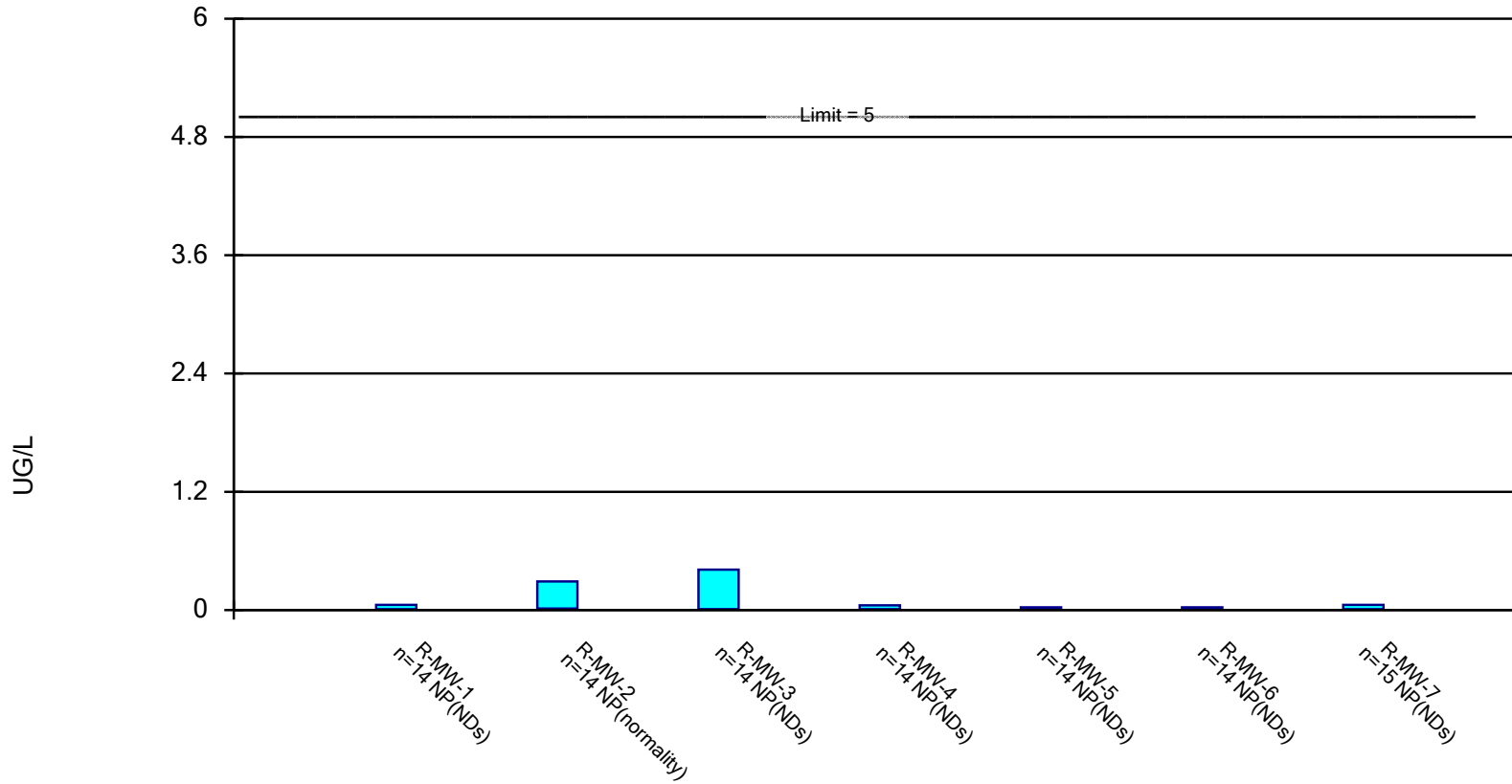


Constituent: BERYLLIUM, TOTAL Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

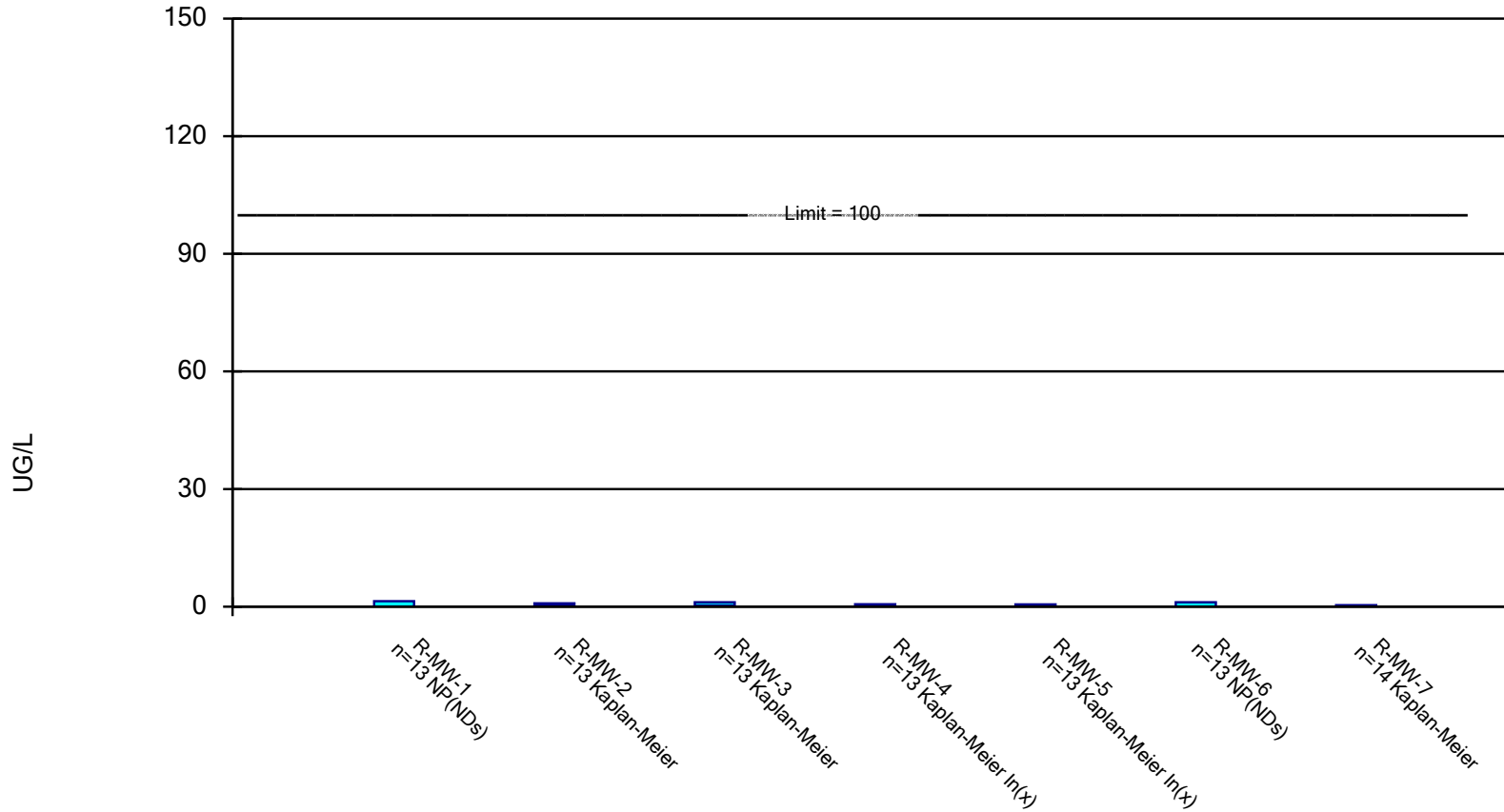


Constituent: CADMIUM, TOTAL Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

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.

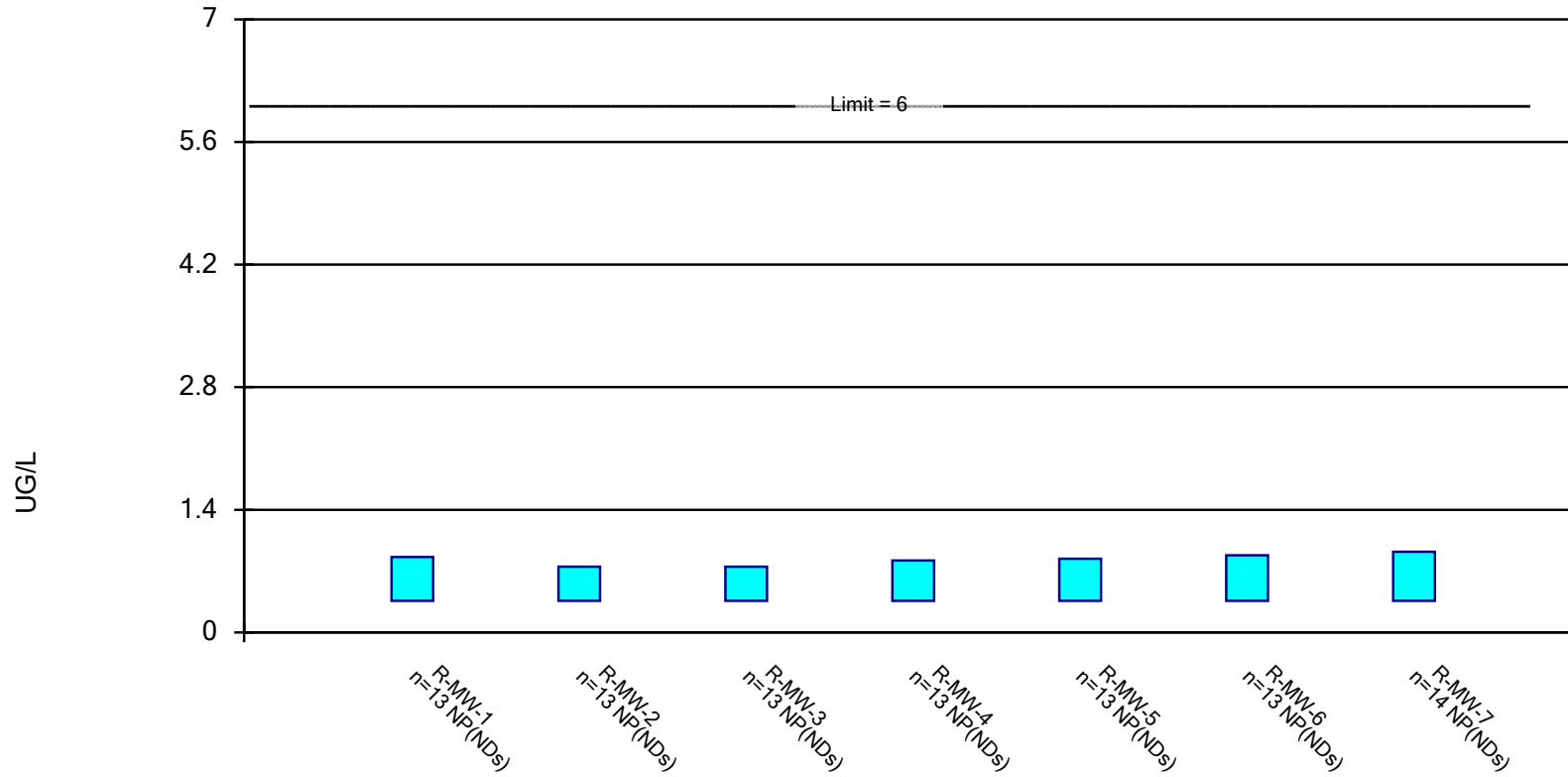


Constituent: CHROMIUM, TOTAL Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

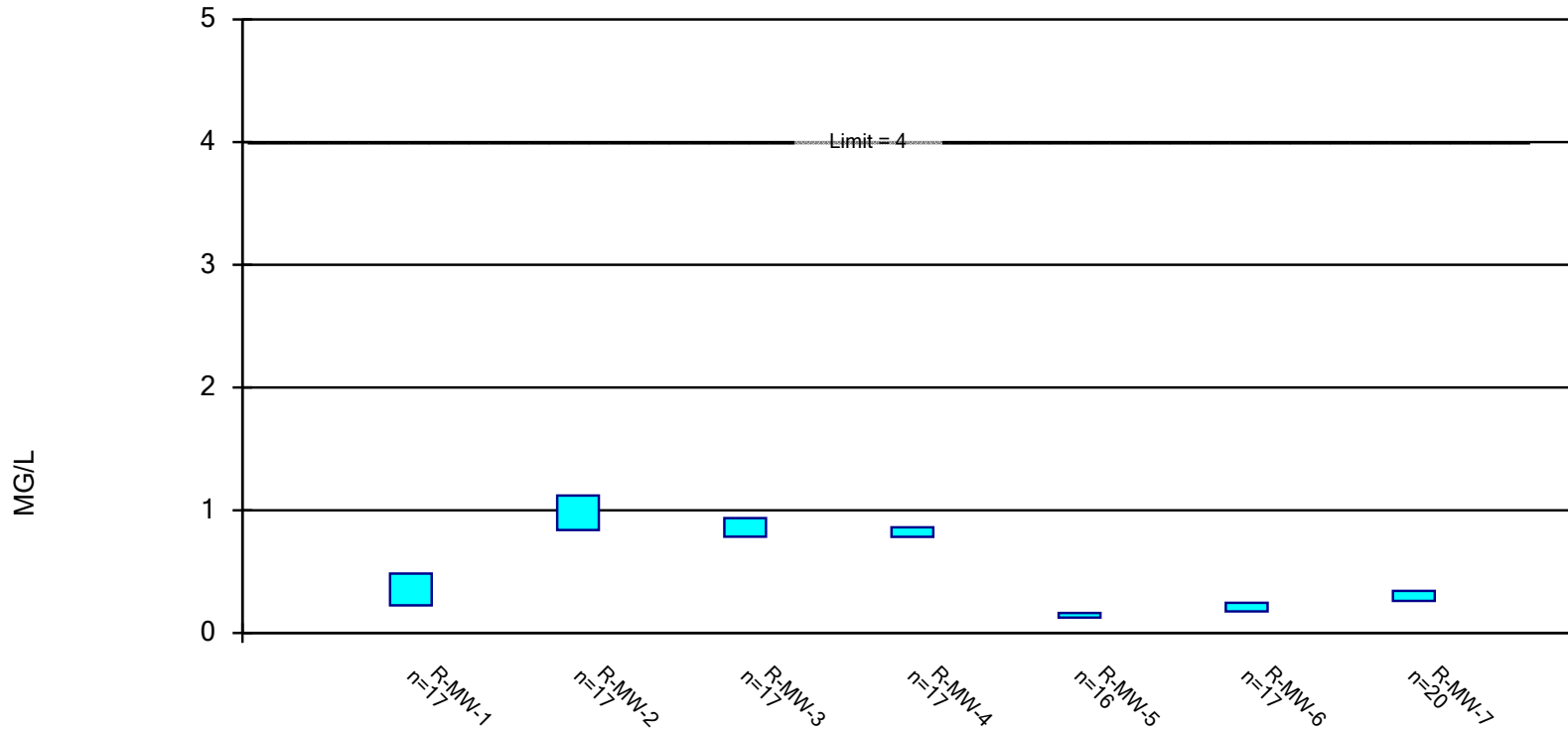


Constituent: COBALT, TOTAL Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

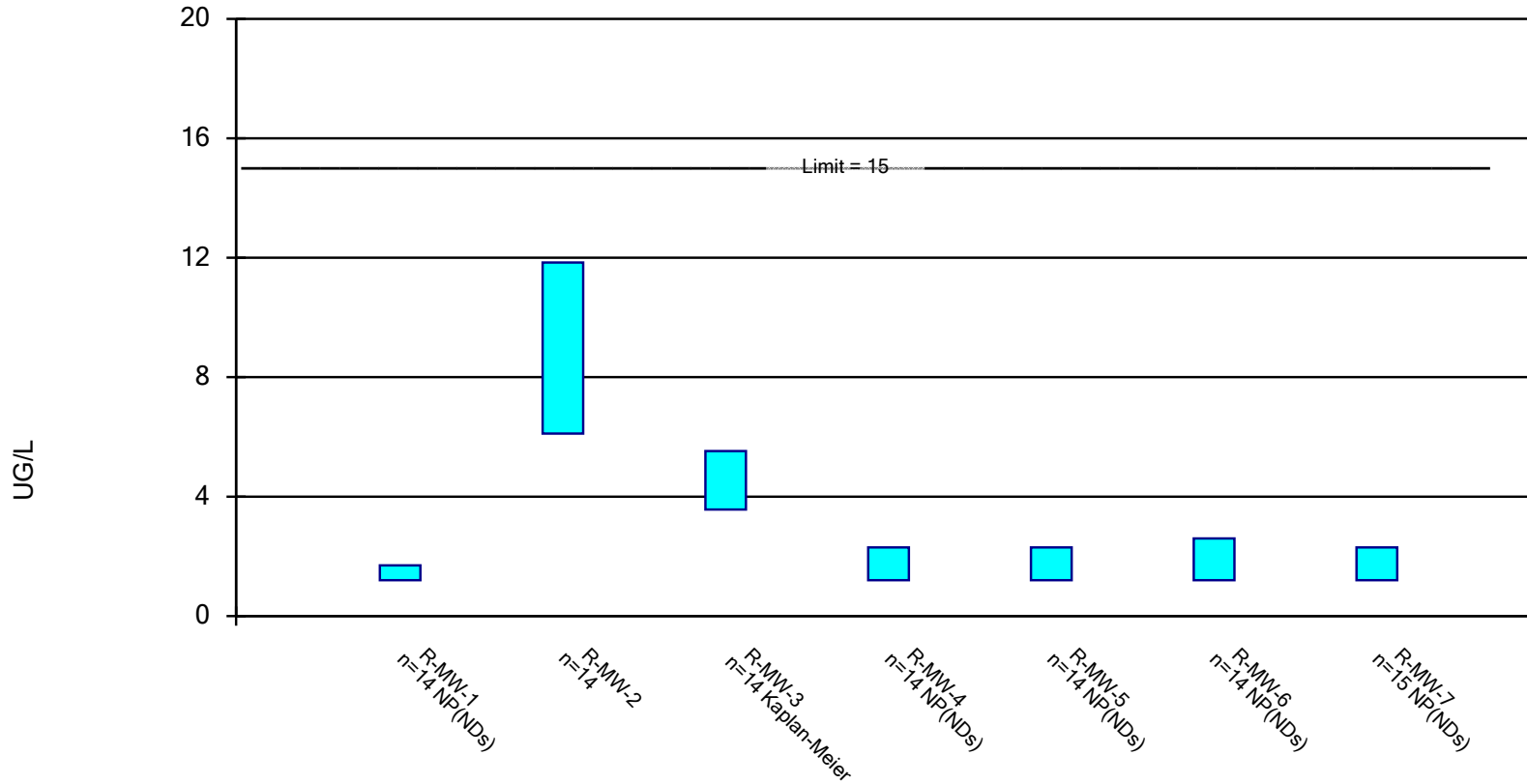


Constituent: FLUORIDE, TOTAL Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

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.

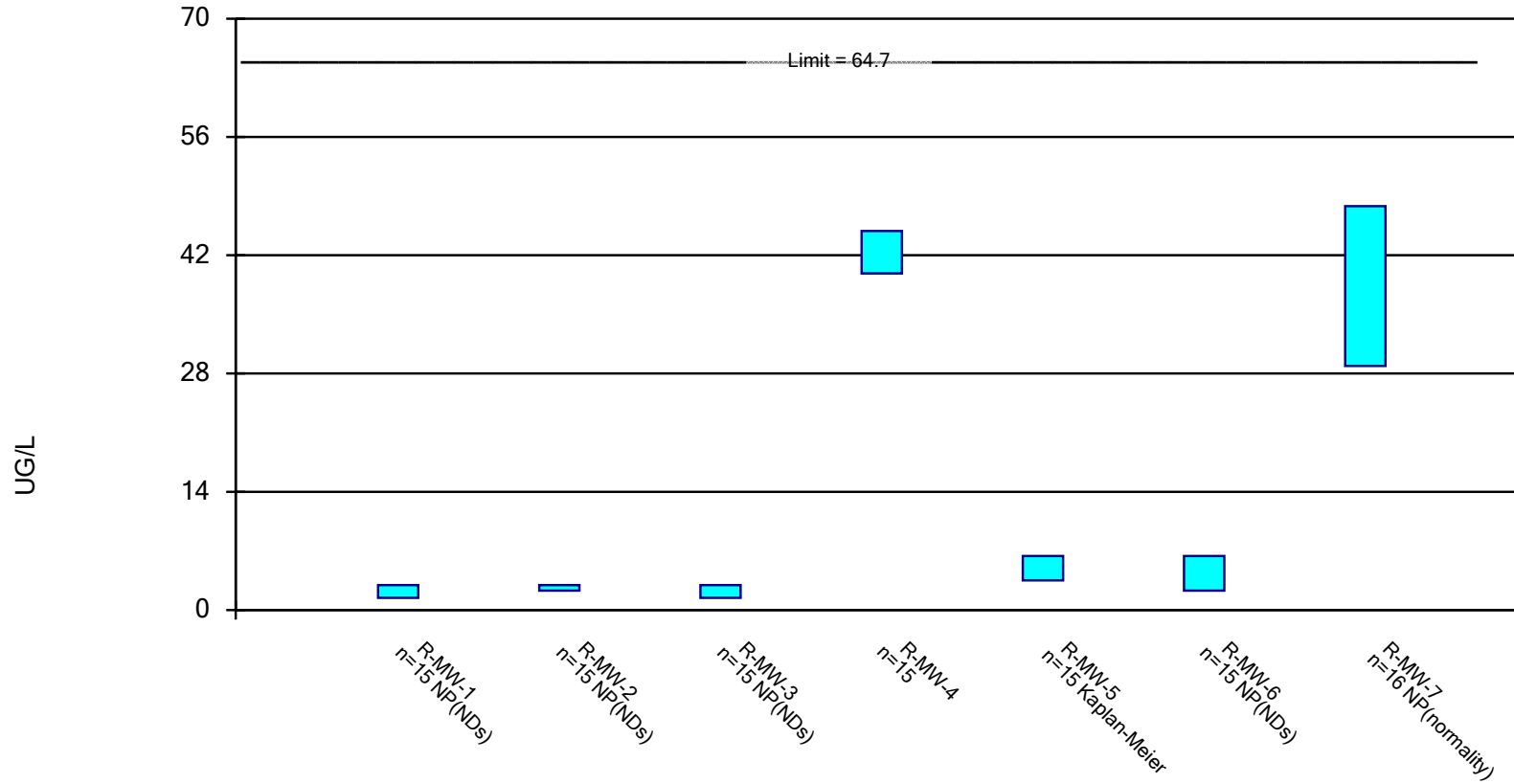


Constituent: LEAD, TOTAL Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

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.

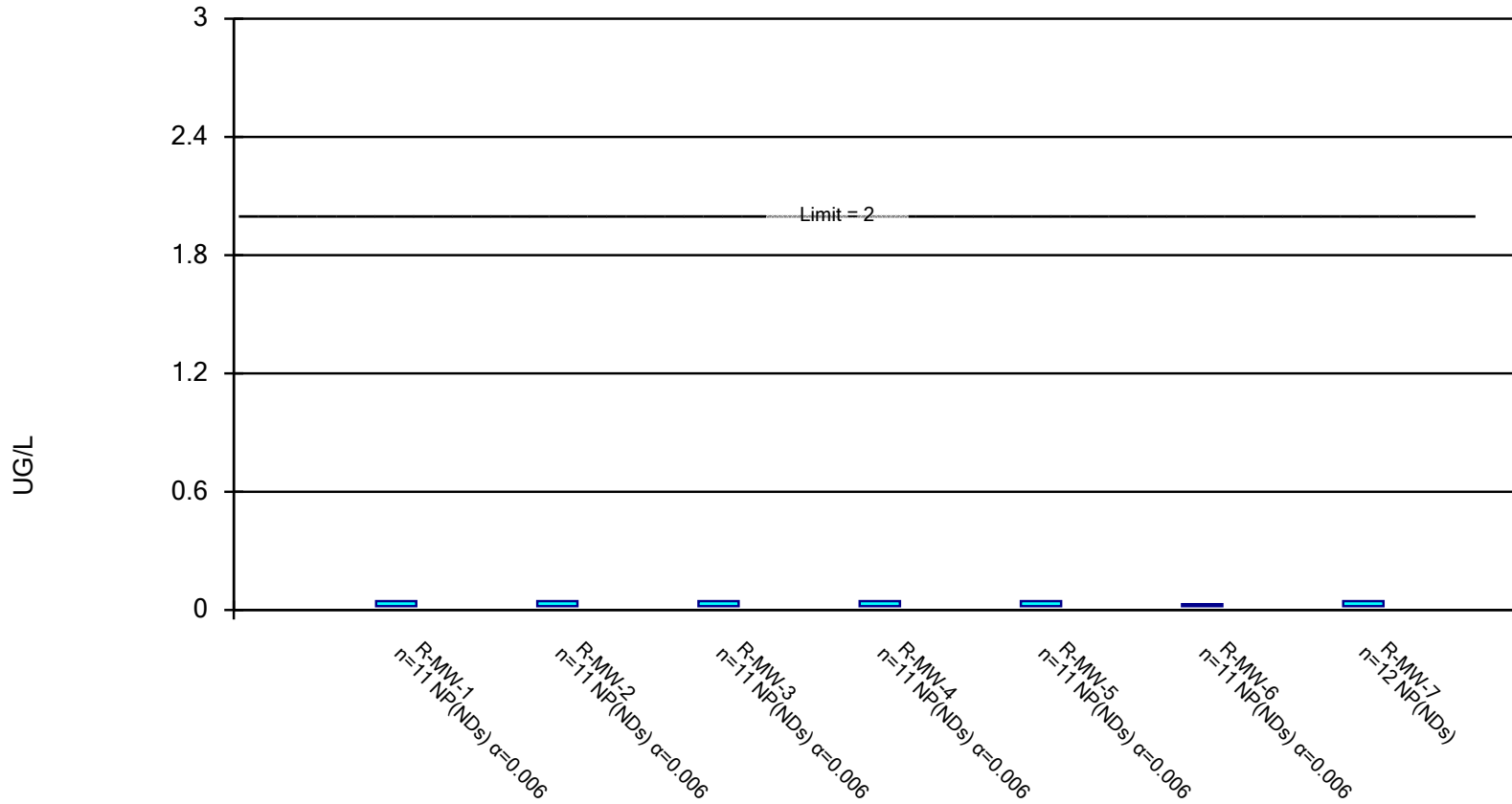


Constituent: LITHIUM, TOTAL Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.

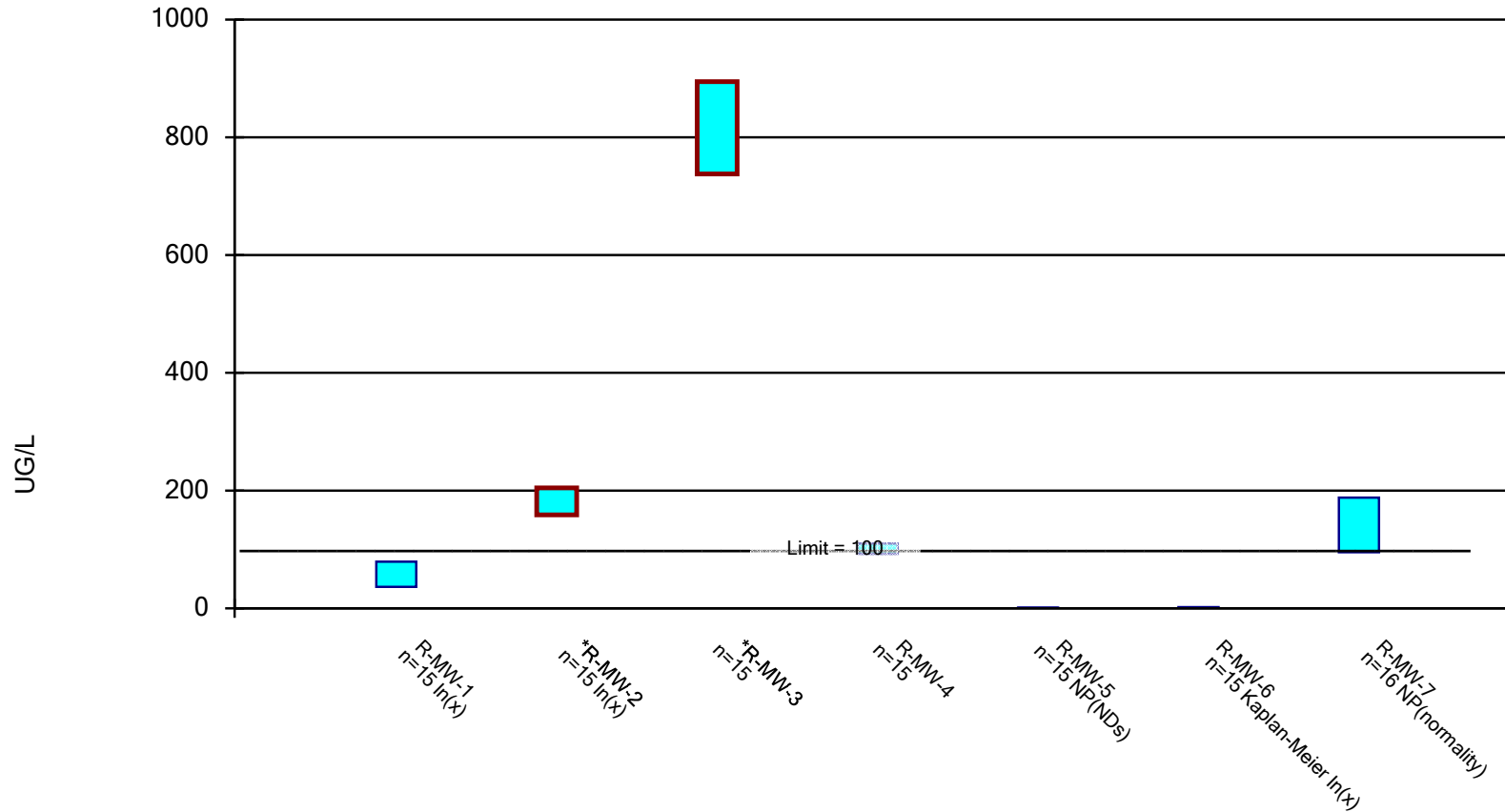


Constituent: MERCURY, TOTAL Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

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.

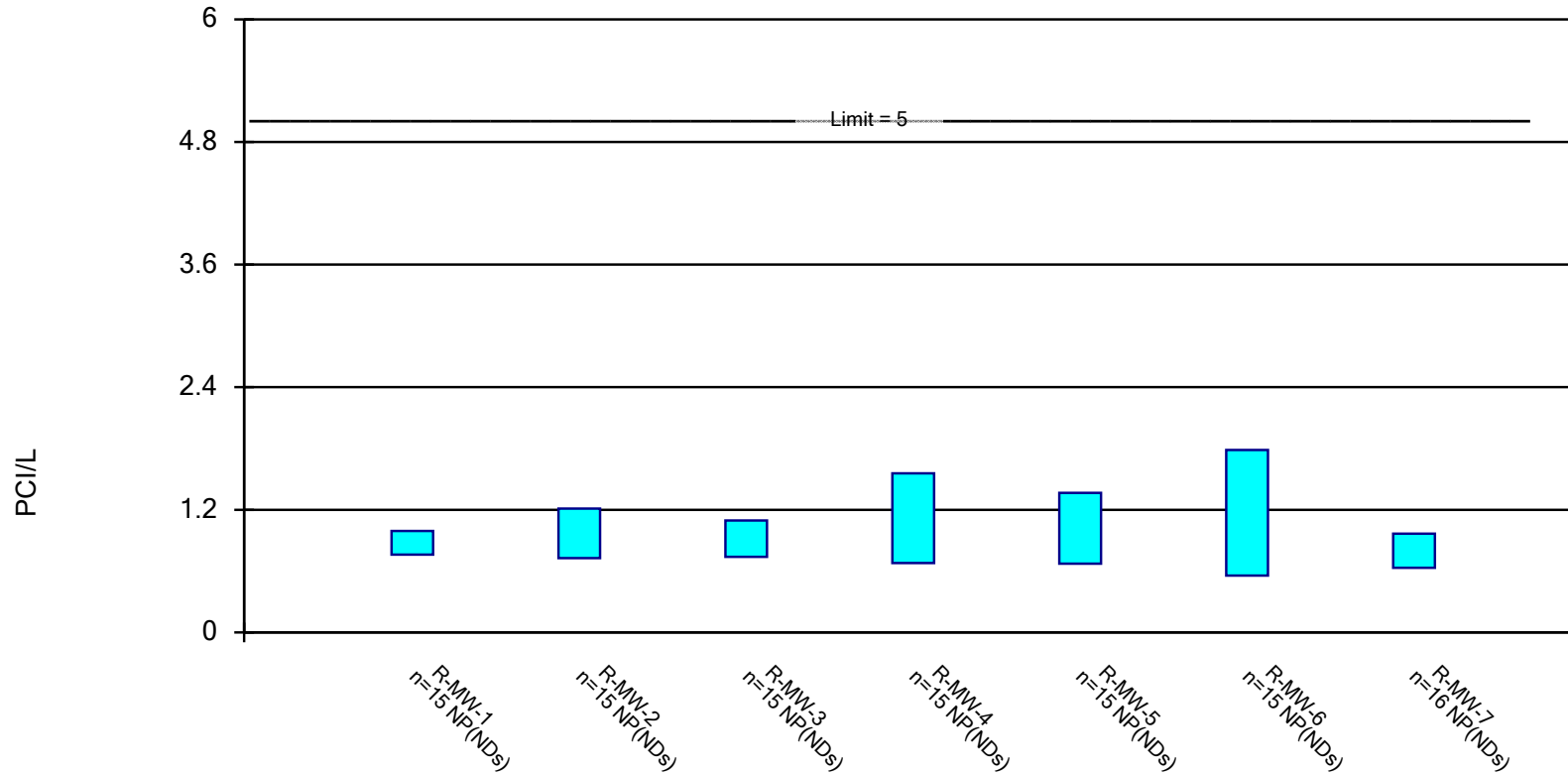


Constituent: MOLYBDENUM, TOTAL Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

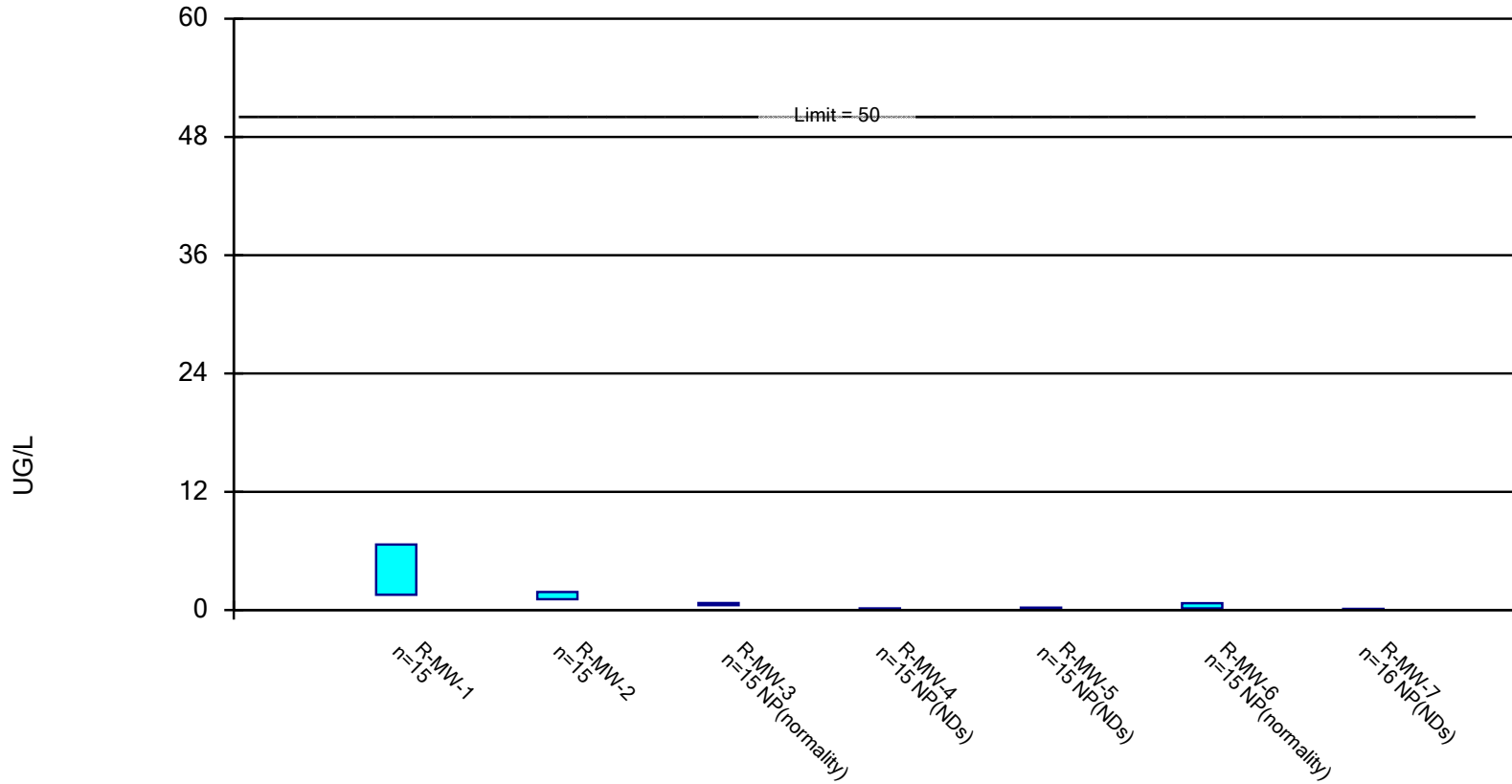


Constituent: RADIUM [226 + 228] Analysis Run 2/9/2021 1:35 PM View: Assessment Monitoring

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.

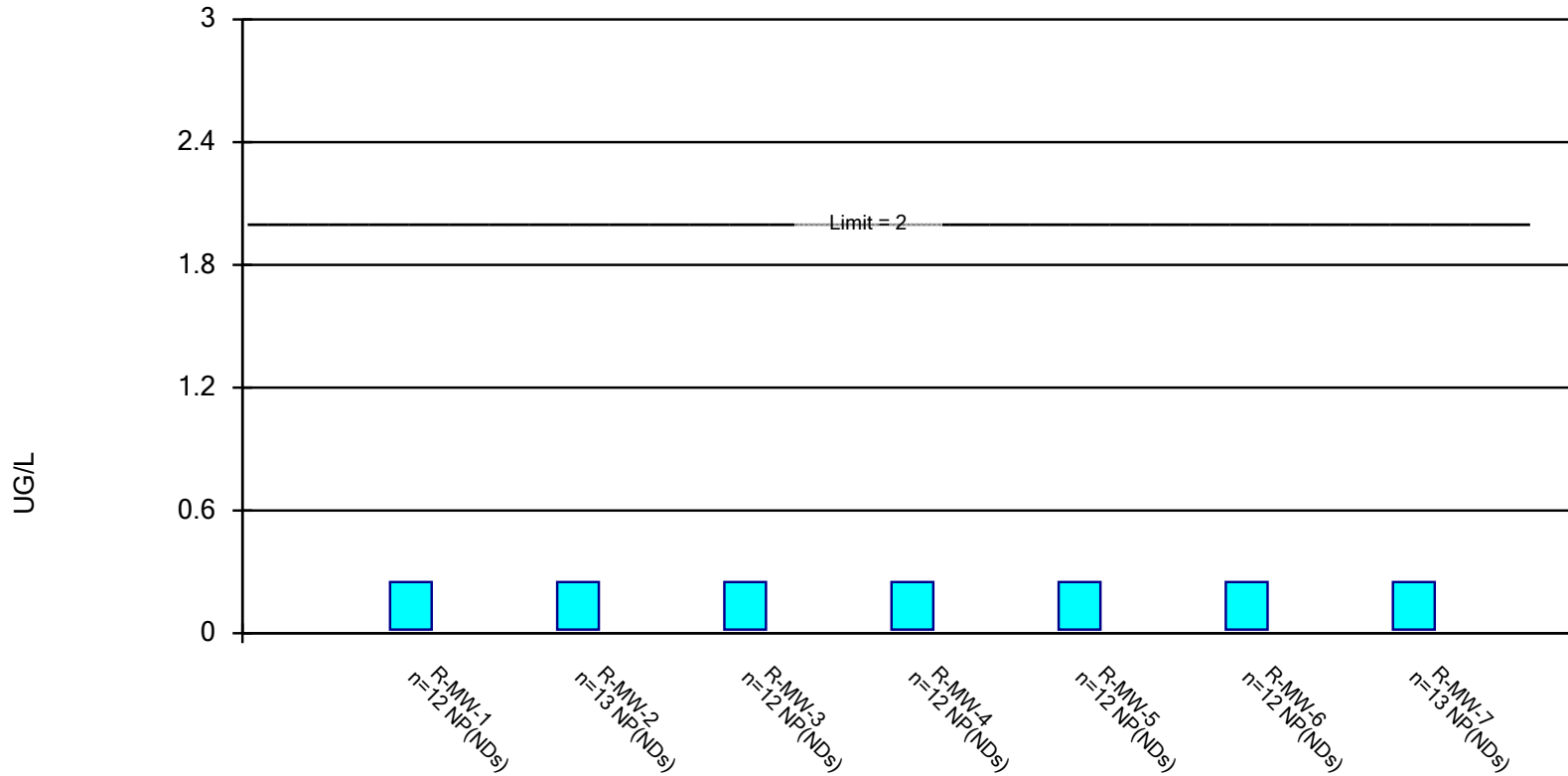


Constituent: SELENIUM, TOTAL Analysis Run 2/9/2021 1:36 PM View: Assessment Monitoring

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 2/9/2021 1:36 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/9/2021, 1:37 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	0.8303	0.3383	6	No	15	20	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-2	5.16	3.666	6	No	15	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-3	0.1242	0.04722	6	No	15	33.33	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-4	0.0485	0.0275	6	No	15	80	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-5	0.0485	0.0275	6	No	15	93.33	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-6	0.14	0.029	6	No	15	60	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-7	0.18	0.0275	6	No	16	75	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	R-MW-1	13.74	7.778	30	No	15	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-2	241.4	217.6	30	Yes	15	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-3	78.27	46.39	30	Yes	15	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-4	10.3	6.4	30	No	15	0	No	0.01	NP (normality)
ARSENIC, TOTAL (UG/L)	R-MW-5	4.431	3.209	30	No	15	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-6	2.894	0.1877	30	No	15	20	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-7	96.6	34.5	30	Yes	16	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-1	33	15.1	2000	No	15	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-2	17	9.5	2000	No	15	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-3	17.13	13.58	2000	No	15	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-4	285.3	258	2000	No	15	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-5	404.2	374.9	2000	No	15	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-6	245	105	2000	No	15	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-7	307	171	2000	No	16	0	No	0.01	NP (normality)
BERYLLIUM, TOTAL (UG/L)	R-MW-1	0.245	0.08	4	No	12	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-2	0.245	0.08	4	No	12	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-3	0.245	0.08	4	No	12	91.67	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-4	0.245	0.08	4	No	12	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-5	0.245	0.08	4	No	12	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-6	0.245	0.08	4	No	12	91.67	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-7	0.245	0.08	4	No	13	92.31	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-1	0.052	0.009	5	No	14	71.43	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-2	0.29	0.0145	5	No	14	21.43	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	R-MW-3	0.41	0.009	5	No	14	57.14	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-4	0.048	0.009	5	No	14	71.43	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-5	0.028	0.009	5	No	14	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-6	0.028	0.009	5	No	14	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-7	0.053	0.009	5	No	15	73.33	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-1	1.4	0.039	100	No	13	53.85	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-2	0.8355	0.2694	100	No	13	23.08	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-3	1.136	0.2828	100	No	13	23.08	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-4	0.6085	0.1433	100	No	13	30.77	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-5	0.5884	0.142	100	No	13	23.08	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-6	1.1	0.039	100	No	13	61.54	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-7	0.3954	0.1168	100	No	14	35.71	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-MW-1	0.86	0.36	6	No	13	84.62	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-2	0.75	0.36	6	No	13	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-3	0.75	0.36	6	No	13	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-4	0.82	0.36	6	No	13	76.92	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-5	0.84	0.36	6	No	13	84.62	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-6	0.88	0.36	6	No	13	84.62	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-7	0.92	0.36	6	No	14	78.57	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	R-MW-1	0.4841	0.2254	4	No	17	0	No	0.01	Param.

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/9/2021, 1:37 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-MW-2	1.12	0.8392	4	No	17	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-3	0.9363	0.7848	4	No	17	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-4	0.8611	0.7836	4	No	17	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-5	0.163	0.1252	4	No	16	6.25	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-6	0.2456	0.1762	4	No	17	5.882	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-7	0.3434	0.2611	4	No	20	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-1	1.7	1.2	15	No	14	100	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-2	11.84	6.111	15	No	14	7.143	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-3	5.527	3.569	15	No	14	21.43	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-4	2.3	1.2	15	No	14	92.86	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-5	2.3	1.2	15	No	14	85.71	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-6	2.6	1.2	15	No	14	85.71	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-7	2.3	1.2	15	No	15	93.33	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-1	2.95	1.45	64.7	No	15	100	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-2	2.95	2.3	64.7	No	15	86.67	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-3	2.95	1.45	64.7	No	15	93.33	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-4	44.87	39.85	64.7	No	15	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-MW-5	6.39	3.515	64.7	No	15	46.67	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-MW-6	6.4	2.3	64.7	No	15	66.67	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-7	47.8	28.9	64.7	No	16	0	No	0.01	NP (normality)
MERCURY, TOTAL (UG/L)	R-MW-1	0.045	0.0195	2	No	11	90.91	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-2	0.045	0.0195	2	No	11	90.91	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-3	0.045	0.0195	2	No	11	90.91	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-4	0.045	0.0195	2	No	11	90.91	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-5	0.045	0.0195	2	No	11	90.91	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-6	0.029	0.0195	2	No	11	100	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-7	0.0445	0.0195	2	No	12	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-MW-1	79.14	36.58	100	No	15	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-2	204.5	158.8	100	Yes	15	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-3	894.6	737.9	100	Yes	15	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-4	110.1	92.46	100	No	15	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-5	1.3	0.26	100	No	15	73.33	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-MW-6	2.131	0.7327	100	No	15	40	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-7	188	95.2	100	No	16	0	No	0.01	NP (normality)
RADIUM [226 + 228] (PCI/L)	R-MW-1	0.992	0.7615	5	No	15	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-2	1.211	0.727	5	No	15	93.33	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-3	1.094	0.7395	5	No	15	93.33	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-4	1.556	0.6785	5	No	15	80	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-5	1.366	0.672	5	No	15	80	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-6	1.785	0.556	5	No	15	73.33	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-7	0.9655	0.6325	5	No	16	87.5	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-1	6.641	1.545	50	No	15	6.667	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-2	1.829	1.093	50	No	15	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-3	0.71	0.49	50	No	15	6.667	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	R-MW-4	0.17	0.09	50	No	15	53.33	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-5	0.25	0.0425	50	No	15	100	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-6	0.7	0.17	50	No	15	20	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	R-MW-7	0.12	0.06	50	No	16	75	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-1	0.25	0.018	2	No	12	91.67	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-2	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/9/2021, 1:37 PM

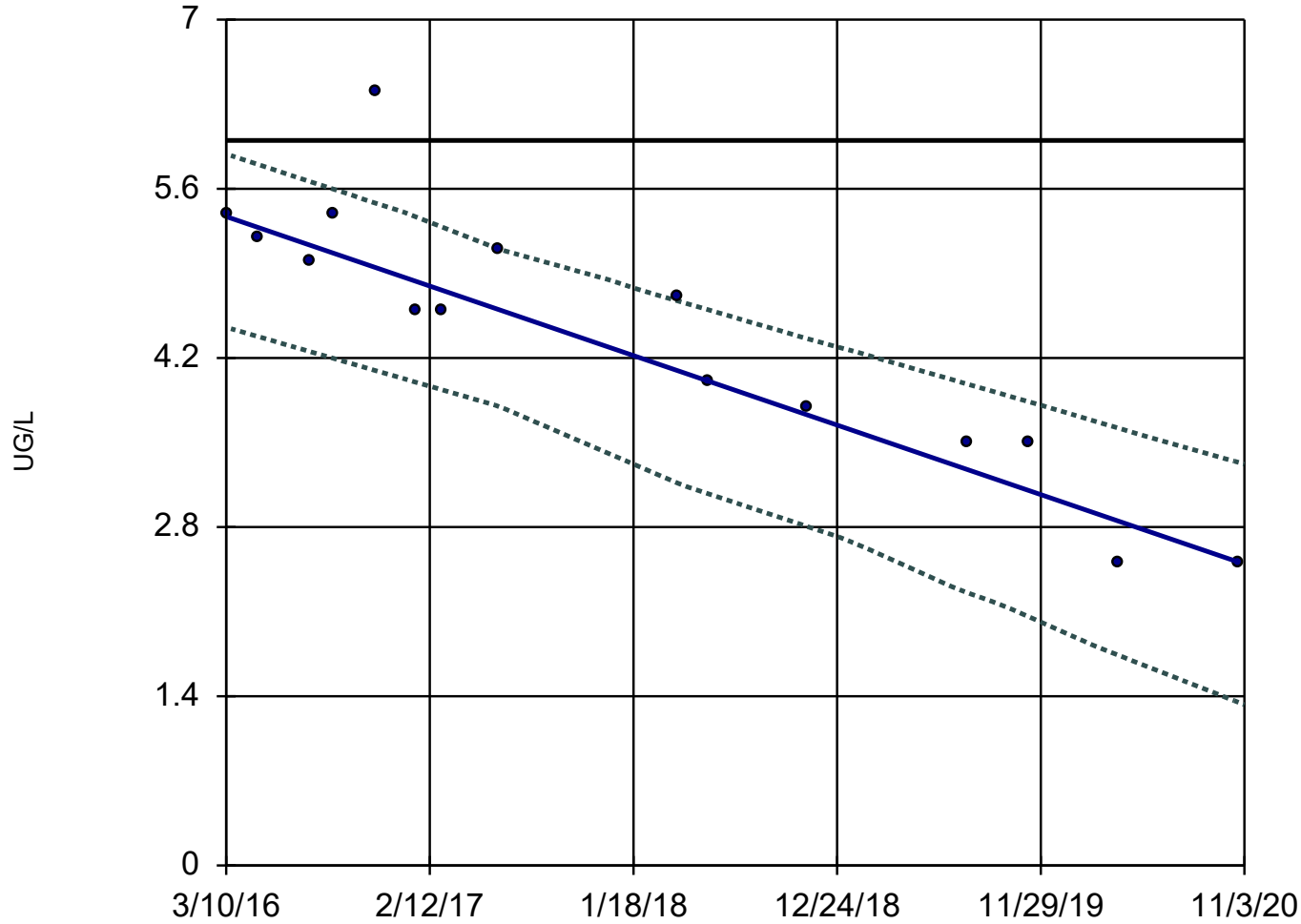
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
THALLIUM, TOTAL (UG/L)	R-MW-3	0.25	0.018	2	No	12	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-4	0.25	0.018	2	No	12	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-5	0.25	0.018	2	No	12	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-6	0.25	0.018	2	No	12	91.67	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-7	0.25	0.018	2	No	13	92.31	No	0.01	NP (NDs)

APPENDIX B

**Sanitas Trending Confidence
Bands Statistical Output**

Sen's Slope and 95% Confidence Band

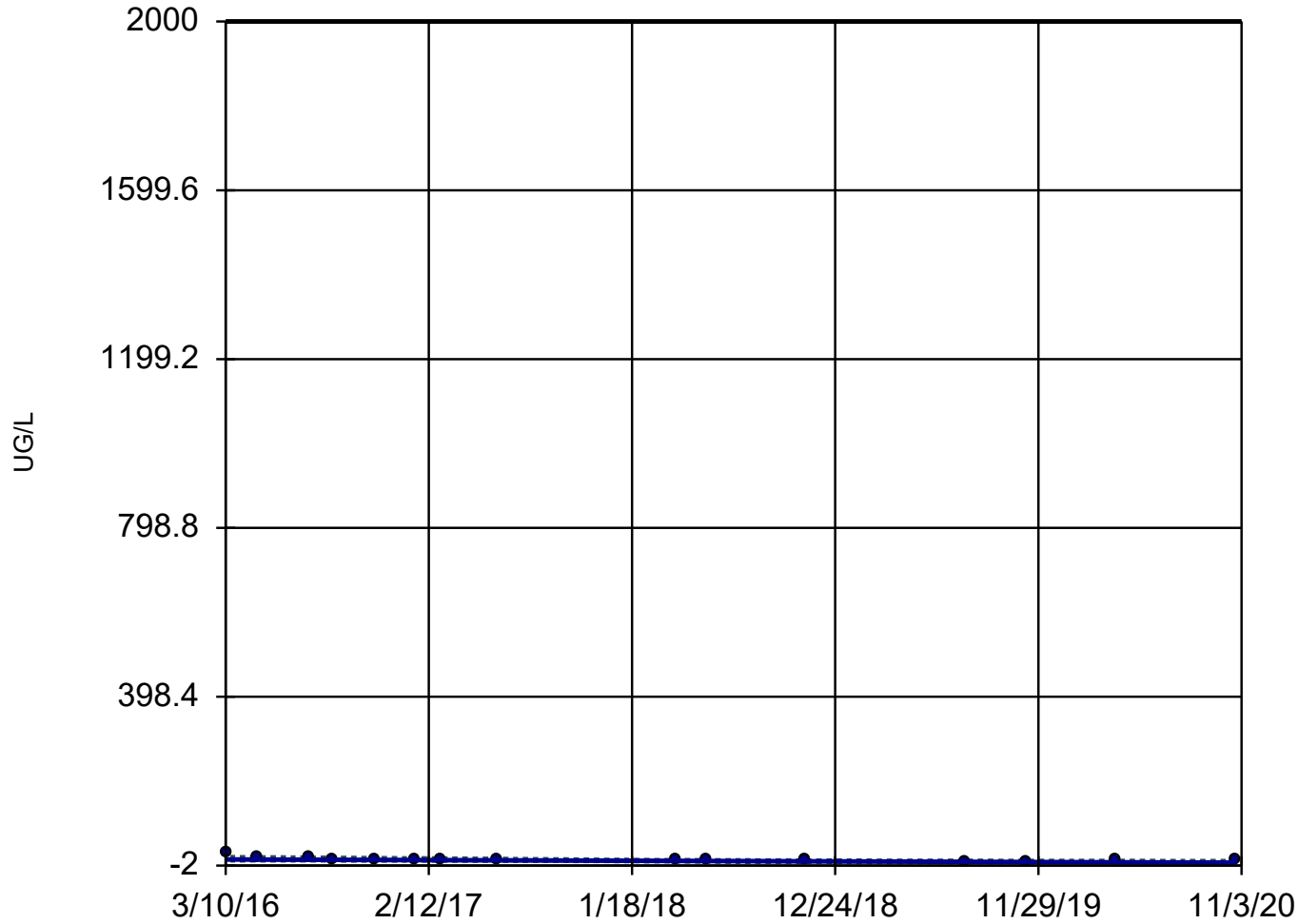
R-MW-2



n = 15
Slope = -0.6179 units per year.
Mann-Kendall statistic = -79
critical = -48
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).
GWPS = 6.

Sen's Slope and 95% Confidence Band

R-MW-2



n = 15

Slope = -1.608
units per year.

Mann-Kendall
statistic = -82
critical = -48

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

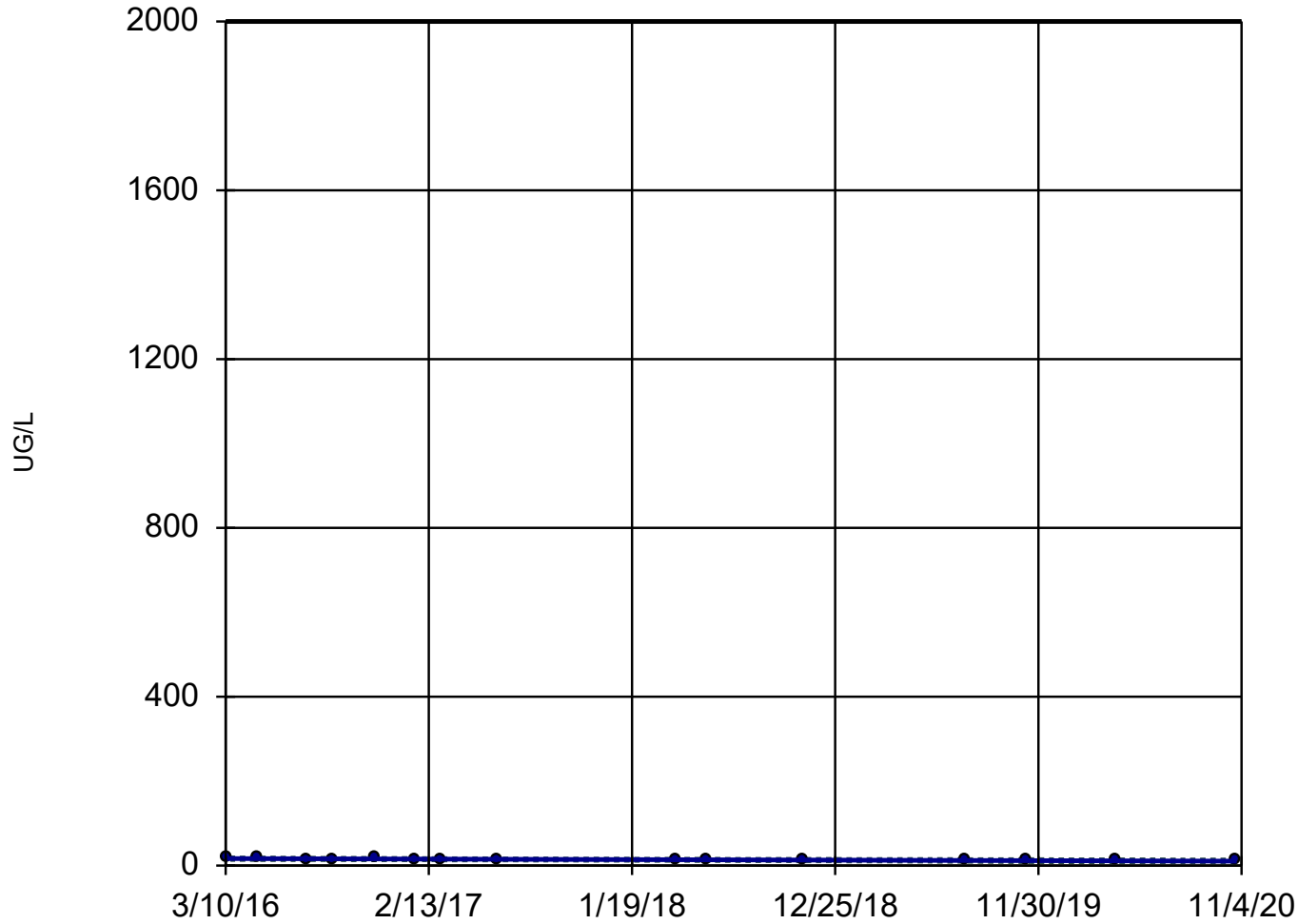
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 2/9/2021 1:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-3



n = 15

Slope = -1.356
units per year.

Mann-Kendall
statistic = -69
critical = -48

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

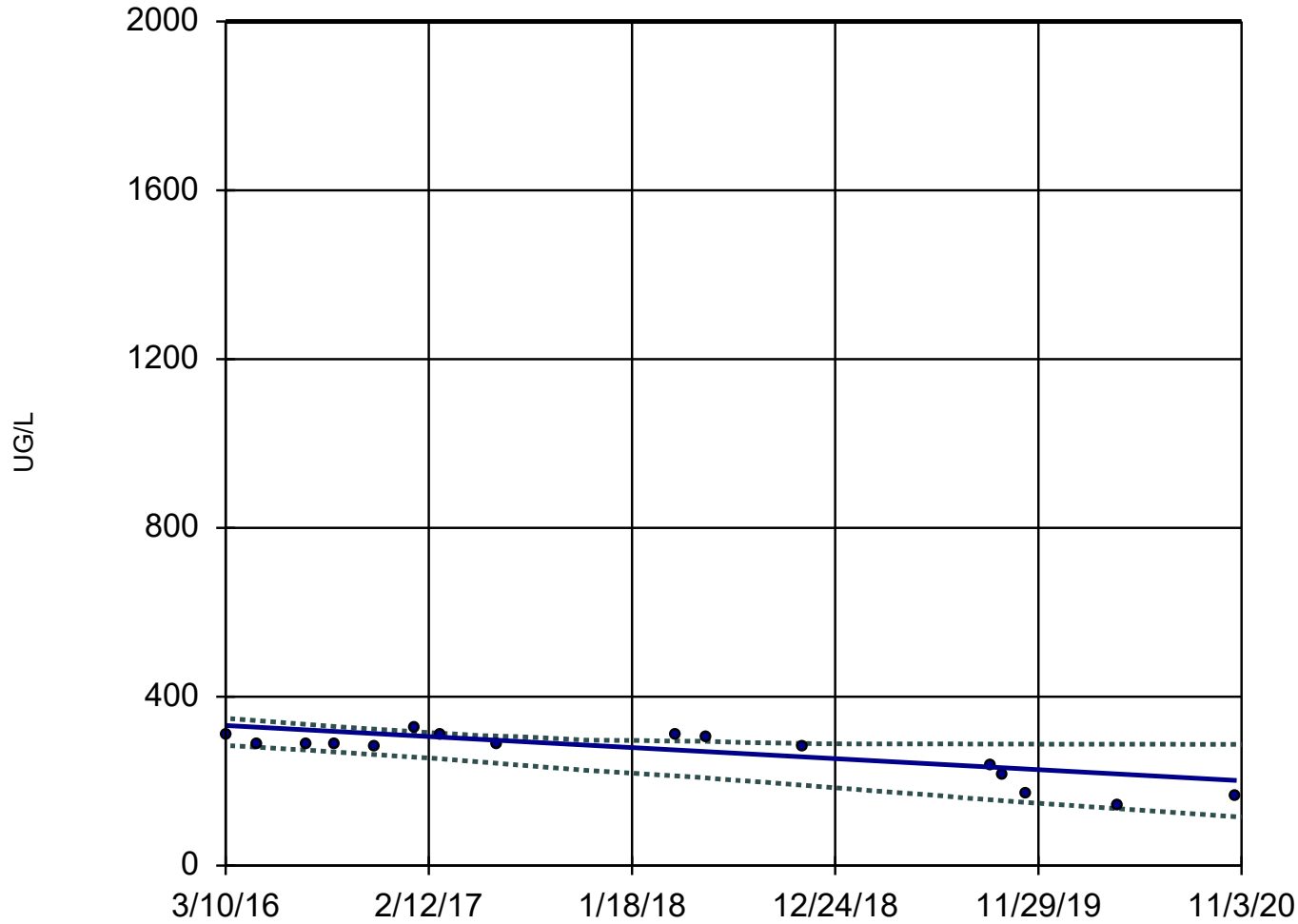
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 2/9/2021 1:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-7



n = 16

Slope = -28.09
units per year.

Mann-Kendall
statistic = -69
critical = -53

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

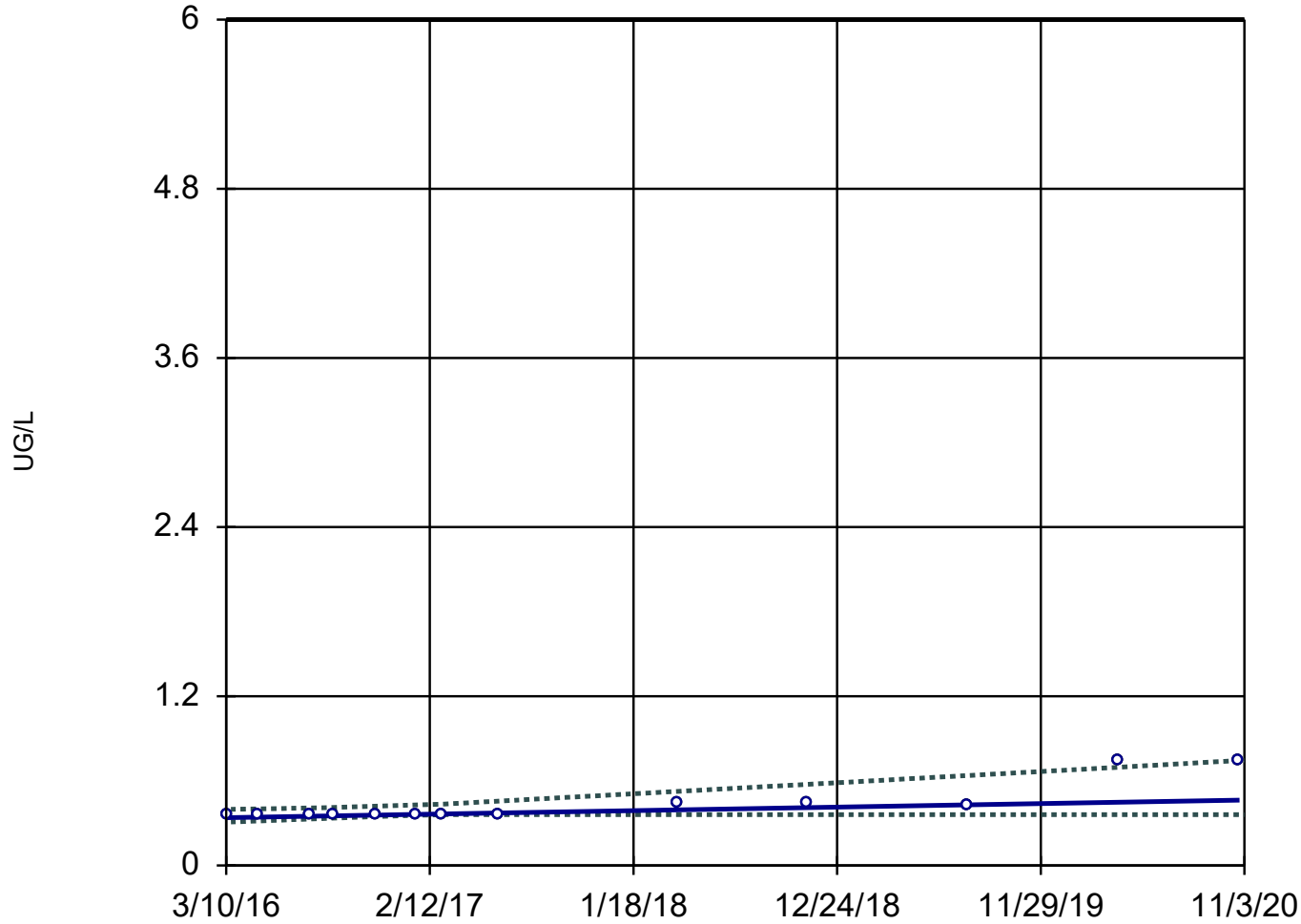
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 2/9/2021 1:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-2



n = 13

Slope = 0.02695
units per year.

Mann-Kendall
statistic = 56
critical = 39

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

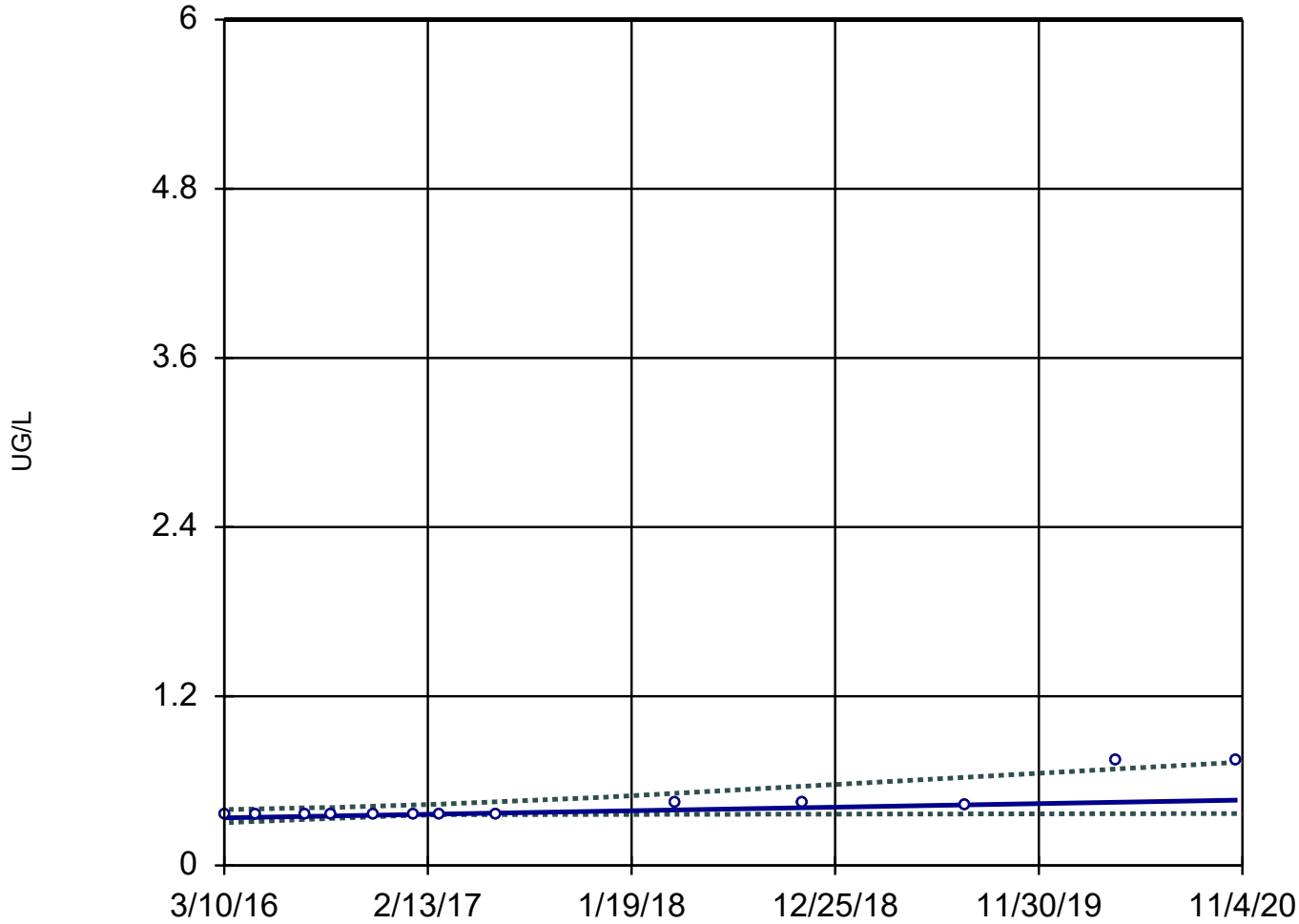
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 2/9/2021 1:52 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-3



n = 13

Slope = 0.02697
units per year.

Mann-Kendall
statistic = 56
critical = 39

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

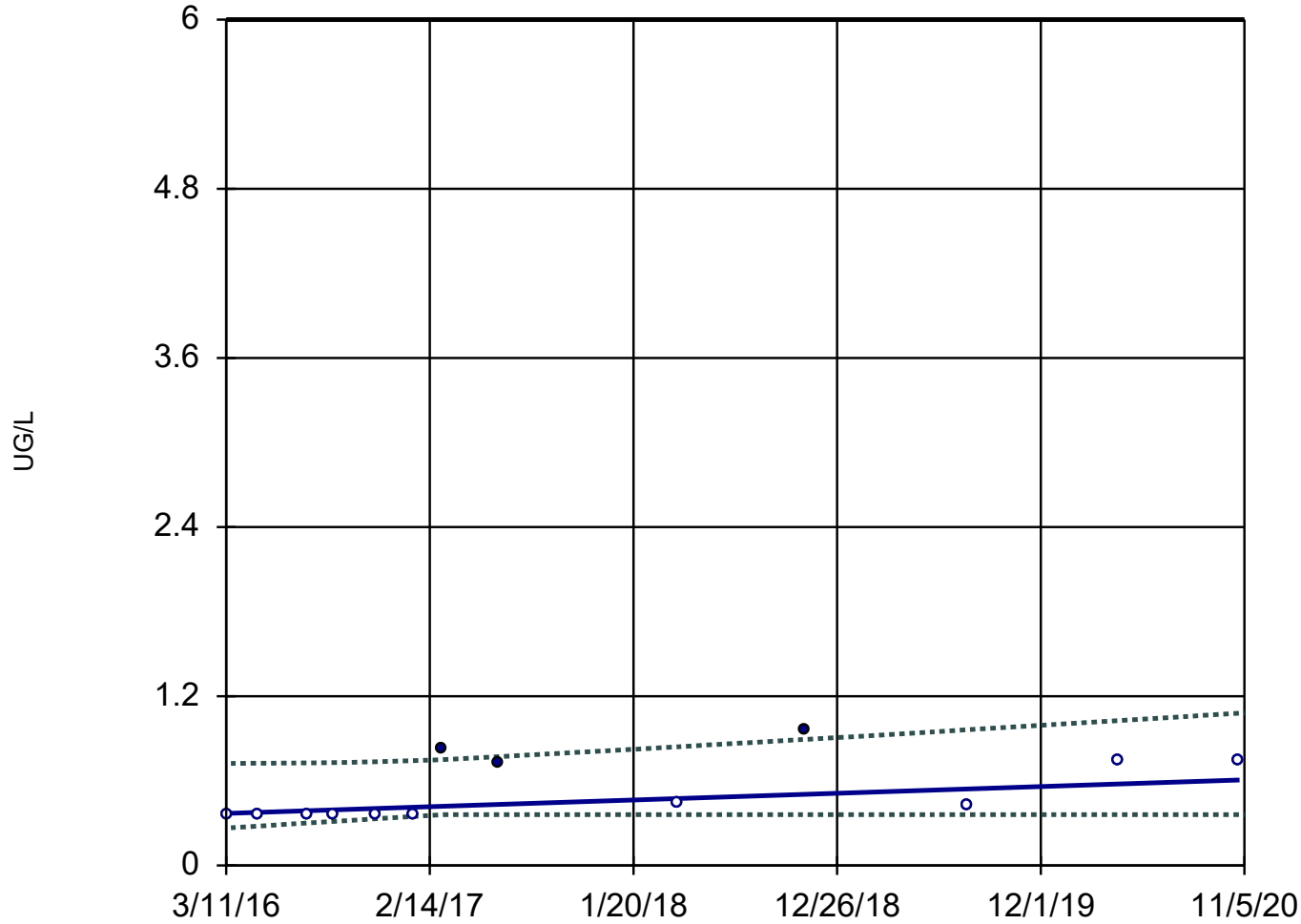
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 2/9/2021 1:52 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-4



n = 13

Slope = 0.05115
units per year.

Mann-Kendall
statistic = 40
critical = 39

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

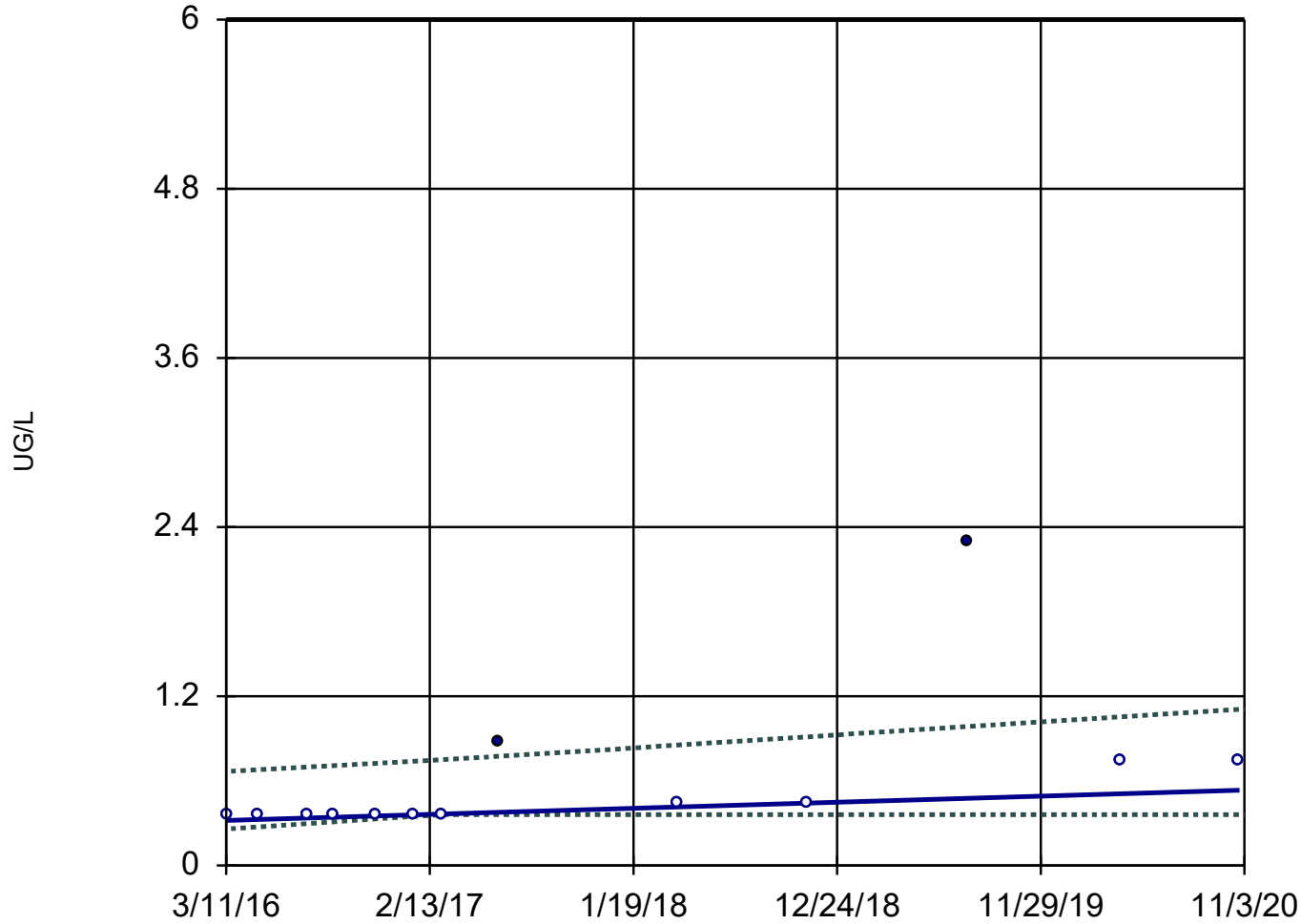
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 2/9/2021 1:52 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-6



n = 13

Slope = 0.04615
units per year.

Mann-Kendall
statistic = 49
critical = 39

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

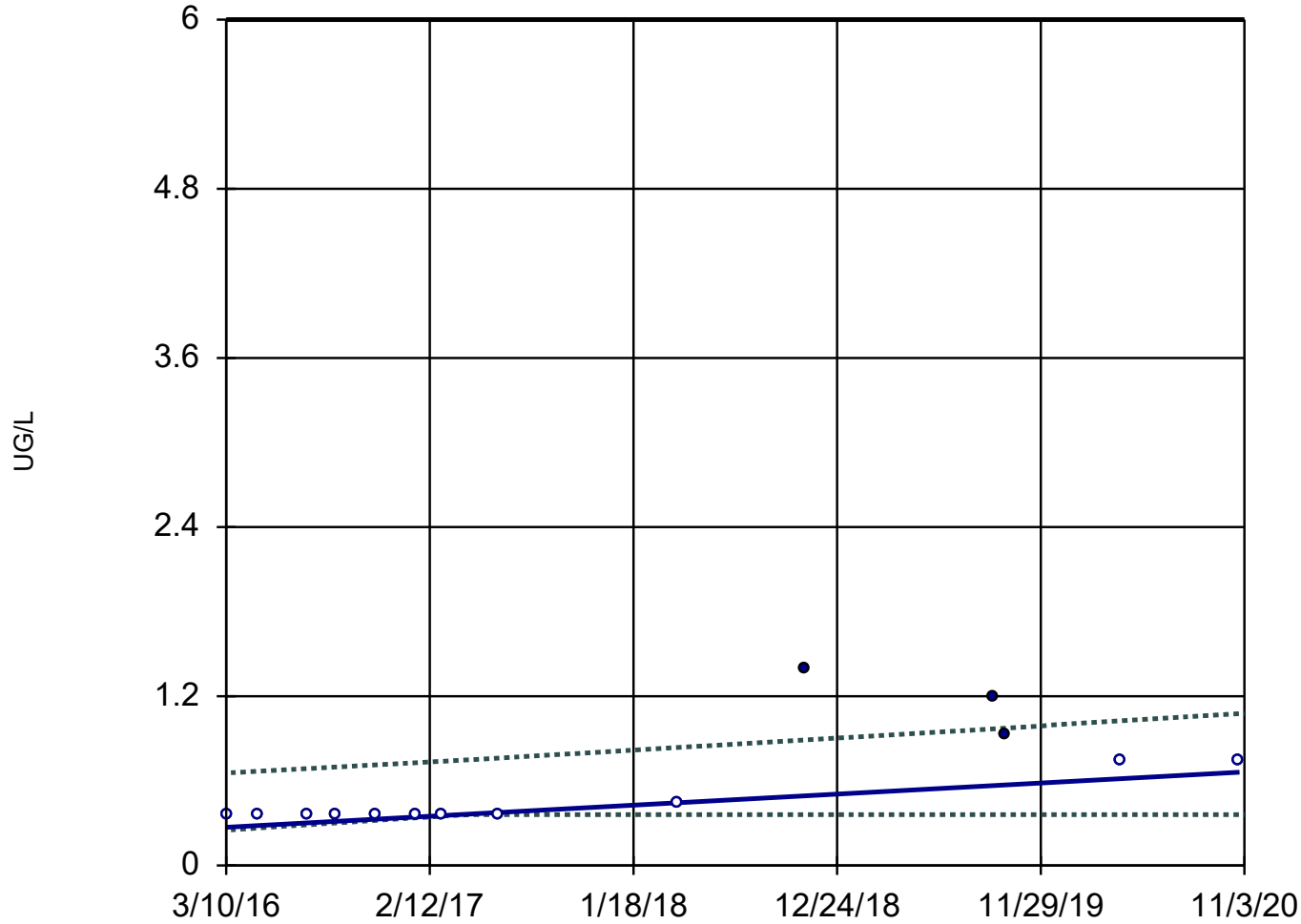
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 2/9/2021 1:52 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-7



n = 14

Slope = 0.08418
units per year.

Mann-Kendall
statistic = 56
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

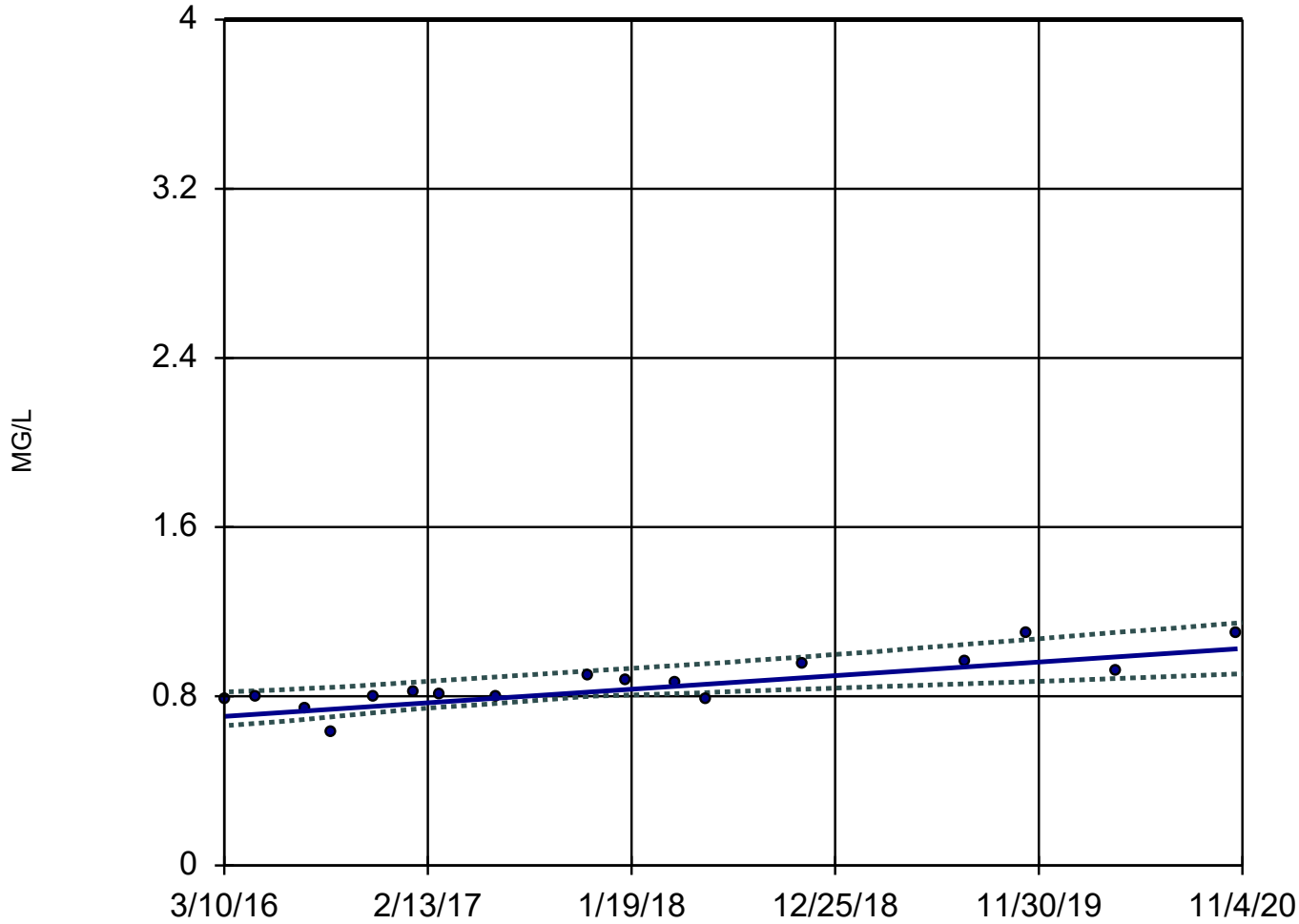
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 2/9/2021 1:52 PM View: Assessment Monitoring

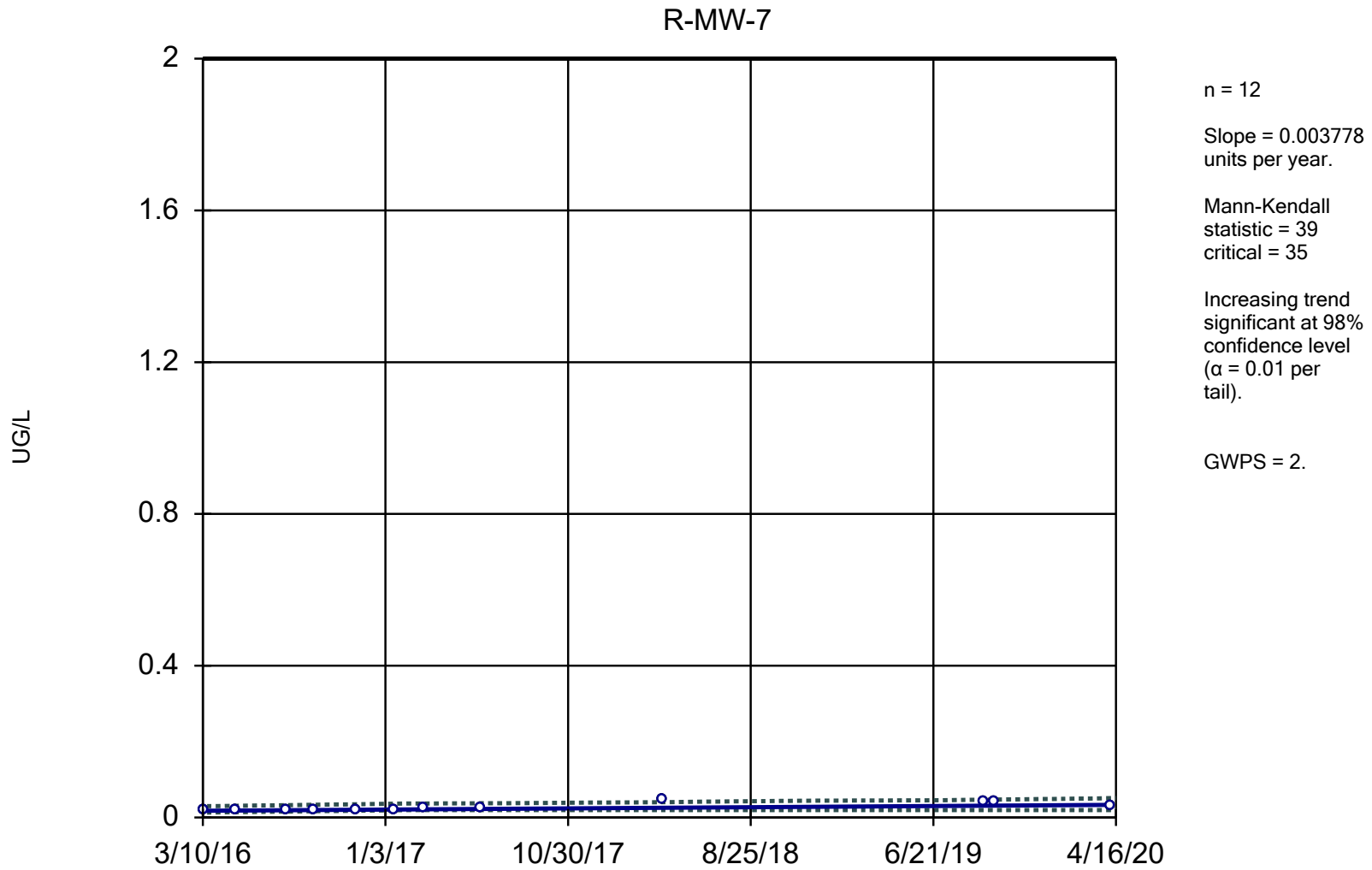
Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-3



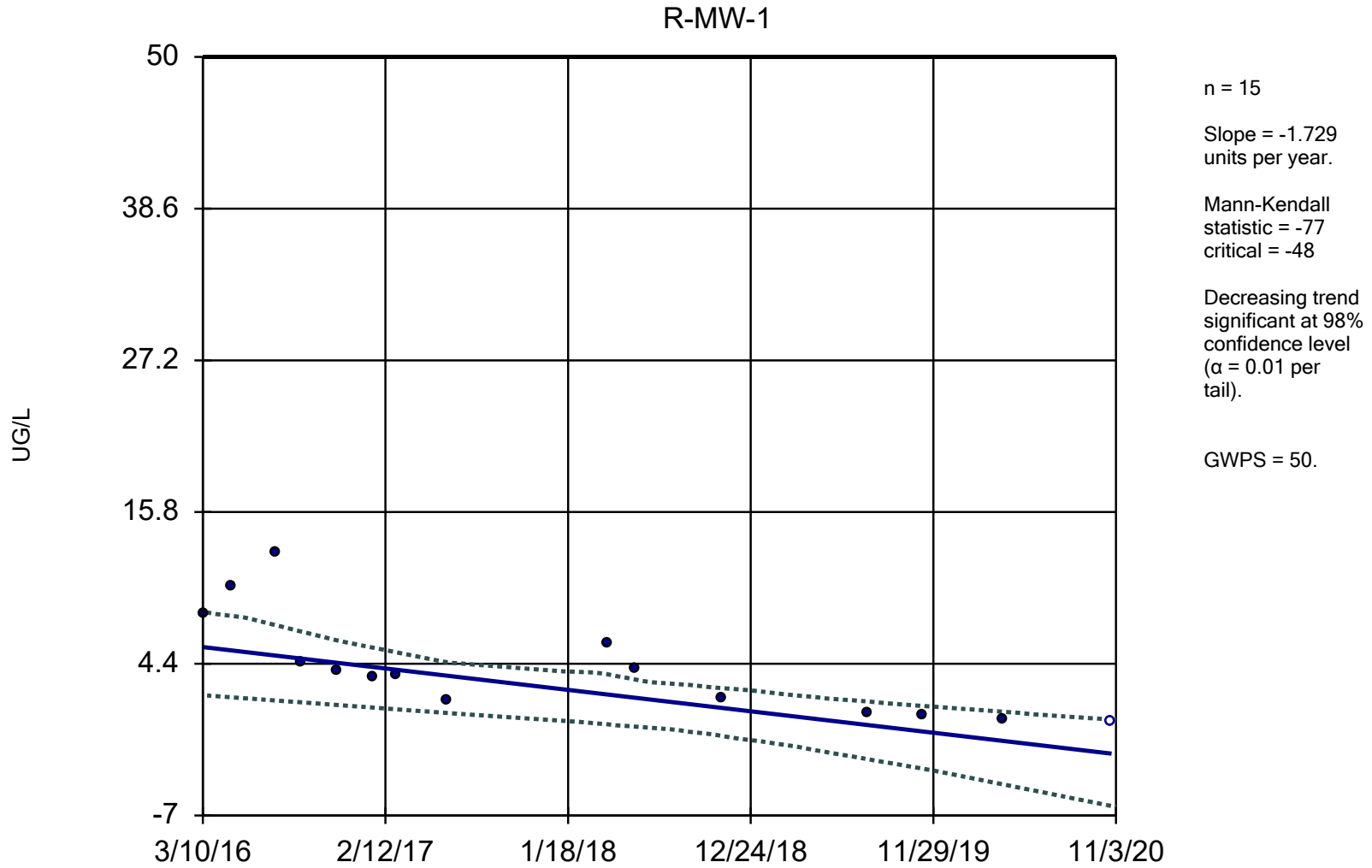
Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 2/9/2021 1:53 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band



Constituent: SELENIUM, TOTAL Analysis Run 2/9/2021 1:53 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/9/2021, 1:55 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>
ANTIMONY, TOTAL (UG/L)	R-MW-1	-0.09157	-21	-48	No	15	20	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-2	-0.6179	-79	-48	Yes	15	0	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-3	-0.00...	-6	-48	No	15	33.33	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-4	0.003698	35	48	No	15	80	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-5	0.003698	38	48	No	15	93.33	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-6	0	0	48	No	15	60	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-7	0.004044	19	53	No	16	75	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-1	-0.07449	-1	-48	No	15	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-2	-8.34	-48	-48	No	15	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-3	4.311	17	48	No	15	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-4	0	3	48	No	15	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-5	-0.4038	-56	-48	Yes	15	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-6	0.2333	21	48	No	15	20	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-7	-2.996	-14	-53	No	16	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-1	1.038	20	48	No	15	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-2	-1.608	-82	-48	Yes	15	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-3	-1.356	-69	-48	Yes	15	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-4	-1.274	-4	-48	No	15	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-5	-6.557	-40	-48	No	15	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-6	6.207	15	48	No	15	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-7	-28.09	-69	-53	Yes	16	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-1	0	-15	-35	No	12	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-2	0	-15	-35	No	12	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-3	0	-5	-35	No	12	91.67	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-4	0	-15	-35	No	12	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-5	0	-15	-35	No	12	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-6	0	-5	-35	No	12	91.67	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-7	0	-7	-39	No	13	92.31	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-1	0.009248	32	44	No	14	71.43	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-2	0.008852	11	44	No	14	21.43	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-3	0.04579	43	44	No	14	57.14	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-4	0.004525	34	44	No	14	71.43	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-5	0.000...	28	44	No	14	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-6	0.000...	28	44	No	14	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-7	0.003429	41	48	No	15	73.33	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-1	-0.06387	-28	-39	No	13	53.85	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-2	-0.1796	-32	-39	No	13	23.08	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-3	-0.2296	-30	-39	No	13	23.08	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-4	-0.15	-35	-39	No	13	30.77	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-5	-0.1016	-34	-39	No	13	23.08	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-6	-0.04372	-27	-39	No	13	61.54	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-7	-0.072	-27	-44	No	14	35.71	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-1	0.03622	44	39	Yes	13	84.62	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-2	0.02695	56	39	Yes	13	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-3	0.02697	56	39	Yes	13	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-4	0.05115	40	39	Yes	13	76.92	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-5	0.01754	23	39	No	13	84.62	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-6	0.04615	49	39	Yes	13	84.62	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-7	0.08418	56	44	Yes	14	78.57	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-1	0.06572	43	58	No	17	0	n/a	n/a	0.02	NP

Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/9/2021, 1:55 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-MW-2	0.0498	30	58	No	17	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-3	0.06895	87	58	Yes	17	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-4	0.006363	16	58	No	17	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-5	0.005801	15	53	No	16	6.25	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-6	0.0174	39	58	No	17	5.882	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-7	-0.00...	-11	-73	No	20	0	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-1	0.121	27	44	No	14	100	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-2	-0.03533	-3	-44	No	14	7.143	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-3	-0.1807	-7	-44	No	14	21.43	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-4	0	12	44	No	14	92.86	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-5	0.1213	22	44	No	14	85.71	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-6	0	6	44	No	14	85.71	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-7	0.1274	21	48	No	15	93.33	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-1	0	-14	-48	No	15	100	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-2	0	3	48	No	15	86.67	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-3	0	4	48	No	15	93.33	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-4	-0.9291	-27	-48	No	15	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-5	0.09946	5	48	No	15	46.67	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-6	0	10	48	No	15	66.67	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-7	-0.3402	-2	-53	No	16	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-1	0.001943	16	31	No	11	90.91	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-2	0.001943	16	31	No	11	90.91	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-3	0.001941	16	31	No	11	90.91	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-4	0.00194	16	31	No	11	90.91	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-5	0.00194	16	31	No	11	90.91	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-6	0.002114	19	31	No	11	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-7	0.003778	39	35	Yes	12	100	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-1	4.049	7	48	No	15	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-2	4.991	15	48	No	15	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-3	-8.685	-3	-48	No	15	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-4	1.646	15	48	No	15	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-5	0.08172	17	48	No	15	73.33	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-6	0.1565	15	48	No	15	40	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-7	-16.72	-49	-53	No	16	0	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-1	0.02862	12	48	No	15	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-2	0.07199	25	48	No	15	93.33	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-3	0.03033	25	48	No	15	93.33	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-4	0.03057	21	48	No	15	80	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-5	0.04056	31	48	No	15	80	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-6	0.111	21	48	No	15	73.33	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-7	0.06597	44	53	No	16	87.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-1	-1.729	-77	-48	Yes	15	6.667	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-2	-0.08333	-23	-48	No	15	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-3	-0.03291	-27	-48	No	15	6.667	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-4	0	13	48	No	15	53.33	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-5	-0.00...	-32	-48	No	15	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-6	-0.01672	-14	-48	No	15	20	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-7	0	10	53	No	16	75	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-1	-0.0596	-34	-35	No	12	91.67	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-2	-0.05323	-30	-39	No	13	100	n/a	n/a	0.02	NP

Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 2/9/2021, 1:55 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	-0.05584	-28	-35	No	12	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-4	-0.0558	-28	-35	No	12	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-5	-0.0558	-28	-35	No	12	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-6	-0.05953	-34	-35	No	12	91.67	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-7	-0.0556	-38	-39	No	13	92.31	n/a	n/a	0.02	NP

APPENDIX C

**April 2021 Assessment Monitoring
Statistical Evaluation**

TECHNICAL MEMORANDUM

DATE August 31, 2021 **Project No.** 153-140603

TO Bill Kutosky
Ameren Missouri

CC Susan Knowles, Craig Giesmann, Charlie Henderson

FROM Jeffrey Ingram, Sean Paulsen and Mark Haddock **EMAIL** JIngram@Golder.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 April 2021 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 was removed prior to the calculation of confidence limits:

- Molybdenum
 - MW-2 at 295 micrograms per liter ($\mu\text{g/L}$) on 4/05/2020; Result was statistically higher than other values at the the same well. The high result was not confirmed during subsequent sampling events.

Additionally, an analysis of the previously removed outliers was completed and a few statistical outliers that were previously removed were added back into the dataset, as they are no longer outliers. The following statistical outliers were added back to the dataset prior to the calculation of confidence limits:

- Lead
 - MW-4 at 3.1 J $\mu\text{g/L}$ on 3/11/2016 was originally removed as an outlier for the November 2019 event statistical analysis because the value was statistically higher than the other results at the same well. Additional sampling results have displayed a larger spatial variability in this well and it is no longer a statistical outlier.
 - MW-5 at 3.0 J $\mu\text{g/L}$ on 1/19/2017 and 3/06/2017 were originally removed as outliers during the analysis of data for the November 2019 event, because the values were statistically higher than the other results at the same well. Additional sampling results have displayed a larger spatial variability in this well so the 1/19/2017 and 3/06/2017 results are no longer statistical outliers.

- MW-6 at 3.2 J $\mu\text{g/L}$ on 3/11/2016 was originally removed as an outlier for the November 2019 event statistical analysis because the value was statistically higher than the other results at the same well. Additional sampling results have displayed a larger spatial variability in this well so it is no longer a statistical outlier.
- MW-7/MW-7(R) at 3.7 J $\mu\text{g/L}$ on 3/10/2016 was originally removed as an outlier for the November 2019 event statistical analysis because the value was statistically higher than the other results at the same well. Additional sampling results have displayed a larger spatial variability in this well so it is no longer a statistical outlier.

No new SSLs were identified in the April 2021 sampling event. The SSLs reported for the April 2021 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

Golder 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, R.G.
Senior Project Geologist



Sean Paulsen
Associate, Senior Consultant

JSI/SCP/MNH

Enclosures:

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 ⁶
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) 2012 Edition of the Drinking Water Standards and Health Advisories. Spring 2012.
<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

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

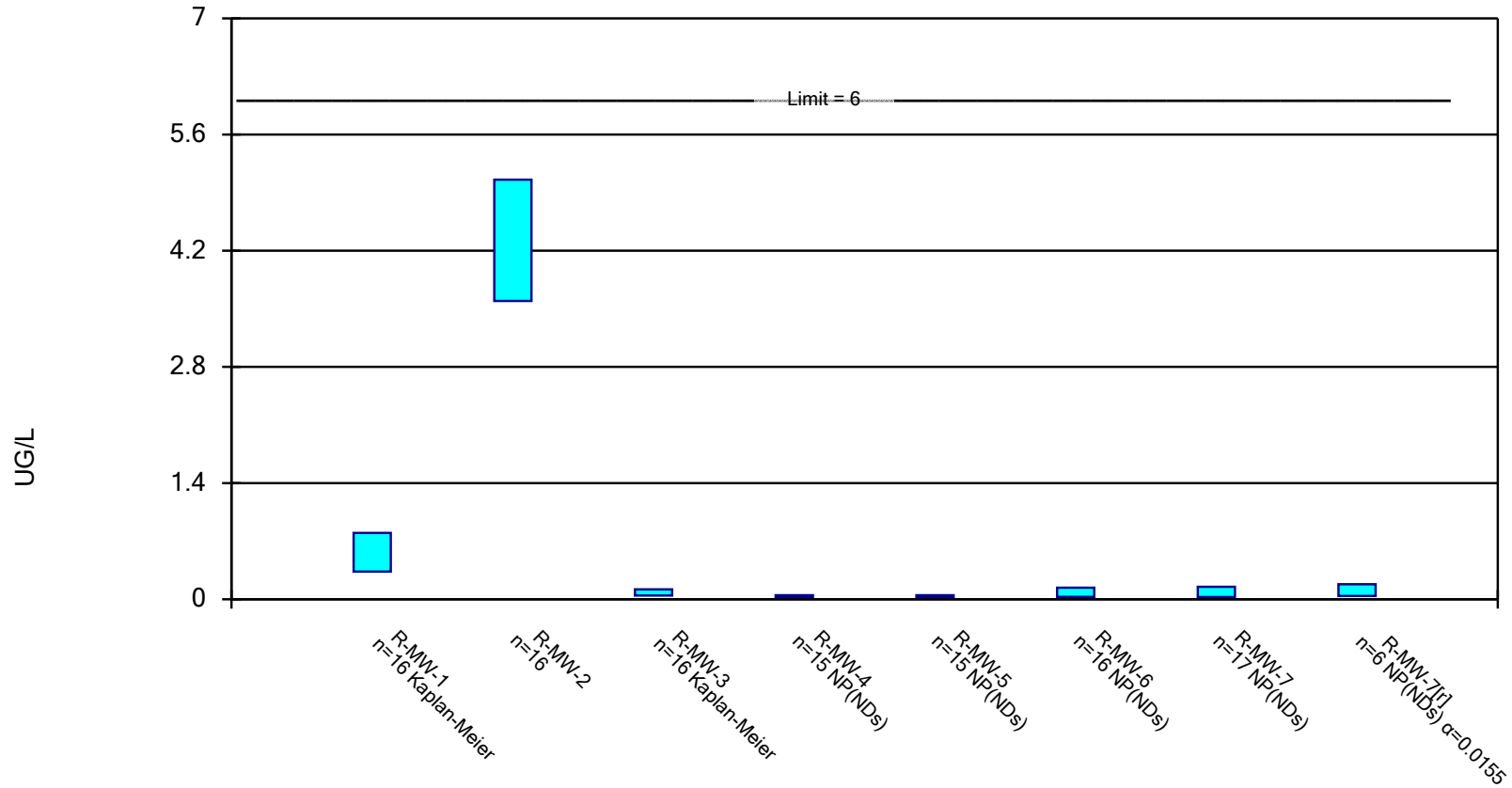
Reviewed by: SCP

APPENDIX A

**Sanitas Confidence Interval
Statistical Output**

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

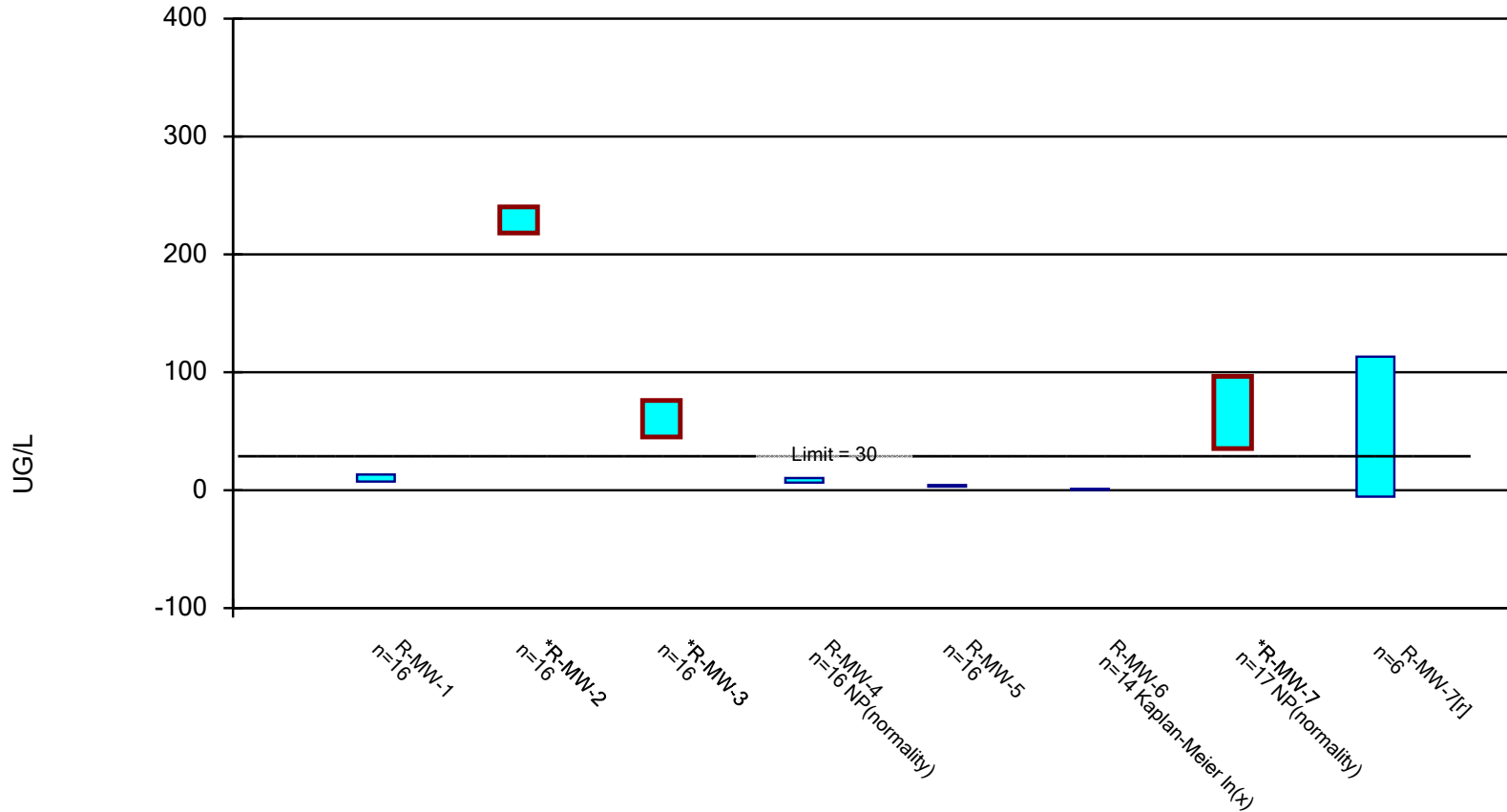


Constituent: ANTIMONY, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

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.

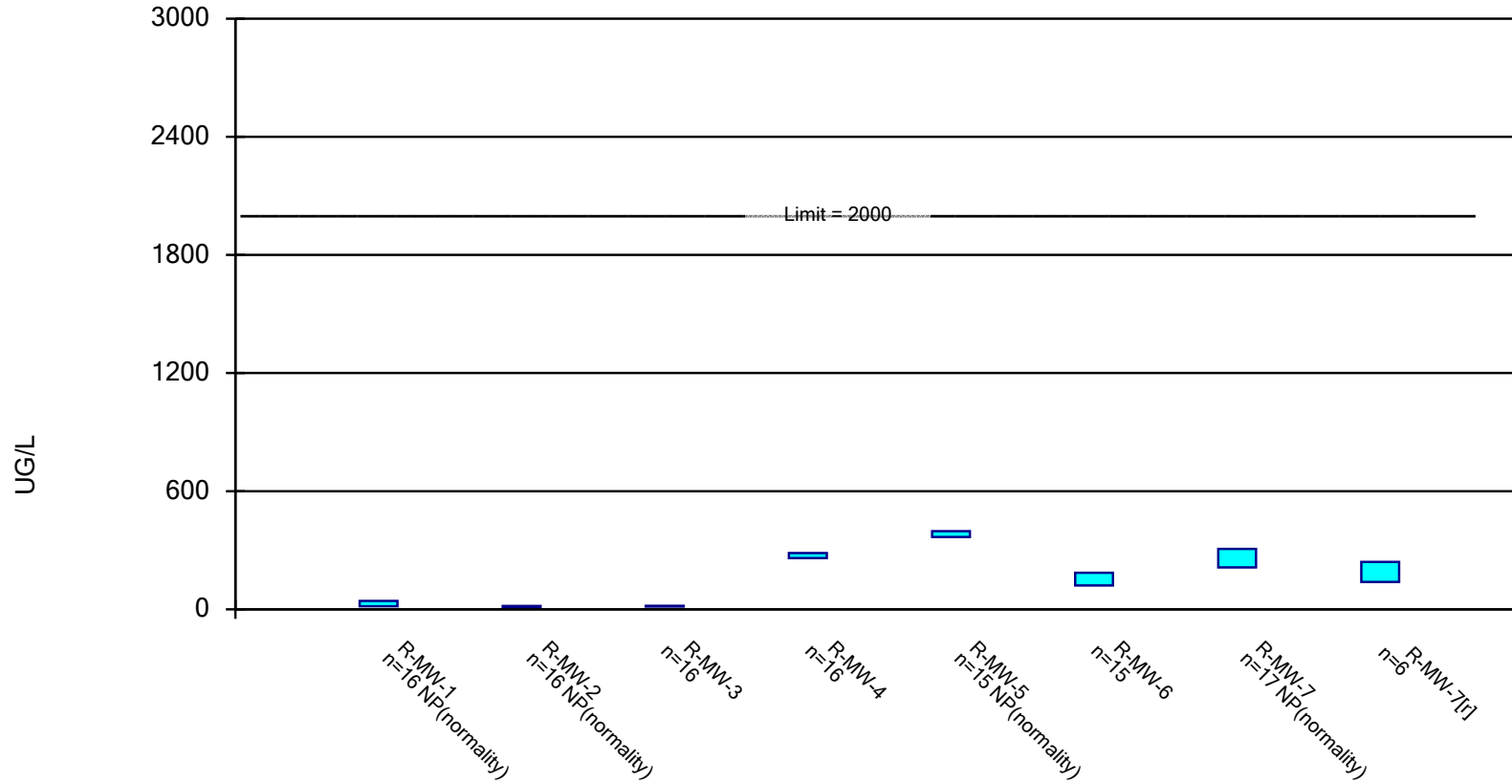


Constituent: ARSENIC, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

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.

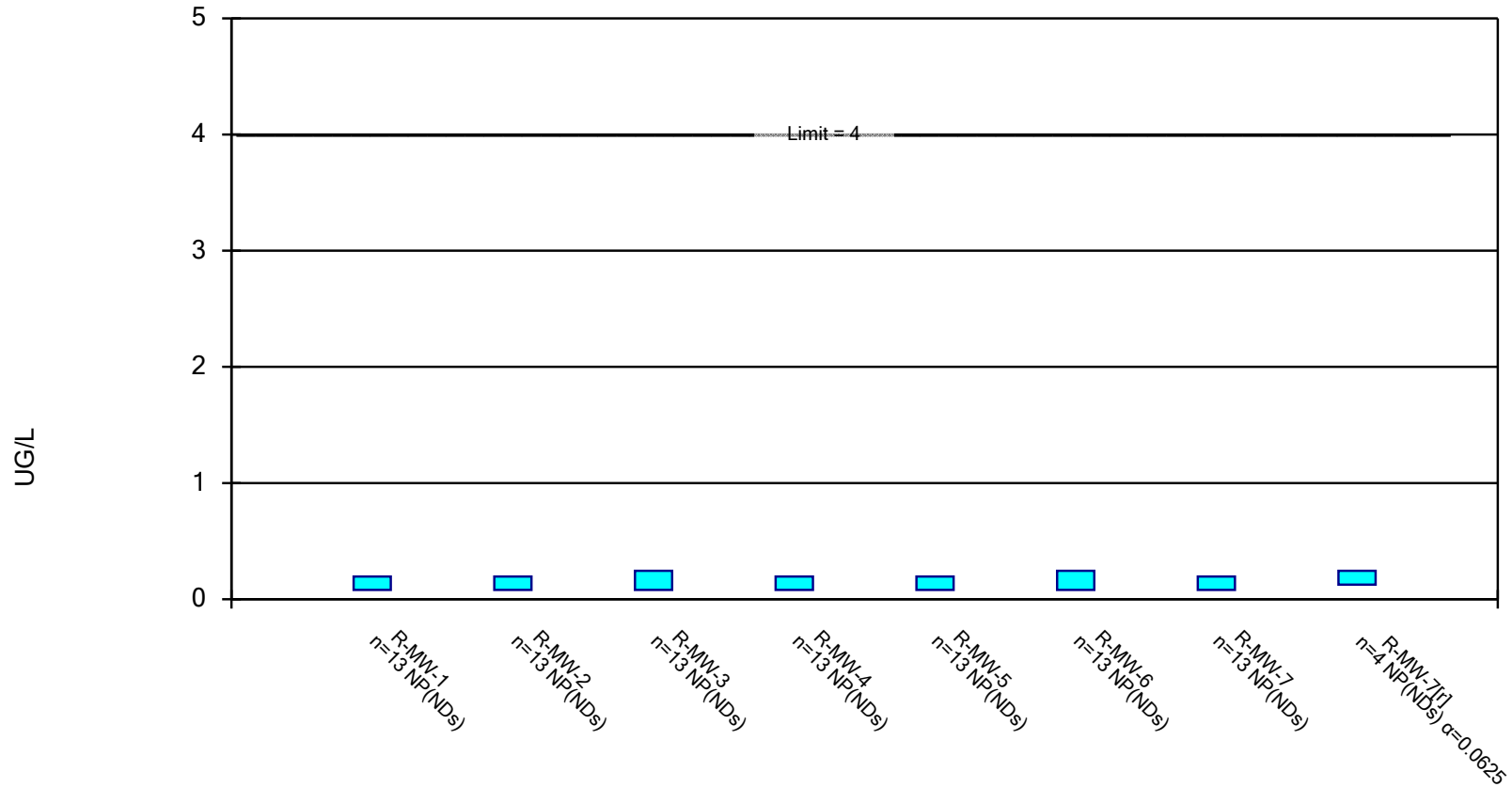


Constituent: BARIUM, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.

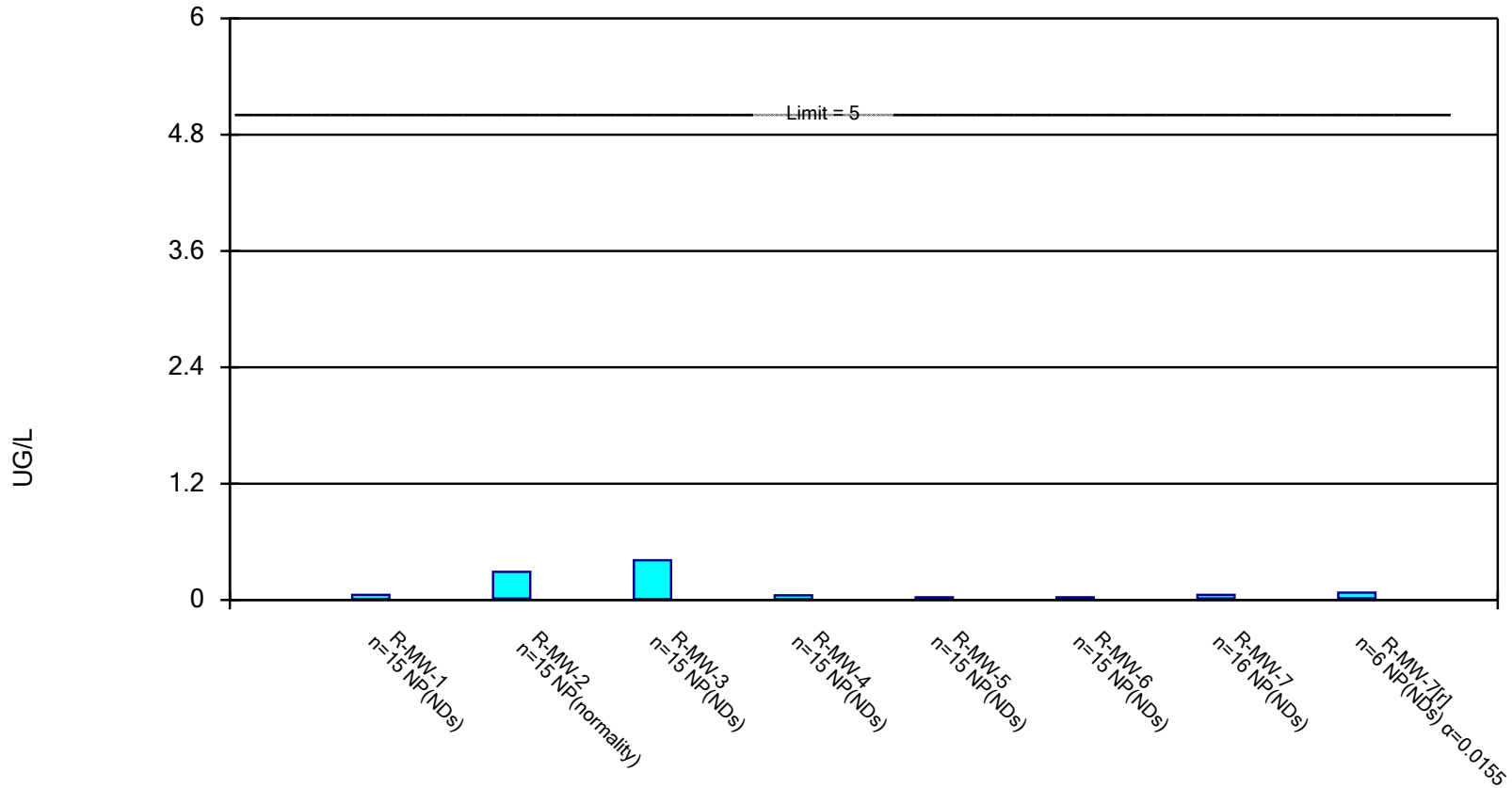


Constituent: BERYLLIUM, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.

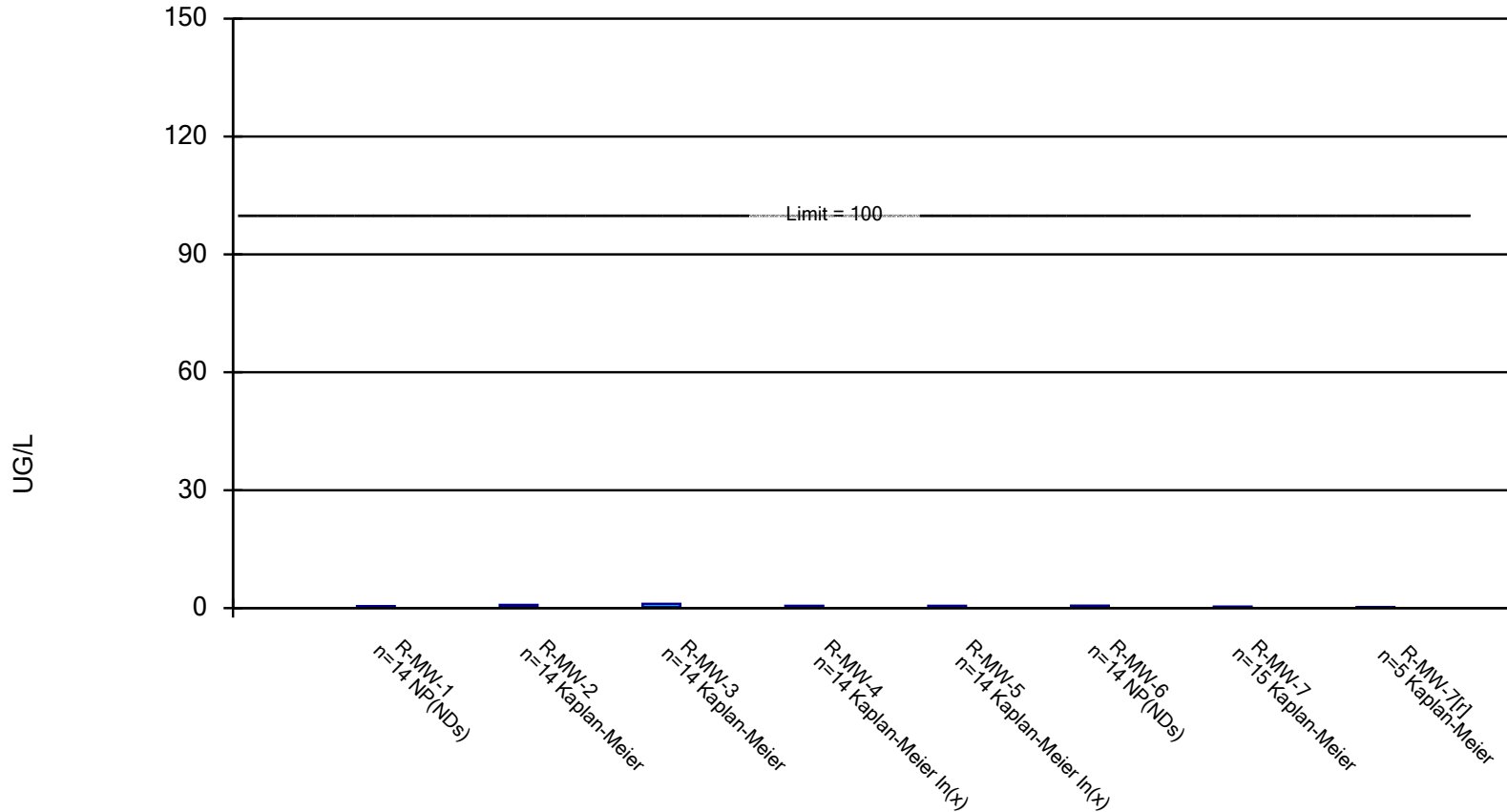


Constituent: CADMIUM, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

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.

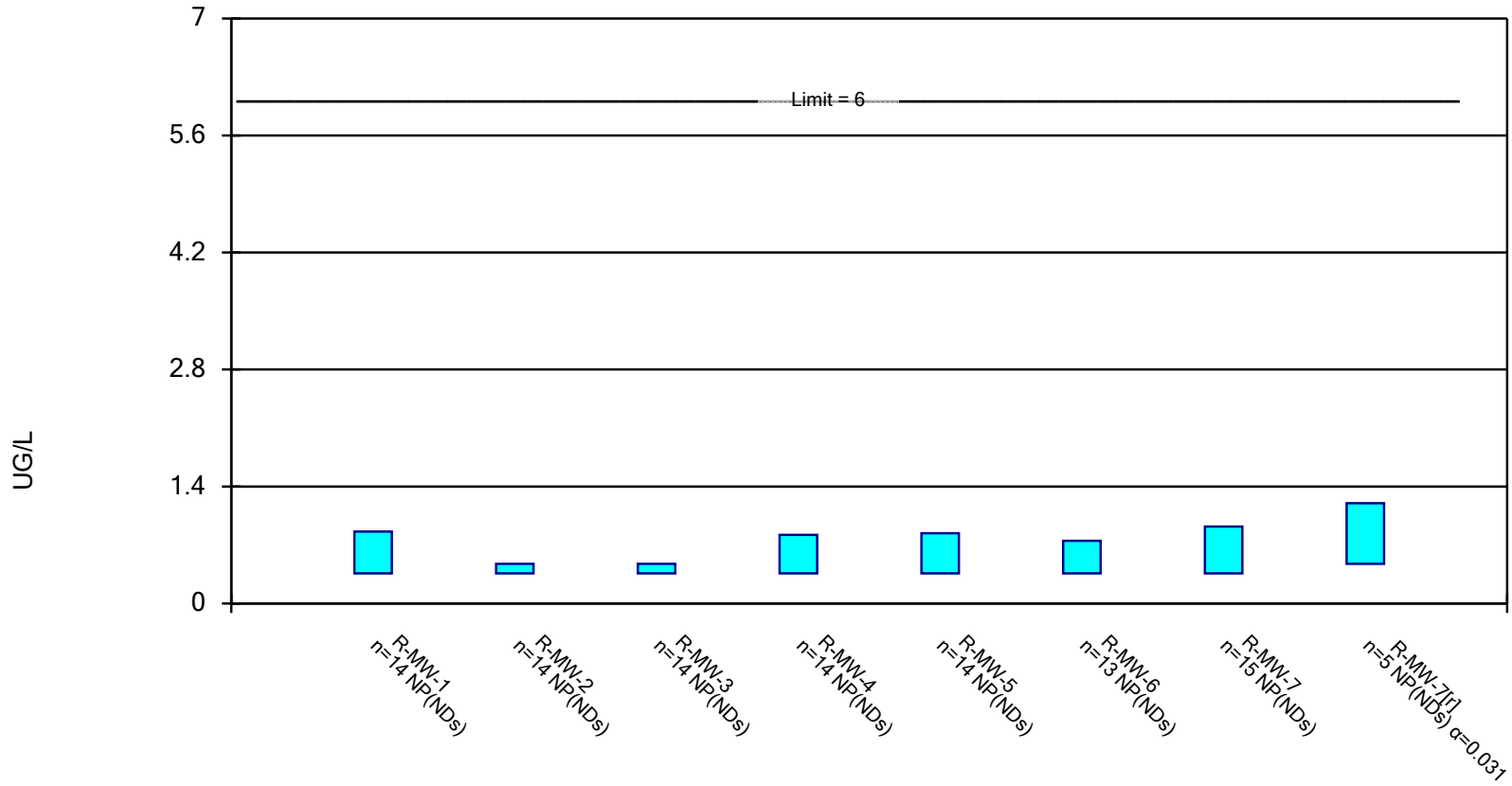


Constituent: CHROMIUM, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.

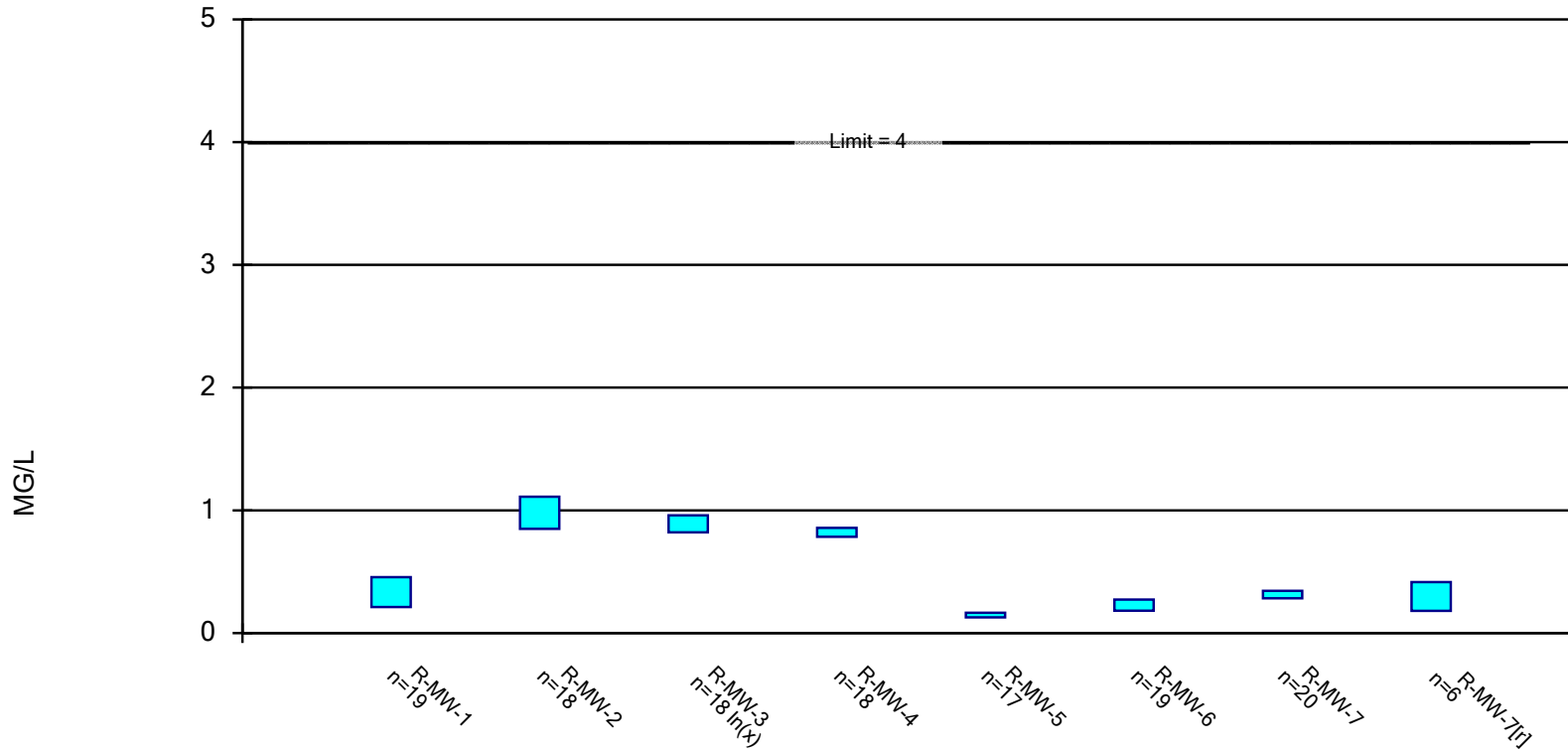


Constituent: COBALT, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

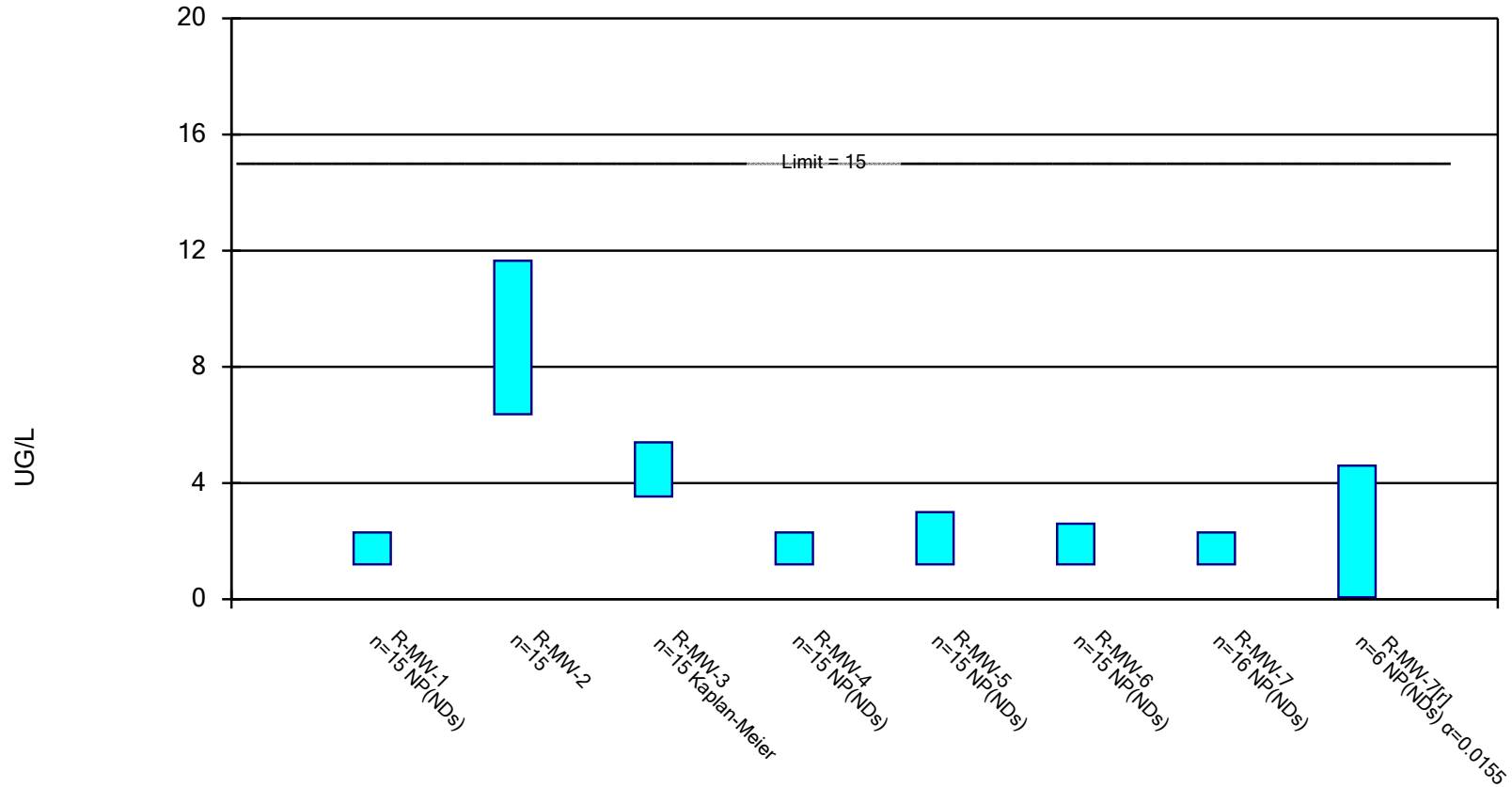


Constituent: FLUORIDE, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

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 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

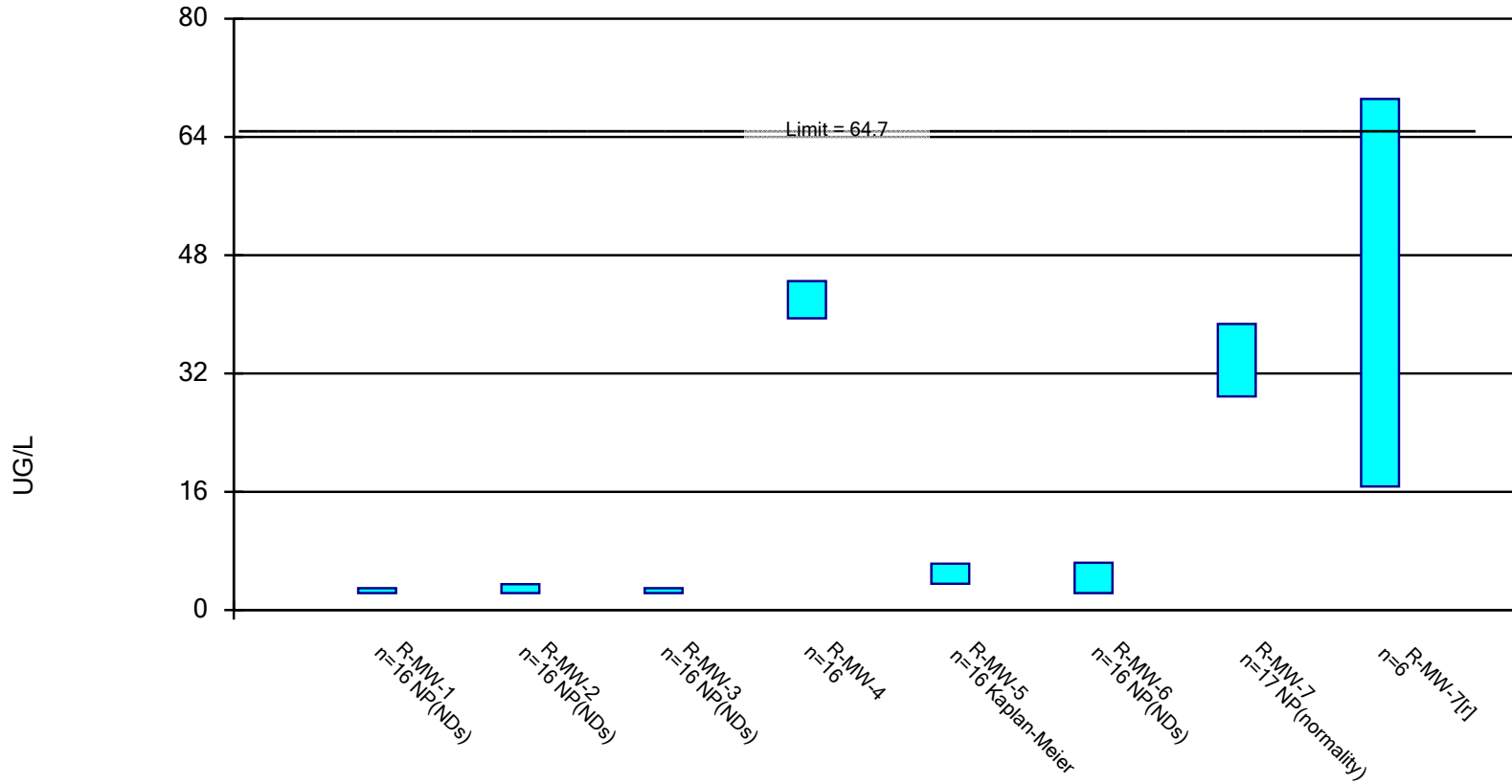


Constituent: LEAD, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval

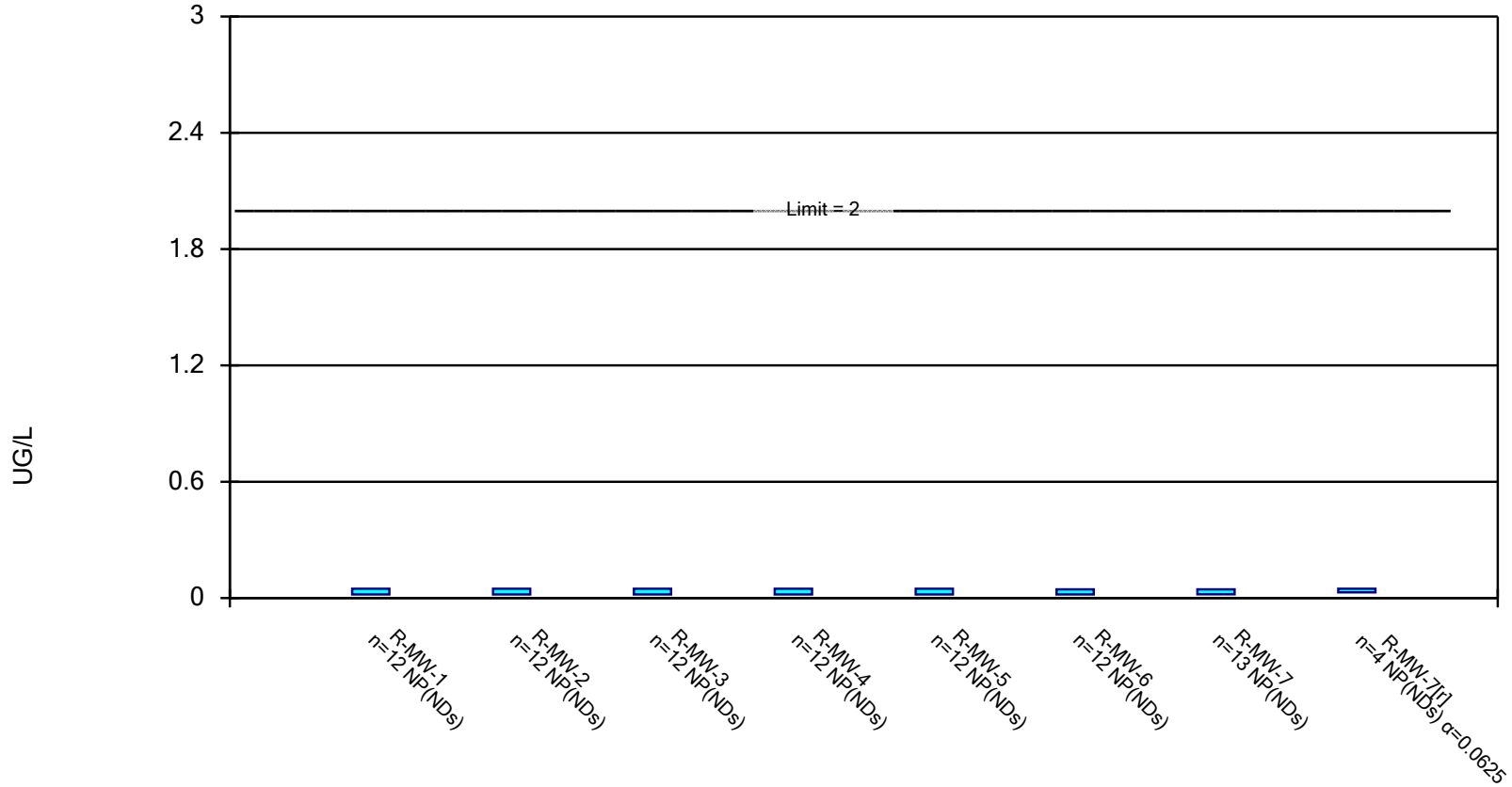
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: LITHIUM, TOTAL Analysis Run 8/30/2021 3:58 PM 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 except as noted.

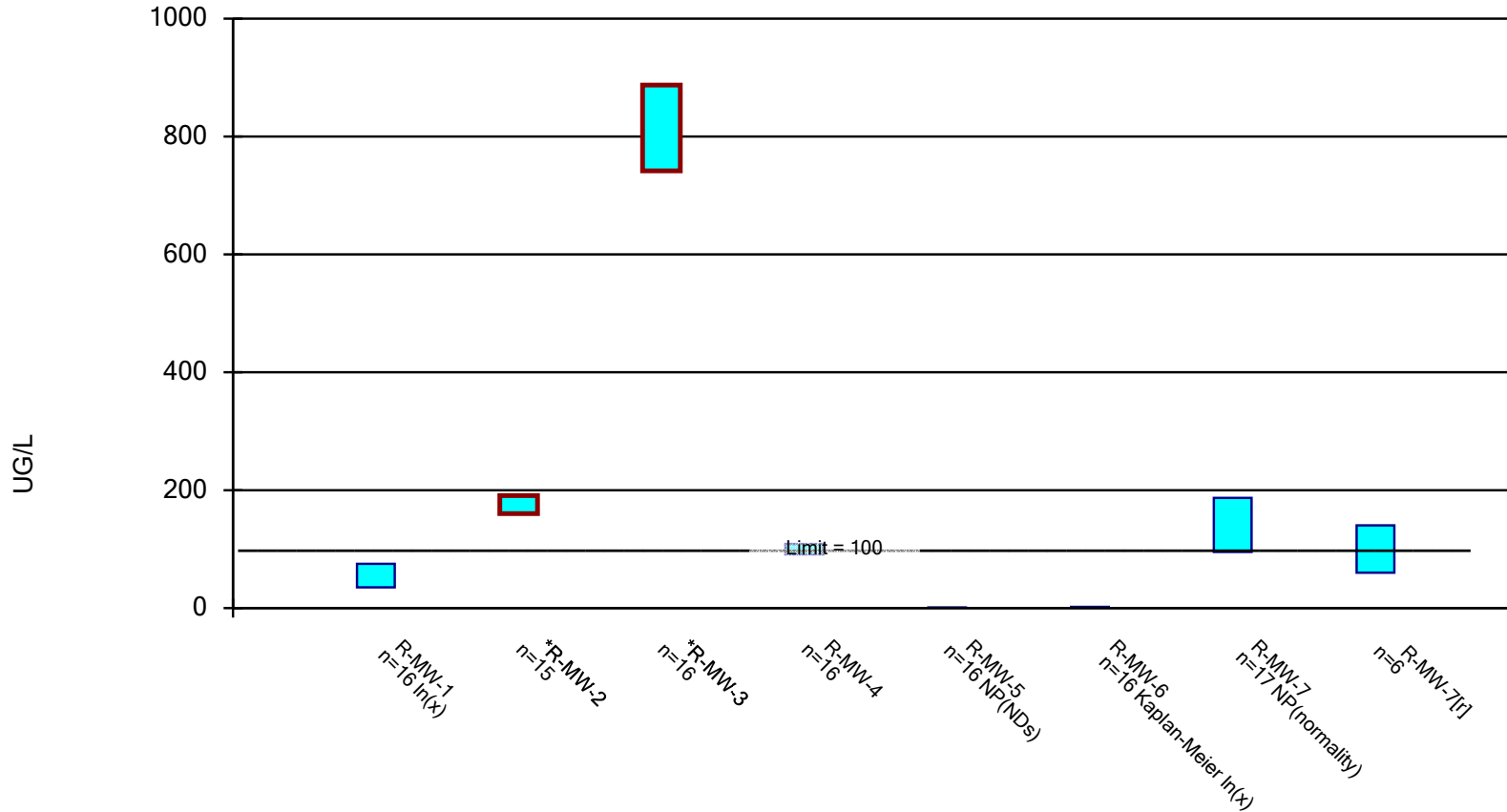


Constituent: MERCURY, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

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.

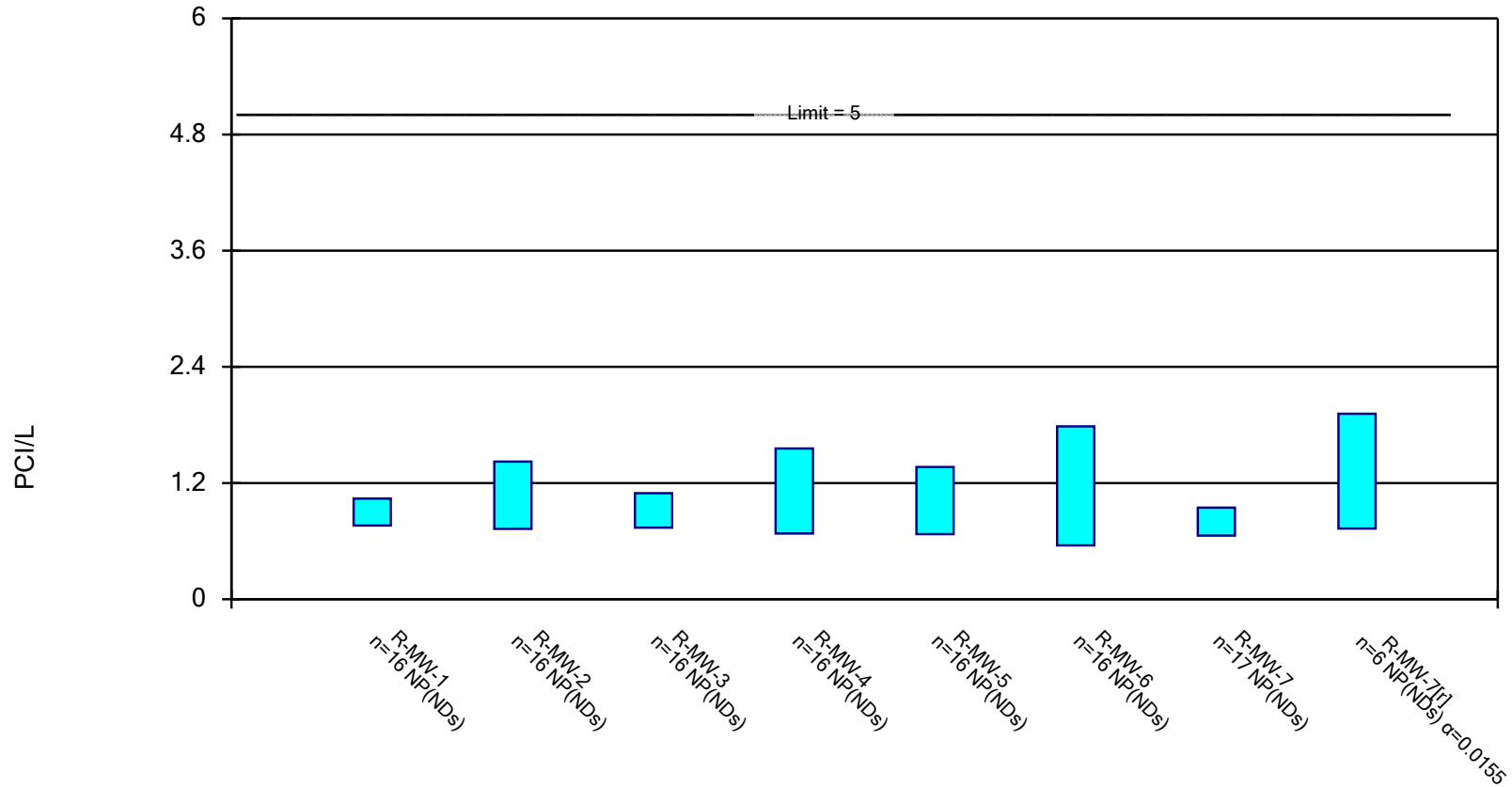


Constituent: MOLYBDENUM, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.

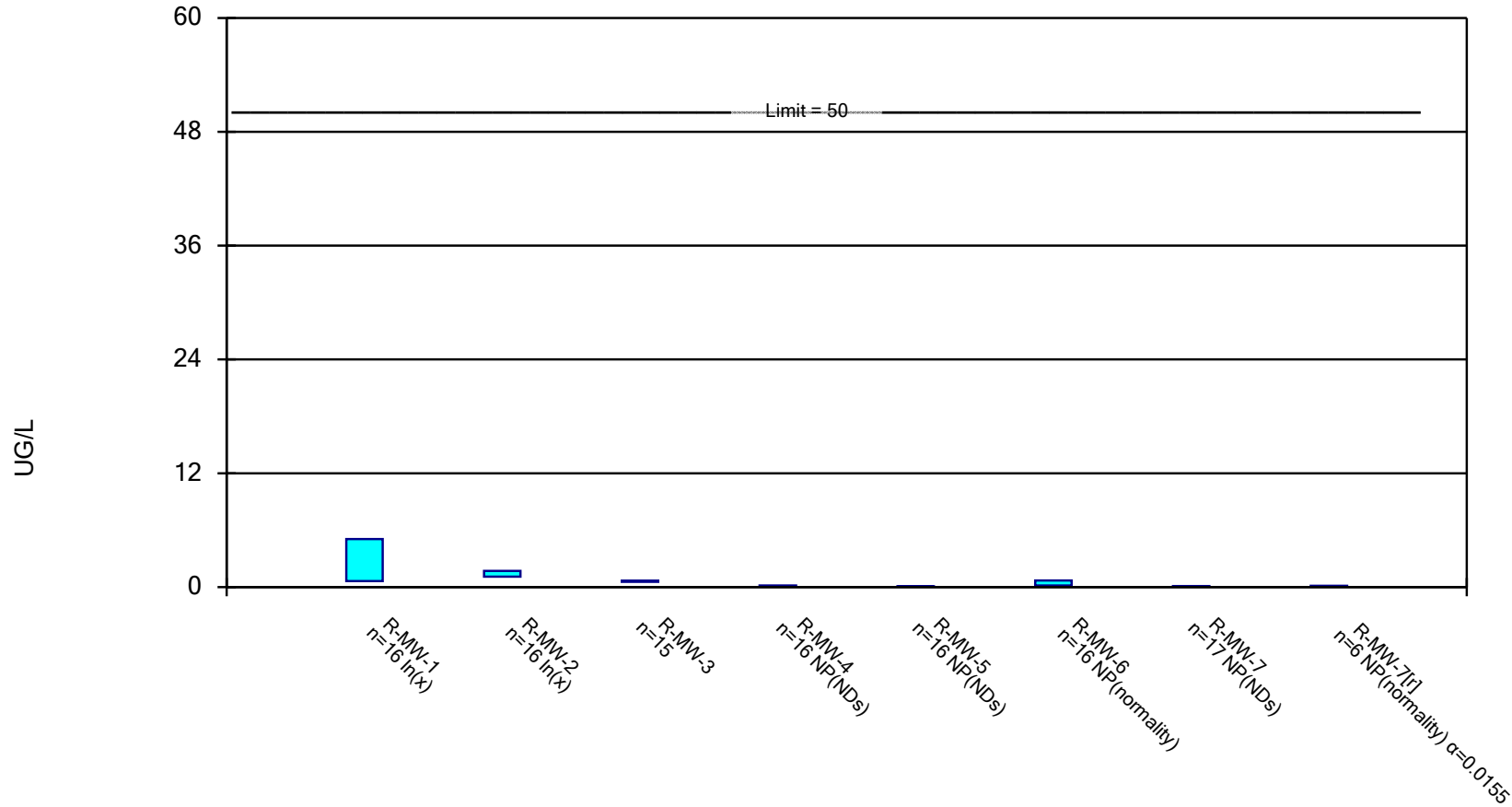


Constituent: RADIUM [226 + 228] Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

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 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

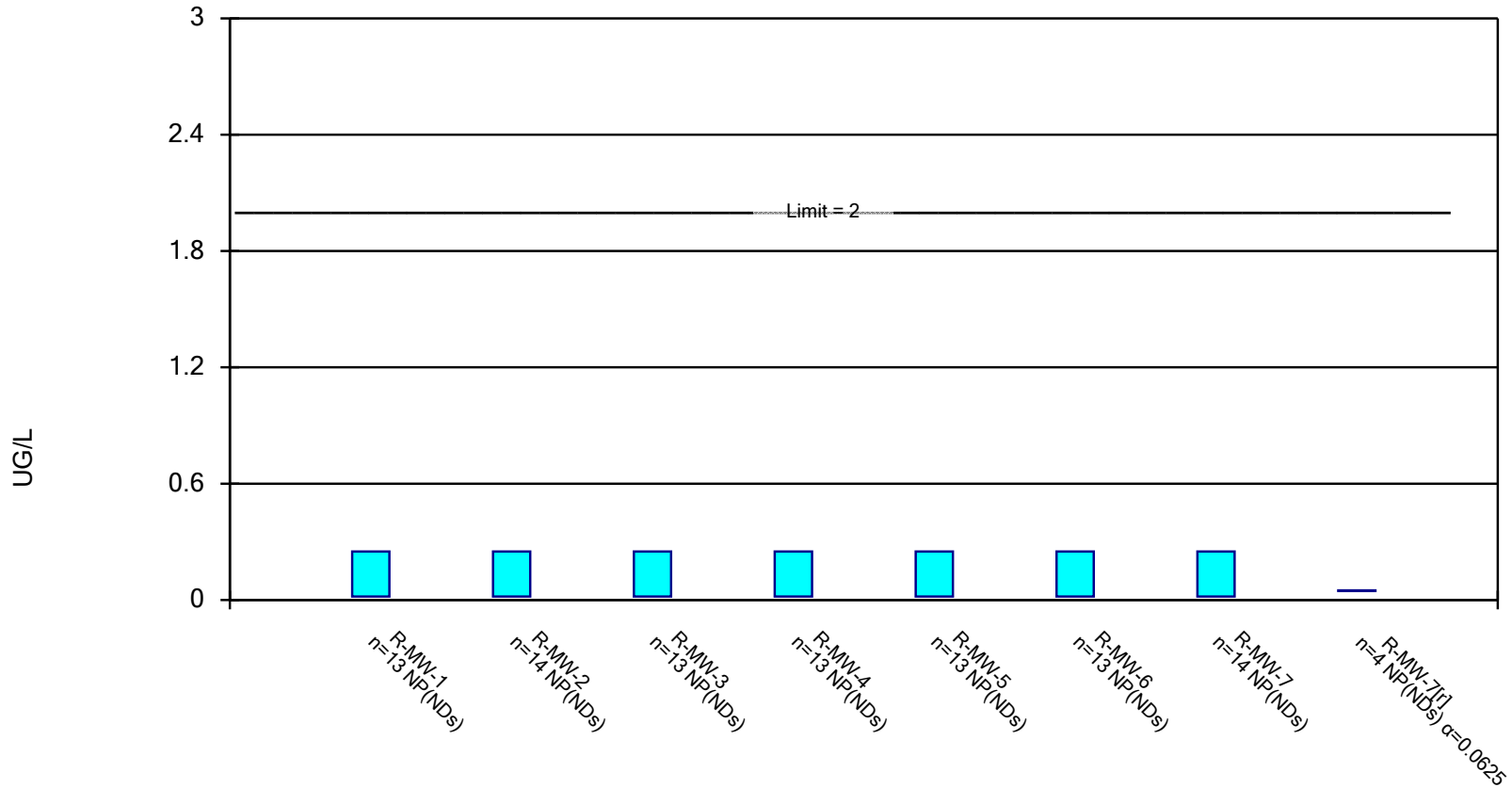


Constituent: SELENIUM, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: THALLIUM, TOTAL Analysis Run 8/30/2021 3:58 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 8/30/2021, 3:59 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	0.7996	0.3335	6	No	16	18.75	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-2	5.055	3.595	6	No	16	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-3	0.119	0.04537	6	No	16	37.5	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-4	0.0485	0.0275	6	No	15	80	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-5	0.0485	0.0275	6	No	15	93.33	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-6	0.14	0.029	6	No	16	62.5	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-7	0.15	0.0275	6	No	17	76.47	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-7[r]	0.18	0.039	6	No	6	66.67	No	0.0155	NP (NDs)
ARSENIC, TOTAL (UG/L)	R-MW-1	13.31	7.373	30	No	16	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-2	240.3	218.1	30	Yes	16	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-3	76.05	45.1	30	Yes	16	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-4	10.3	6.4	30	No	16	0	No	0.01	NP (normality)
ARSENIC, TOTAL (UG/L)	R-MW-5	4.347	3.053	30	No	16	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-6	1.148	0.1882	30	No	14	21.43	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-7	96.6	35.3	30	Yes	17	0	No	0.01	NP (normality)
ARSENIC, TOTAL (UG/L)	R-MW-7[r]	113.3	-5.557	30	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-1	42.2	15.5	2000	No	16	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-2	17	9.1	2000	No	16	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-3	17.75	13.8	2000	No	16	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-4	285.7	259.8	2000	No	16	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-5	397	367	2000	No	15	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-6	185.3	120.9	2000	No	15	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-7	307	213	2000	No	17	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-7[r]	240.4	138.9	2000	No	6	0	No	0.01	Param.
BERYLLIUM, TOTAL (UG/L)	R-MW-1	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-2	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-3	0.245	0.08	4	No	13	92.31	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-4	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-5	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-6	0.245	0.08	4	No	13	92.31	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-7	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-7[r]	0.245	0.125	4	No	4	100	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-1	0.052	0.009	5	No	15	73.33	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-2	0.29	0.0145	5	No	15	20	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	R-MW-3	0.41	0.009	5	No	15	53.33	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-4	0.048	0.009	5	No	15	73.33	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-5	0.028	0.009	5	No	15	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-6	0.028	0.009	5	No	15	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-7	0.053	0.0145	5	No	16	75	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-7[r]	0.076	0.0165	5	No	6	66.67	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-1	0.5	0.039	100	No	14	57.14	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-2	0.8117	0.2777	100	No	14	28.57	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-3	1.09	0.291	100	No	14	28.57	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-4	0.5797	0.1474	100	No	14	35.71	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-5	0.5549	0.145	100	No	14	28.57	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-6	0.6	0.039	100	No	14	64.29	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-7	0.3894	0.1228	100	No	15	40	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-7[r]	0.264	0.171	100	No	5	40	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-MW-1	0.86	0.36	6	No	14	85.71	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-2	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 8/30/2021, 3:59 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
COBALT, TOTAL (UG/L)	R-MW-3	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-4	0.82	0.36	6	No	14	78.57	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-5	0.84	0.36	6	No	14	85.71	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-6	0.75	0.36	6	No	13	92.31	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-7	0.92	0.36	6	No	15	80	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-7[r]	1.2	0.475	6	No	5	60	No	0.031	NP (NDs)
FLUORIDE, TOTAL (MG/L)	R-MW-1	0.4555	0.2116	4	No	19	5.263	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-2	1.111	0.8486	4	No	18	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-3	0.9589	0.8212	4	No	18	0	ln(x)	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-4	0.8571	0.784	4	No	18	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-5	0.1657	0.1278	4	No	17	5.882	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-6	0.2728	0.1824	4	No	19	5.263	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-7	0.3445	0.2835	4	No	20	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-7[r]	0.4154	0.1813	4	No	6	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-1	2.3	1.2	15	No	15	93.33	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-2	11.65	6.368	15	No	15	6.667	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-3	5.399	3.534	15	No	15	20	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-4	2.3	1.2	15	No	15	93.33	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-5	3	1.2	15	No	15	80	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-6	2.6	1.2	15	No	15	80	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-7	2.3	1.2	15	No	16	87.5	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-7[r]	4.6	0.065	15	No	6	83.33	No	0.0155	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-1	2.95	2.3	64.7	No	16	100	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-2	3.5	2.3	64.7	No	16	87.5	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-3	2.95	2.3	64.7	No	16	93.75	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-4	44.51	39.47	64.7	No	16	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-MW-5	6.278	3.551	64.7	No	16	50	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-MW-6	6.4	2.3	64.7	No	16	68.75	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-7	38.7	28.9	64.7	No	17	0	No	0.01	NP (normality)
LITHIUM, TOTAL (UG/L)	R-MW-7[r]	69.15	16.72	64.7	No	6	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	R-MW-1	0.048	0.0185	2	No	12	91.67	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-2	0.048	0.0185	2	No	12	91.67	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-3	0.048	0.0185	2	No	12	91.67	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-4	0.048	0.0185	2	No	12	91.67	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-5	0.048	0.0185	2	No	12	91.67	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-6	0.045	0.0185	2	No	12	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-7	0.045	0.0195	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-7[r]	0.048	0.029	2	No	4	100	No	0.0625	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-MW-1	74.94	35.19	100	No	16	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-2	190.8	160.3	100	Yes	15	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-3	887.4	741.8	100	Yes	16	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-4	108.8	91.05	100	No	16	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-5	1.1	0.26	100	No	16	75	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-MW-6	2.019	0.7286	100	No	16	43.75	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-7	187	95.2	100	No	17	0	No	0.01	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	R-MW-7[r]	140.4	59.94	100	No	6	0	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	R-MW-1	1.04	0.7615	5	No	16	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-2	1.421	0.727	5	No	16	93.75	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-3	1.094	0.7395	5	No	16	93.75	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-4	1.556	0.6785	5	No	16	81.25	No	0.01	NP (NDs)

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 8/30/2021, 3:59 PM

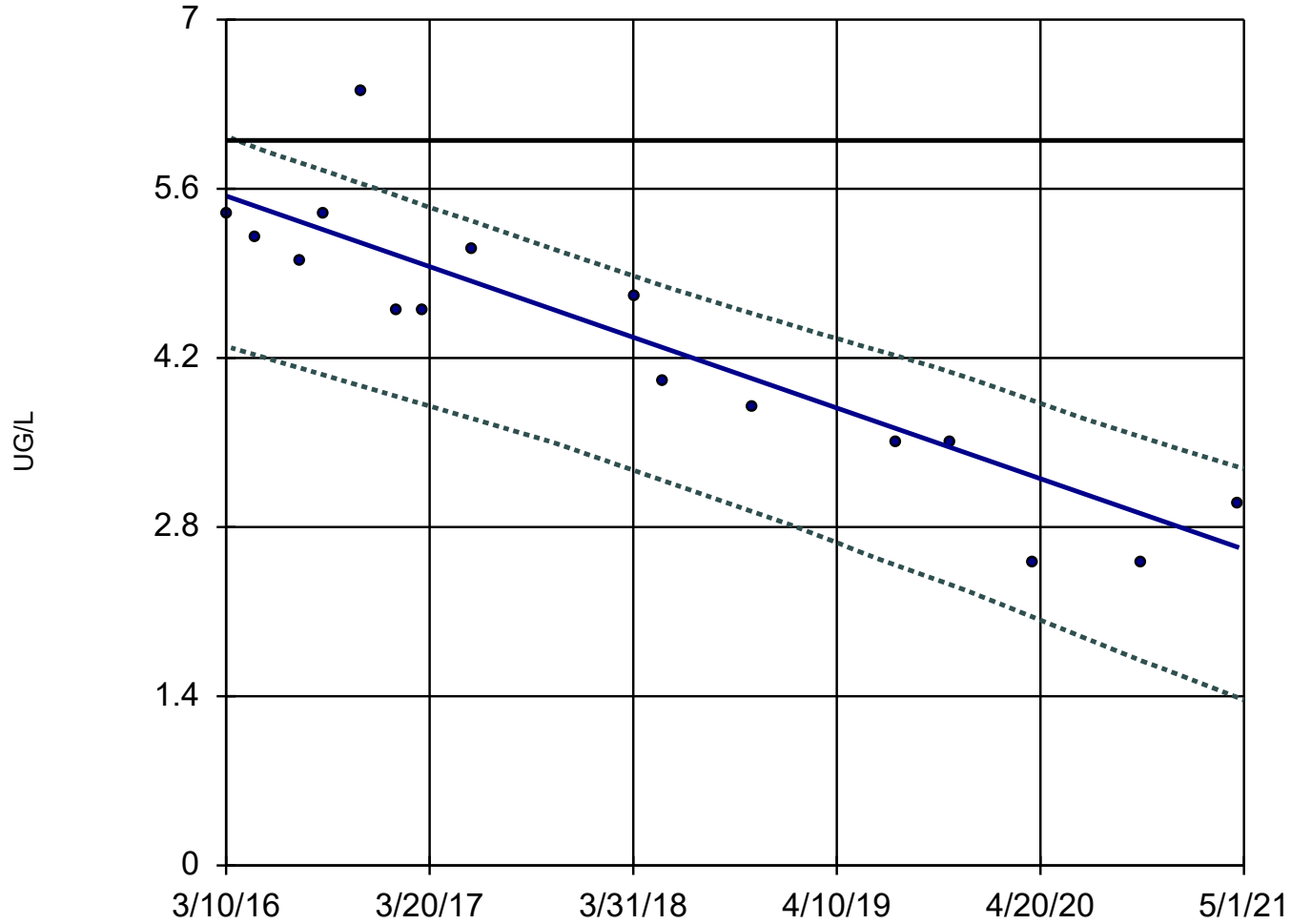
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
RADIUM [226 + 228] (PCI/L)	R-MW-5	1.366	0.672	5	No	16	81.25	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-6	1.785	0.556	5	No	16	68.75	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-7	0.9465	0.657	5	No	17	88.24	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-7[r]	1.916	0.7305	5	No	6	66.67	No	0.0155	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-1	5.061	0.6357	50	No	16	12.5	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-2	1.698	1.102	50	No	16	0	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-3	0.6864	0.5629	50	No	15	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-4	0.17	0.09	50	No	16	56.25	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-5	0.09	0.0425	50	No	16	100	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-6	0.7	0.17	50	No	16	18.75	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	R-MW-7	0.1	0.06	50	No	17	76.47	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-7[r]	0.13	0.09	50	No	6	50	No	0.0155	NP (normality)
THALLIUM, TOTAL (UG/L)	R-MW-1	0.25	0.018	2	No	13	92.31	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-2	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-3	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-4	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-5	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-6	0.25	0.018	2	No	13	92.31	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-7	0.25	0.018	2	No	14	92.86	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-7[r]	0.0495	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-MW-2



n = 16

Slope = -0.5685
units per year.

Mann-Kendall
statistic = -90
critical = -53

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

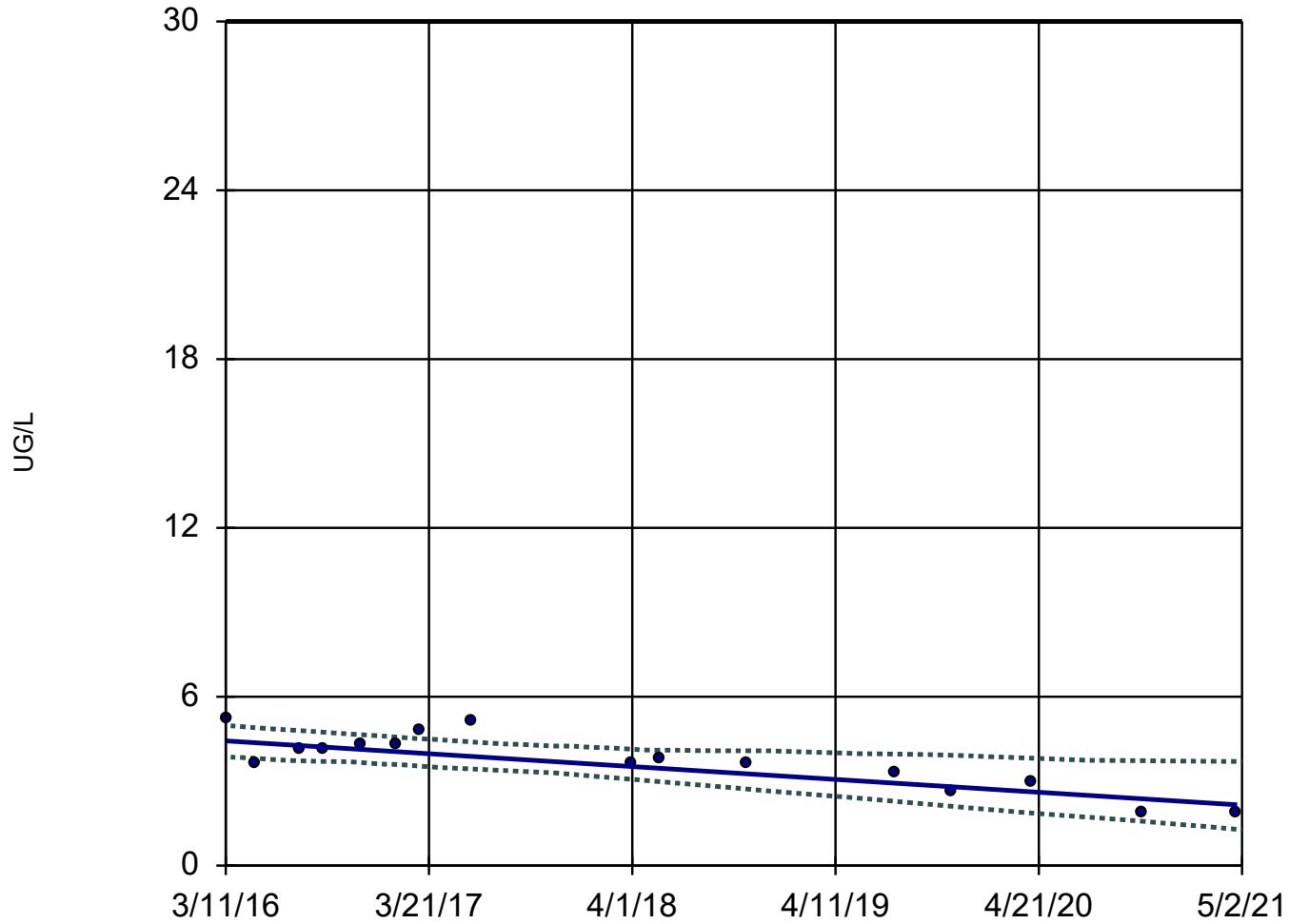
GWPS = 6.

Constituent: ANTIMONY, TOTAL Analysis Run 8/30/2021 3:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-5



n = 16

Slope = -0.444
units per year.

Mann-Kendall
statistic = -70
critical = -53

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

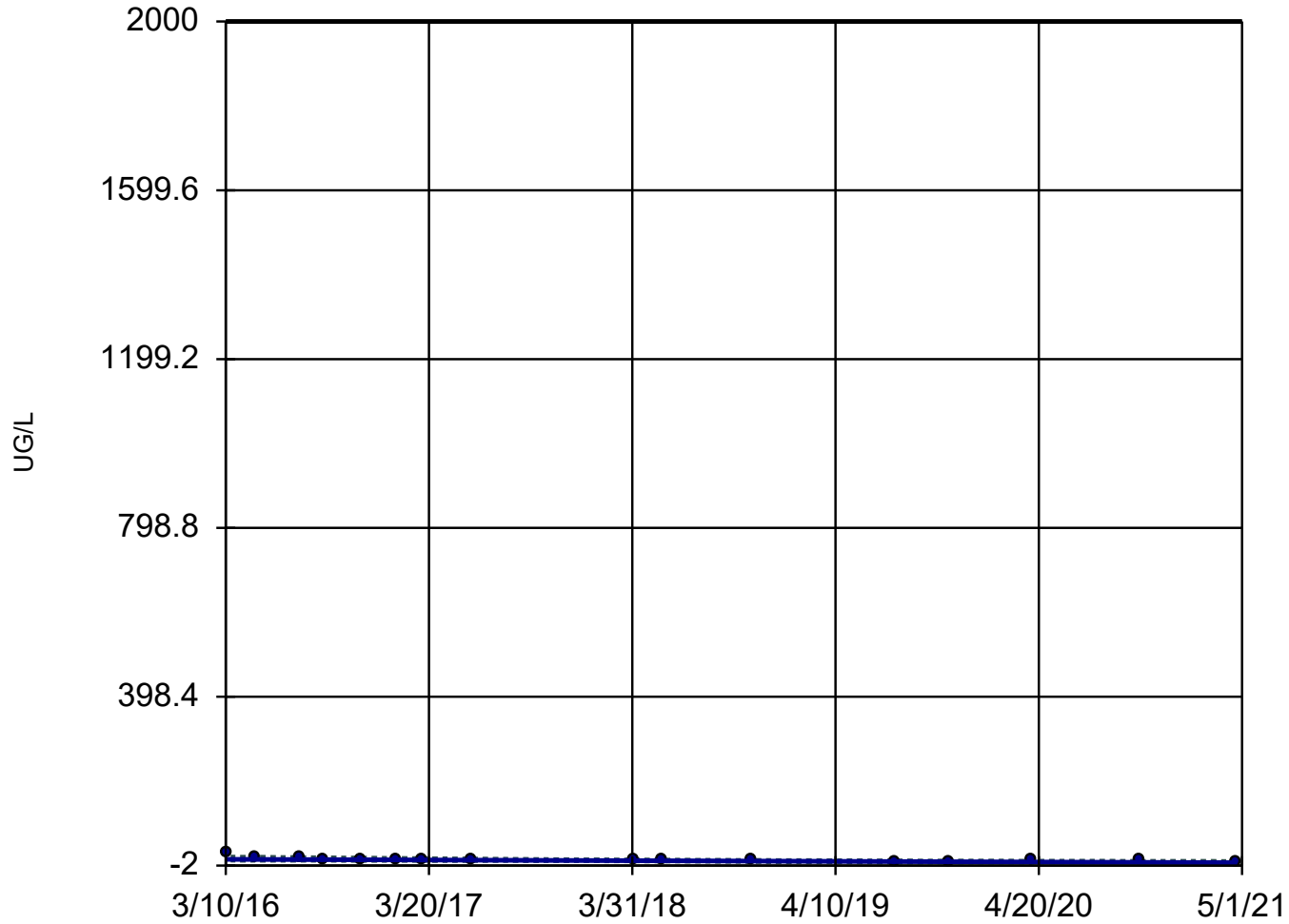
GWPS = 30.

Constituent: ARSENIC, TOTAL Analysis Run 8/30/2021 3:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-2



n = 16

Slope = -1.588
units per year.

Mann-Kendall
statistic = -97
critical = -53

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

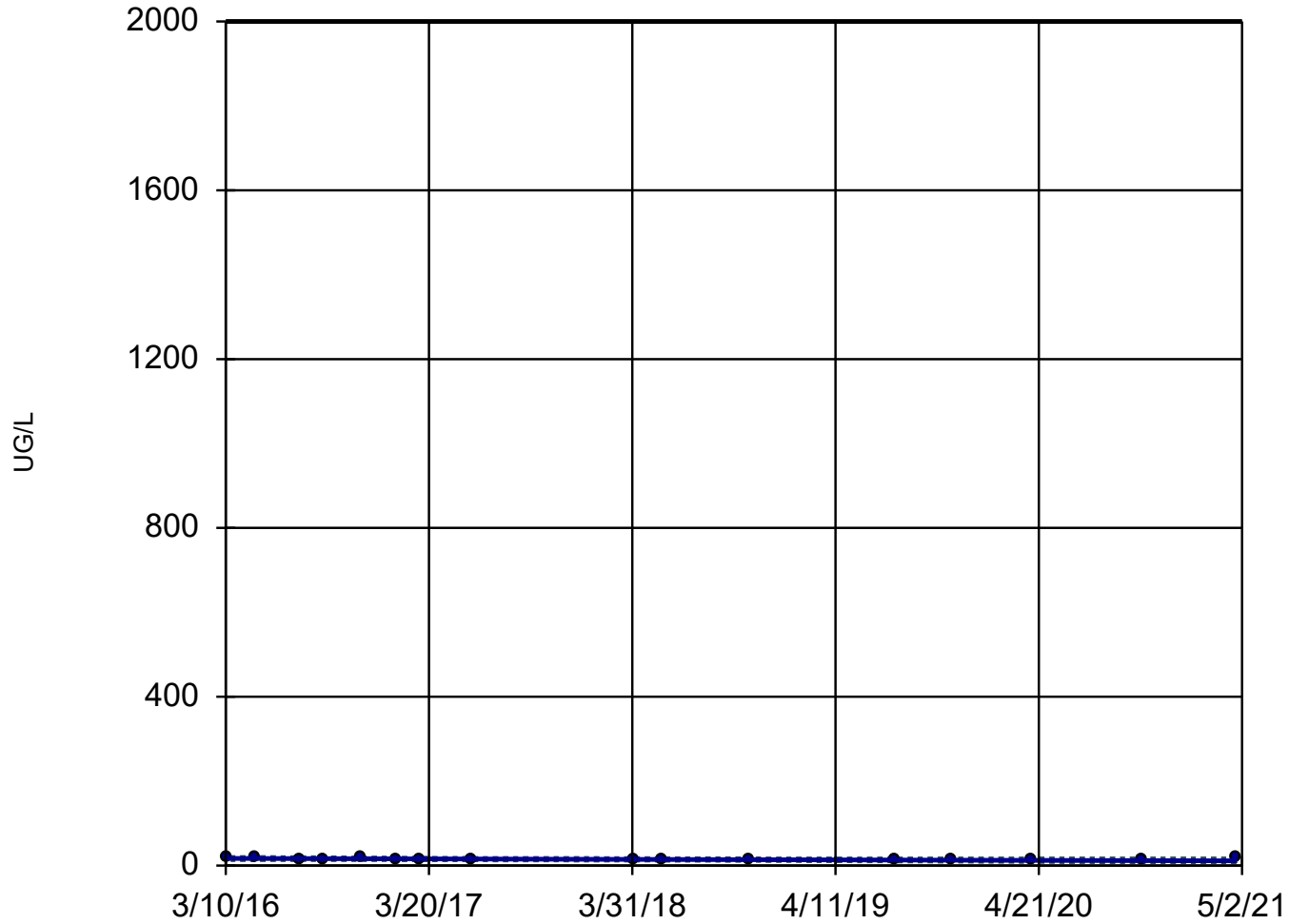
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 8/30/2021 3:47 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

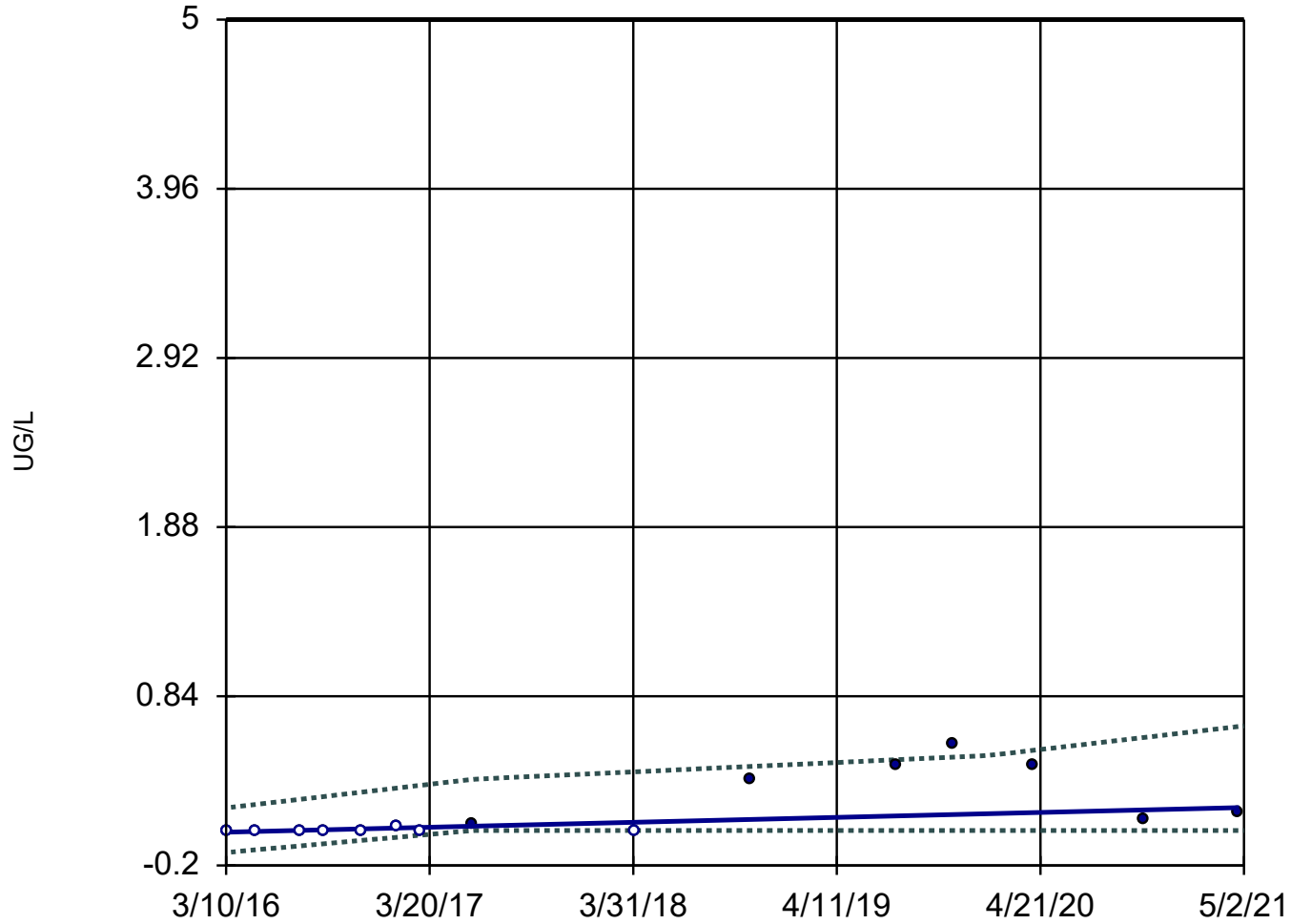
R-MW-3



n = 16
Slope = -1.094 units per year.
Mann-Kendall statistic = -54 critical = -53
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).
GWPS = 2000.

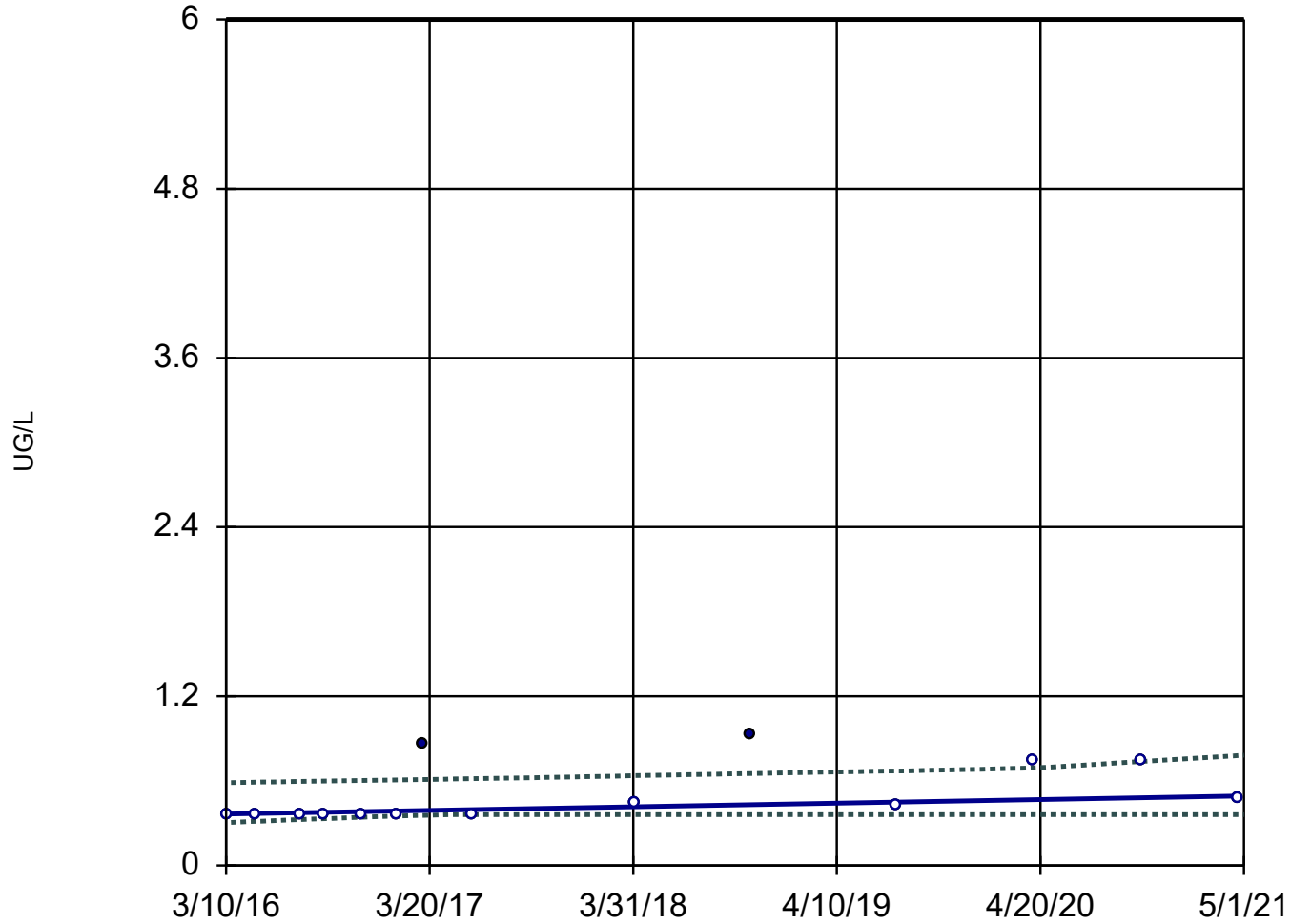
Sen's Slope and 95% Confidence Band

R-MW-3



Sen's Slope and 95% Confidence Band

R-MW-1



n = 14

Slope = 0.02487
units per year.

Mann-Kendall
statistic = 49
critical = 44

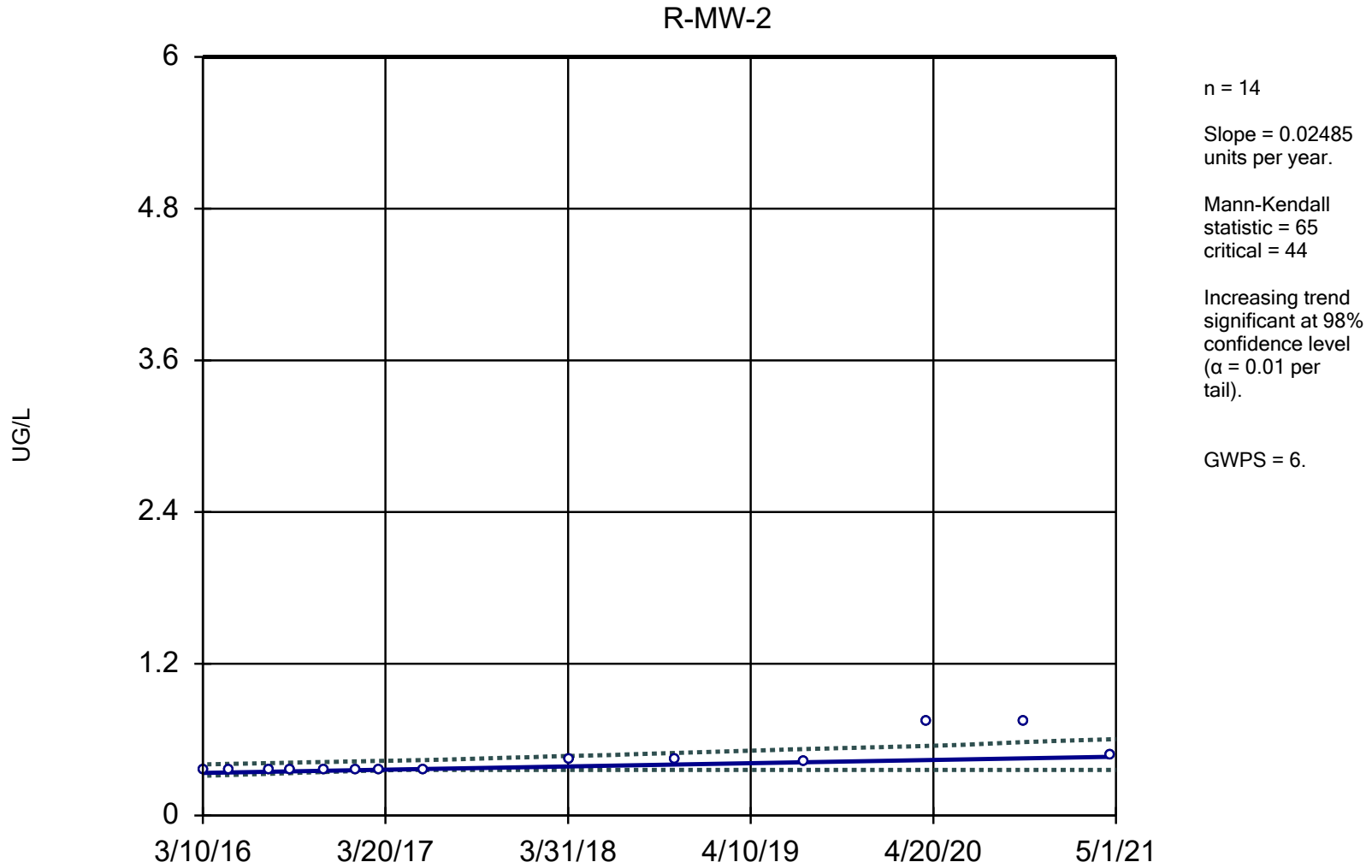
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 8/30/2021 3:47 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

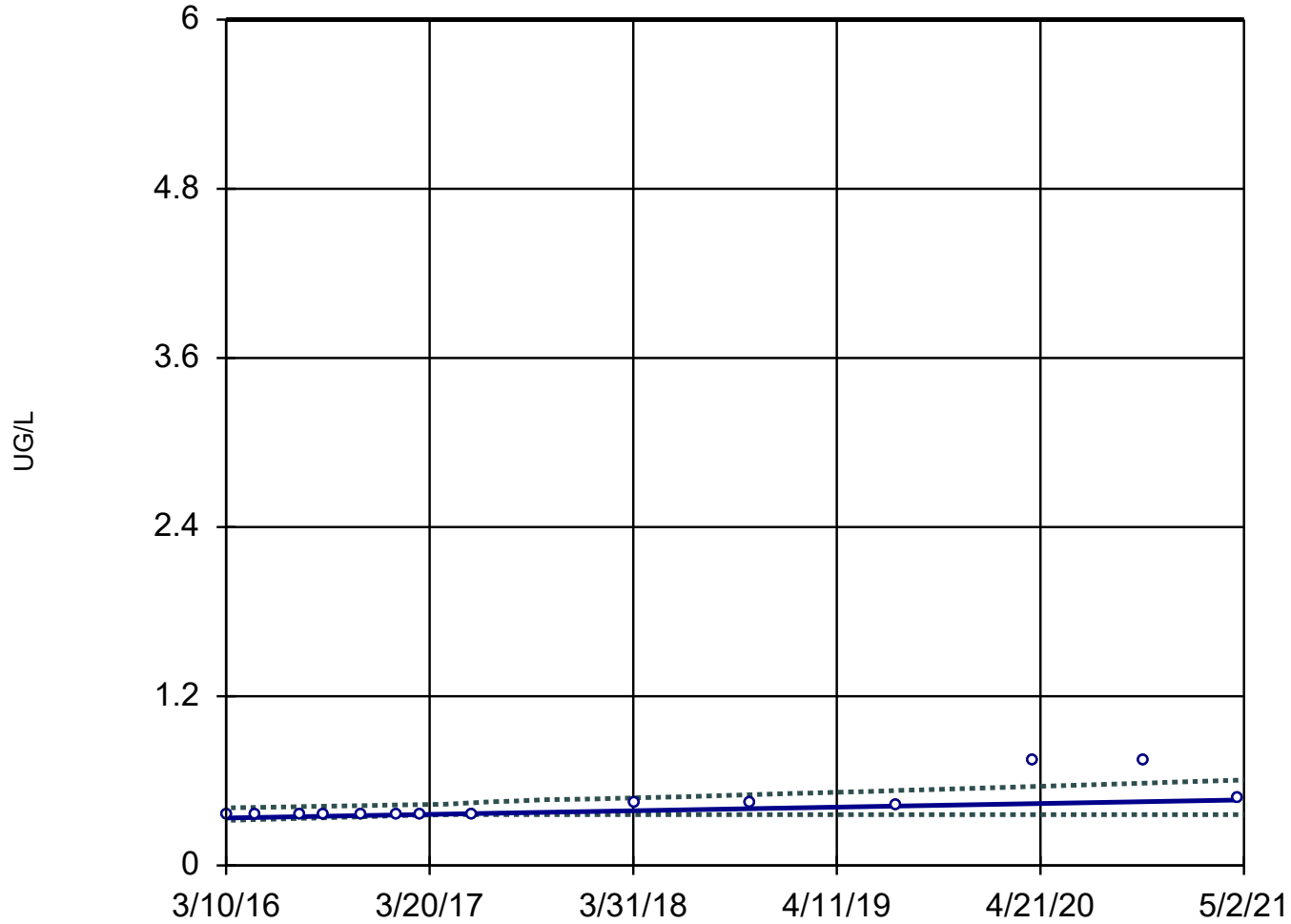


Constituent: COBALT, TOTAL Analysis Run 8/30/2021 3:47 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-3



n = 14

Slope = 0.02484
units per year.

Mann-Kendall
statistic = 65
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

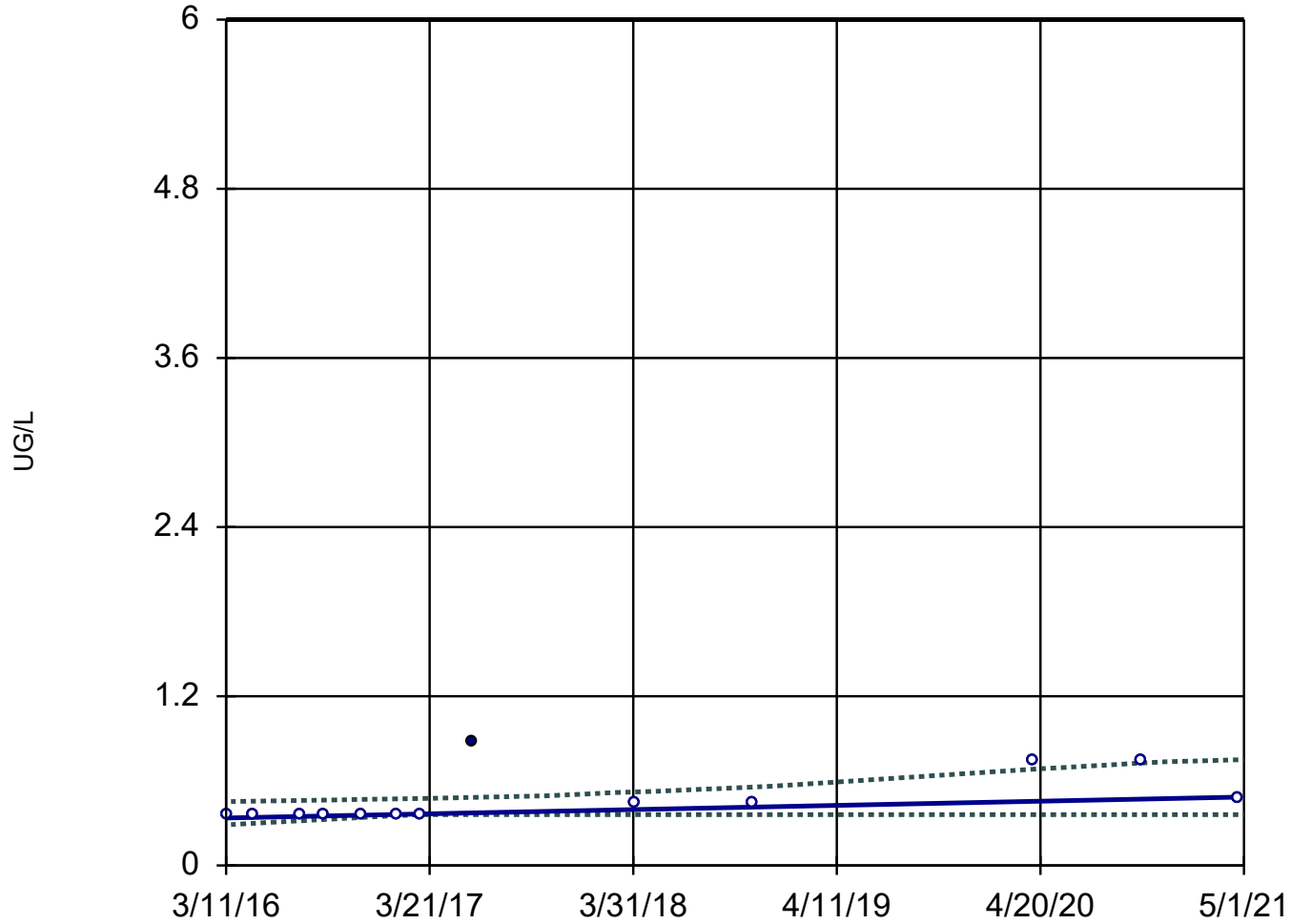
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 8/30/2021 3:47 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

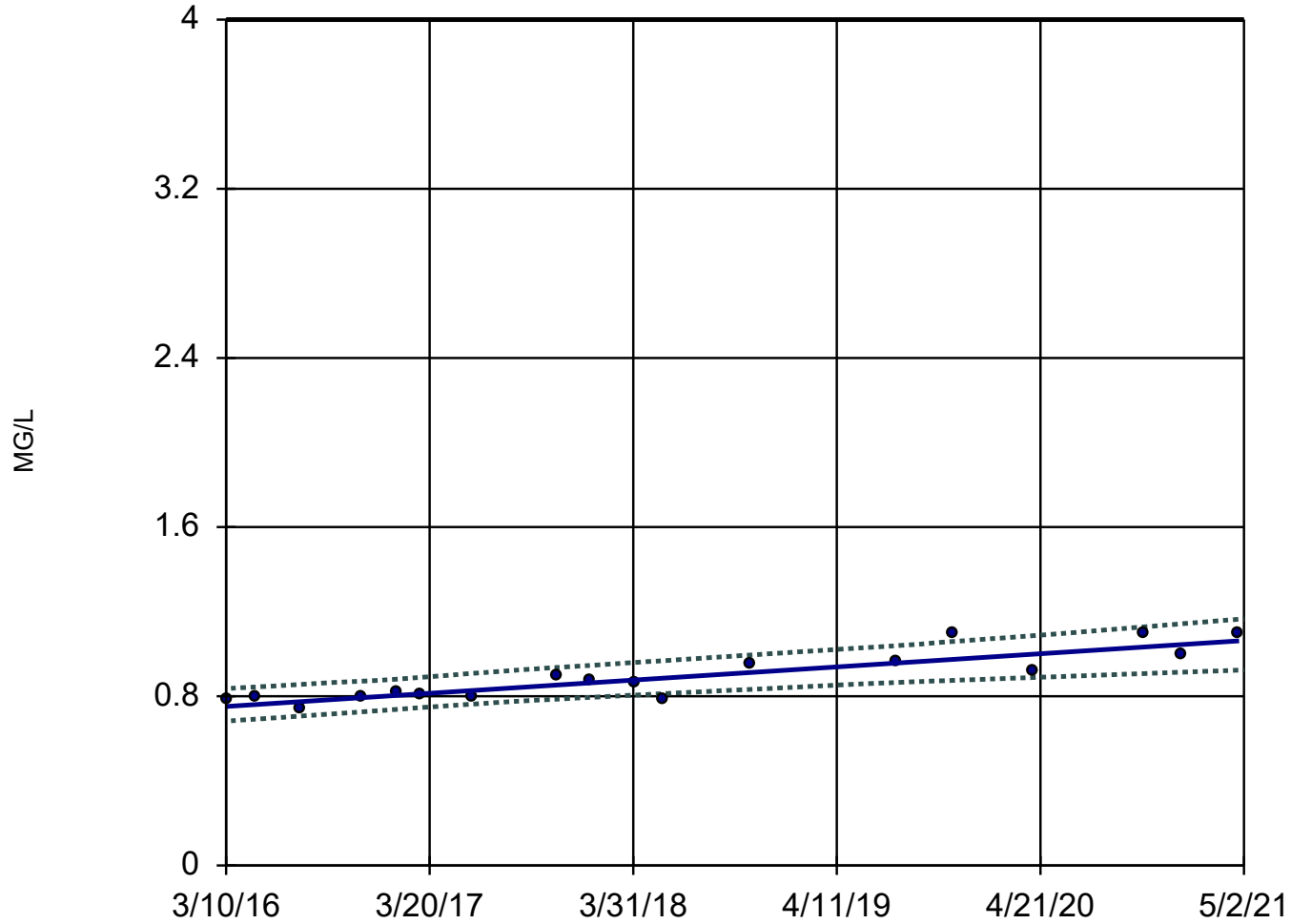
Sen's Slope and 95% Confidence Band

R-MW-6

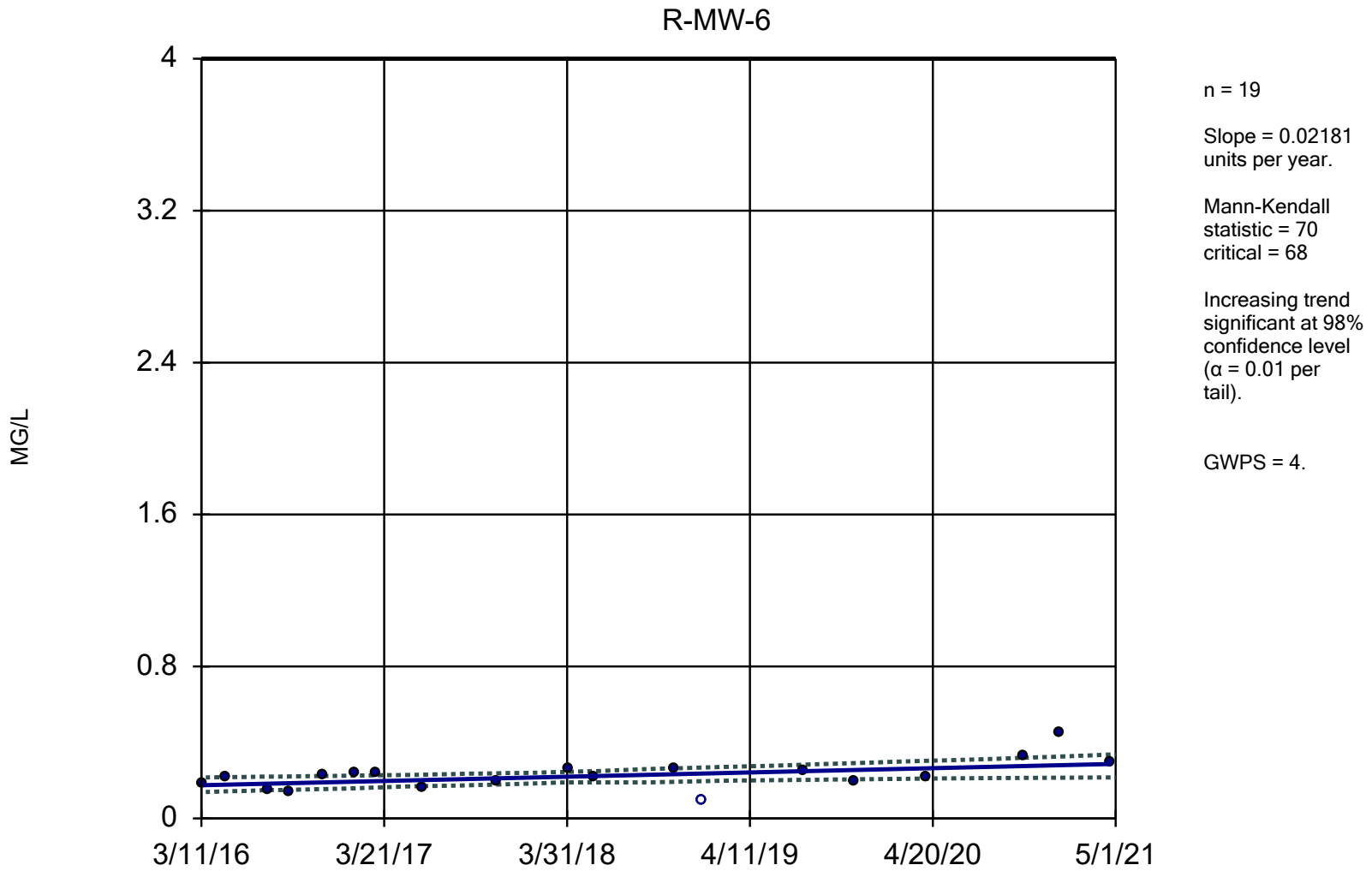


Sen's Slope and 95% Confidence Band

R-MW-3



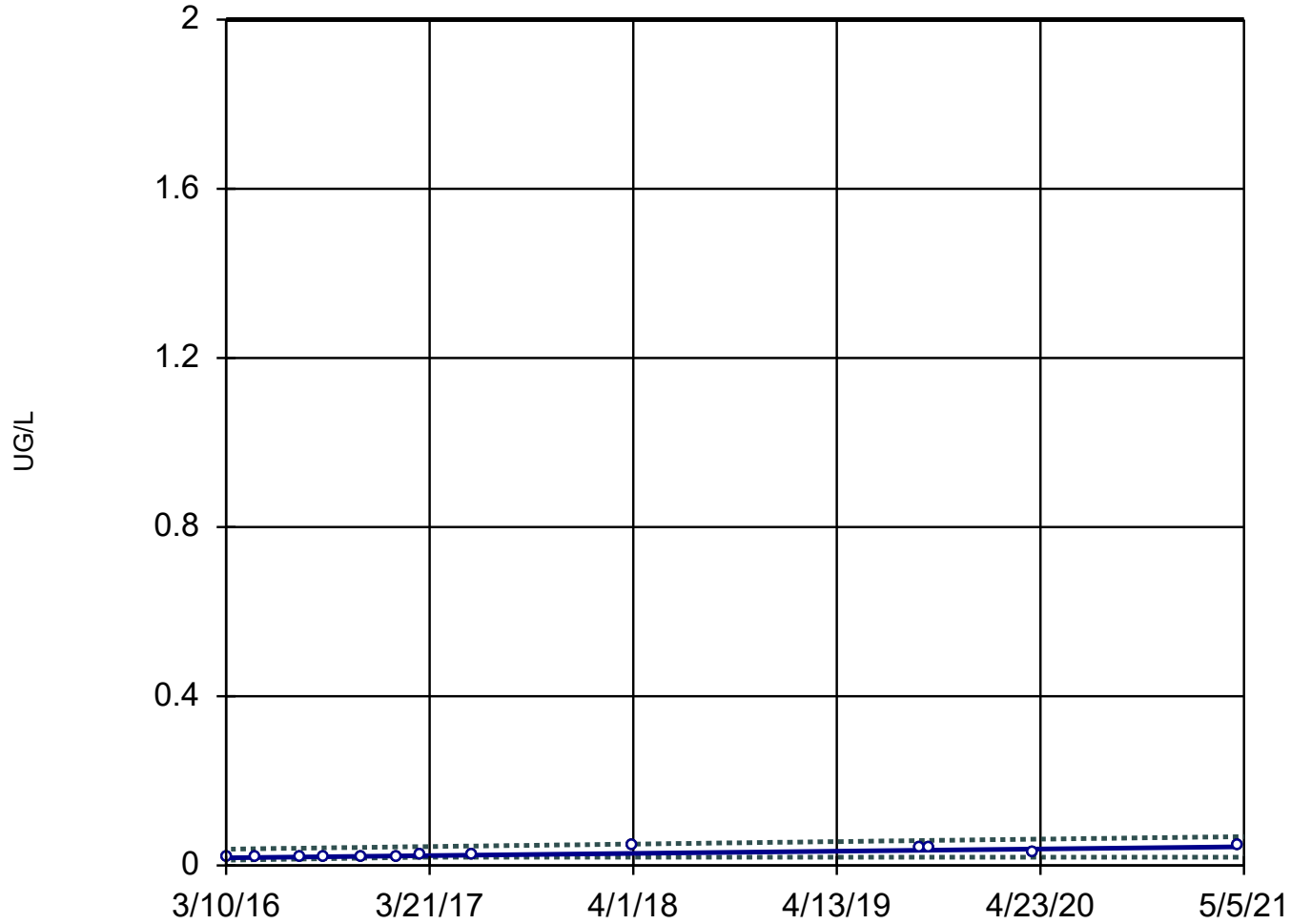
Sen's Slope and 95% Confidence Band



Constituent: FLUORIDE, TOTAL Analysis Run 8/30/2021 3:47 PM View: Assessment Monitoring
Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

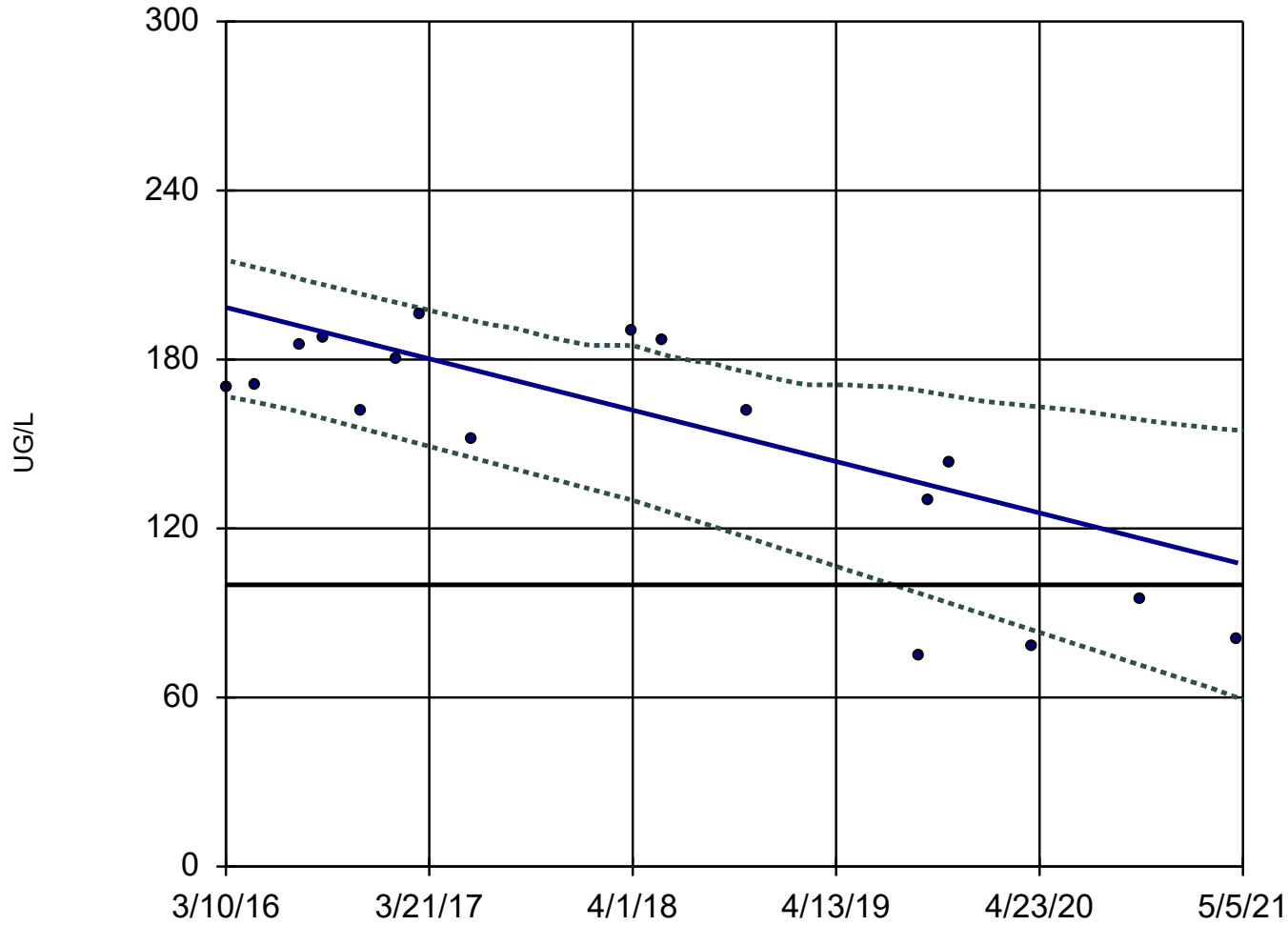
R-MW-7



n = 13
Slope = 0.005108
units per year.
Mann-Kendall
statistic = 51
critical = 39
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).
GWPS = 2.

Sen's Slope and 95% Confidence Band

R-MW-7



n = 17

Slope = -17.69
units per year.

Mann-Kendall
statistic = -61
critical = -58

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

GWPS = 100.

Constituent: MOLYBDENUM, TOTAL Analysis Run 8/30/2021 3:48 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 8/30/2021, 3:52 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>
ANTIMONY, TOTAL (UG/L)	R-MW-1	-0.09241	-28	-53	No	16	18.75	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-2	-0.5685	-90	-53	Yes	16	0	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-3	-0.00...	-13	-53	No	16	37.5	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-4	0.003782	43	48	No	15	80	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-5	0.004002	48	48	No	15	93.33	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-6	9.0e-11	2	53	No	16	62.5	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-7	0.004152	25	58	No	17	76.47	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-7[r]	-0.06176	-2	-13	No	6	66.67	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-1	-0.6064	-14	-53	No	16	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-2	-6.579	-50	-53	No	16	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-3	2.084	6	53	No	16	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-4	0.2735	18	53	No	16	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-5	-0.444	-70	-53	Yes	16	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-6	0.1771	15	44	No	14	21.43	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-7	0.1502	2	58	No	17	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-7[r]	56.84	11	13	No	6	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-1	1.527	33	53	No	16	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-2	-1.588	-97	-53	Yes	16	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-3	-1.094	-54	-53	Yes	16	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-4	0.9627	7	53	No	16	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-5	-6.557	-40	-48	No	15	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-6	2.182	8	48	No	15	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-7	-23.71	-79	-58	Yes	17	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-7[r]	-49.35	-7	-13	No	6	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-1	0	-5	-39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-2	0	-5	-39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-3	0	3	39	No	13	92.31	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-4	0	-5	-39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-5	0	-5	-39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-6	0	3	39	No	13	92.31	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-7	0	-3	-39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-7[r]	0.04387	3	8	No	4	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-1	0.004355	36	48	No	15	73.33	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-2	0.008852	14	48	No	15	20	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-3	0.02954	49	48	Yes	15	53.33	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-4	0.003475	39	48	No	15	73.33	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-5	0.000...	40	48	No	15	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-6	0.000...	40	48	No	15	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-7	0.003425	48	53	No	16	75	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-7[r]	0.002866	2	13	No	6	66.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-1	-0.04906	-19	-44	No	14	57.14	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-2	-0.1272	-31	-44	No	14	28.57	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-3	-0.1805	-29	-44	No	14	28.57	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-4	-0.1079	-34	-44	No	14	35.71	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-5	-0.07157	-29	-44	No	14	28.57	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-6	-0.02331	-20	-44	No	14	64.29	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-7	-0.04205	-17	-48	No	15	40	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-7[r]	0.03879	0	10	No	5	40	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-1	0.02487	49	44	Yes	14	85.71	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-2	0.02485	65	44	Yes	14	100	n/a	n/a	0.02	NP

Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 8/30/2021, 3:52 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
COBALT, TOTAL (UG/L)	R-MW-3	0.02484	65	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-4	0.02593	43	44	No	14	78.57	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-5	0.0185	28	44	No	14	85.71	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-6	0.02902	47	39	Yes	13	92.31	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-7	0.03916	60	48	Yes	15	80	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-7[r]	-0.3624	-9	-10	No	5	60	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-1	0.02584	26	68	No	19	5.263	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-2	0.03467	33	63	No	18	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-3	0.06063	104	63	Yes	18	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-4	0	9	63	No	18	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-5	0.007744	30	58	No	17	5.882	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-6	0.02181	70	68	Yes	19	5.263	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-7	0.002473	9	73	No	20	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-7[r]	0.1564	13	13	No	6	0	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-1	0.1493	41	48	No	15	93.33	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-2	-0.03533	-5	-48	No	15	6.667	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-3	-0.1617	-8	-48	No	15	20	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-4	0.1161	20	48	No	15	93.33	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-5	0.1505	36	48	No	15	80	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-6	0.1386	20	48	No	15	80	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-7	0.1424	36	53	No	16	87.5	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-7[r]	1.141	9	13	No	6	83.33	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-1	0	1	53	No	16	100	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-2	0	16	53	No	16	87.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-3	0	17	53	No	16	93.75	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-4	-1.238	-40	-53	No	16	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-5	0.04973	4	53	No	16	50	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-6	0.1389	15	53	No	16	68.75	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-7	-0.5961	-14	-58	No	17	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-7[r]	-25.5	-9	-13	No	6	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-1	0.00261	25	35	No	12	91.67	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-2	0.00261	25	35	No	12	91.67	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-3	0.002607	25	35	No	12	91.67	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-4	0.002605	25	35	No	12	91.67	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-5	0.002605	25	35	No	12	91.67	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-6	0.002722	30	35	No	12	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-7	0.005108	51	39	Yes	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-7[r]	0.001081	1	8	No	4	100	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-1	-1.868	-6	-53	No	16	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-2	0.908	7	48	No	15	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-3	-5.938	-4	-53	No	16	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-4	0.009451	0	53	No	16	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-5	0.08609	26	53	No	16	75	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-6	0.1221	10	53	No	16	43.75	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-7	-17.69	-61	-58	Yes	17	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-7[r]	2.007	1	13	No	6	0	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-1	0.03629	23	53	No	16	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-2	0.108	40	53	No	16	93.75	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-3	0.02919	32	53	No	16	93.75	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-4	0.03535	26	53	No	16	81.25	n/a	n/a	0.02	NP

Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 8/30/2021, 3:52 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>
RADIUM [226 + 228] (PCI/L)	R-MW-5	0.02211	28	53	No	16	81.25	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-6	0.1557	30	53	No	16	68.75	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-7	0.03794	40	58	No	17	88.24	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-7[r]	-0.1334	-5	-13	No	6	66.67	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-1	-1.345	-91	-53	Yes	16	12.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-2	-0.08306	-26	-53	No	16	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-3	-0.01426	-13	-48	No	15	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-4	0	6	53	No	16	56.25	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-5	0	-26	-53	No	16	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-6	-0.0111	-11	-53	No	16	18.75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-7	0	9	58	No	17	76.47	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-7[r]	-0.0247	-12	-13	No	6	50	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-1	-0.04484	-38	-39	No	13	92.31	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-2	-0.03964	-33	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-3	-0.04177	-30	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-4	-0.04178	-30	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-5	-0.04178	-30	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-6	-0.04484	-38	-39	No	13	92.31	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-7	-0.04073	-43	-44	No	14	92.86	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-7[r]	-0.00...	-3	-8	No	4	100	n/a	n/a	0.02	NP

APPENDIX D

**April 2021 Corrective Action
Statistical Evaluation**

TECHNICAL MEMORANDUM

DATE September 3, 2021 **Project No.** 153-140603

TO Bill Kutosky
Ameren Missouri

CC Susan Knowles, Craig Giesmann, Charlie Henderson

FROM Jeffrey Ingram, Sean Paulsen, Mark Haddock **EMAIL** Jingram@Golder.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 April 2021 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 will document that concentrations are decreasing as modeled.

Phase 1 of Corrective Action was commenced in August 2019, and the substantially installation of the low permeability cover system was completed on December 15, 2020. 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. A total of four (4) sampling events have been completed as a part of the Corrective Action Program at the RIEC. Corrective Action statistical analyses cannot be completed until a minimum of four (4) sampling events have been completed; thus, the statistical evaluation described herein is the first Corrective Action statistical evaluation and is the first event performed since the completion of Phase 1. This analysis uses results from events performed between April 2020 and April 2021, because data collected prior to April 2020 was collected during active conditions at the RCPA, prior to cessation of CCR disposal in the RCPA, and is thus 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 sampling event including beryllium, mercury, and thallium. Because these constituents were not detected during the initial Corrective Action sampling event, they were not re-sampled during the subsequent 2020 semi-annual sampling events in May and October-November 2020. Only two results are available for each of these

constituents, and therefore, confidence intervals could not be calculated. Thus, beryllium, mercury, and thallium were not considered 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. No outliers were identified for Appendix IV results reported since April 2020.

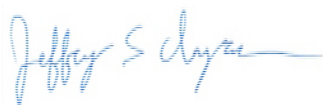
Following the outlier analysis, the second step in the statistical analysis was to calculate confidence intervals and compare those to the GWPS¹. As stated above, the confidence intervals shown in Appendix A are calculated based on results since April 2020. A summary of constituents exceeding the GWPS at corresponding well(s) is as follows:

- Arsenic at R-05S, R-17I, R-17S, R-19I, R-19S, and R-21S
- Lead at R-17I and R-19I
- Lithium at R-16S, R-21D, and R-22S
- Molybdenum at R-10S, R-17D, R-17I, R-17S, R-19D, R-19I, R-21D, R-21I, and R-22D

Following the calculation of confidence intervals, trend tests were completed using the Sen's Slope / Mann Kendall analysis. No constituent well pairs were determined to have a significant trend, therefore no trend charts are included with this Technical Memorandum.

Golder 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, R.G.
Senior Project Geologist



Sean Paulsen
Associate, Senior Consultant

EMS/JSI/SCP/MNH

Enclosures:

Table 1 – RCPA Groundwater Protection Standards
Appendix A – Sanitas Confidence Interval Statistical Output

¹ The GWPS is the same limit that was used during Assessment Monitoring period, which was the groundwater monitoring phase immediately prior to Corrective Action.

**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 ⁶
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) 2012 Edition of the Drinking Water Standards and Health Advisories. Spring 2012.
<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

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

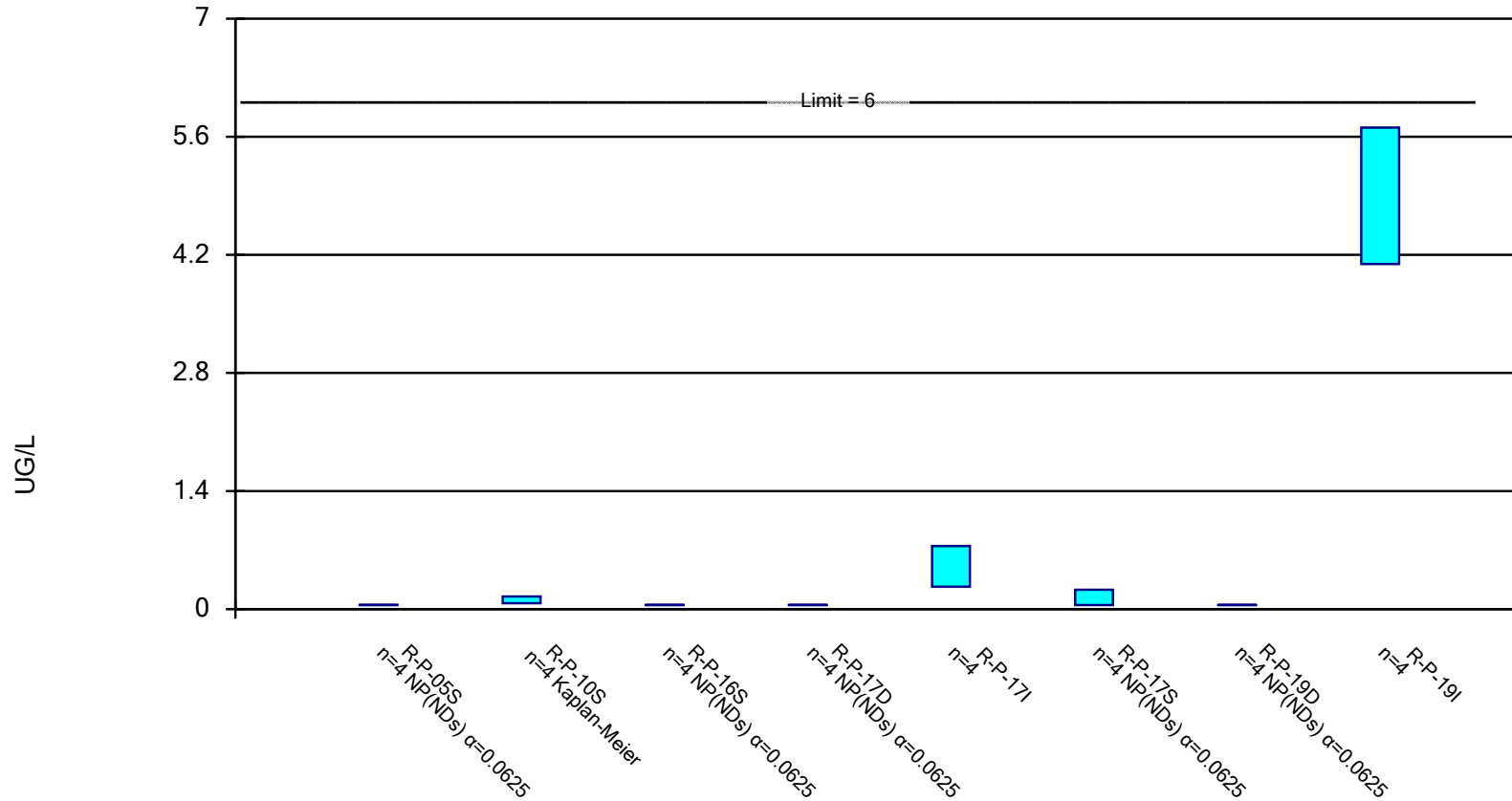
Reviewed by: SCP

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.

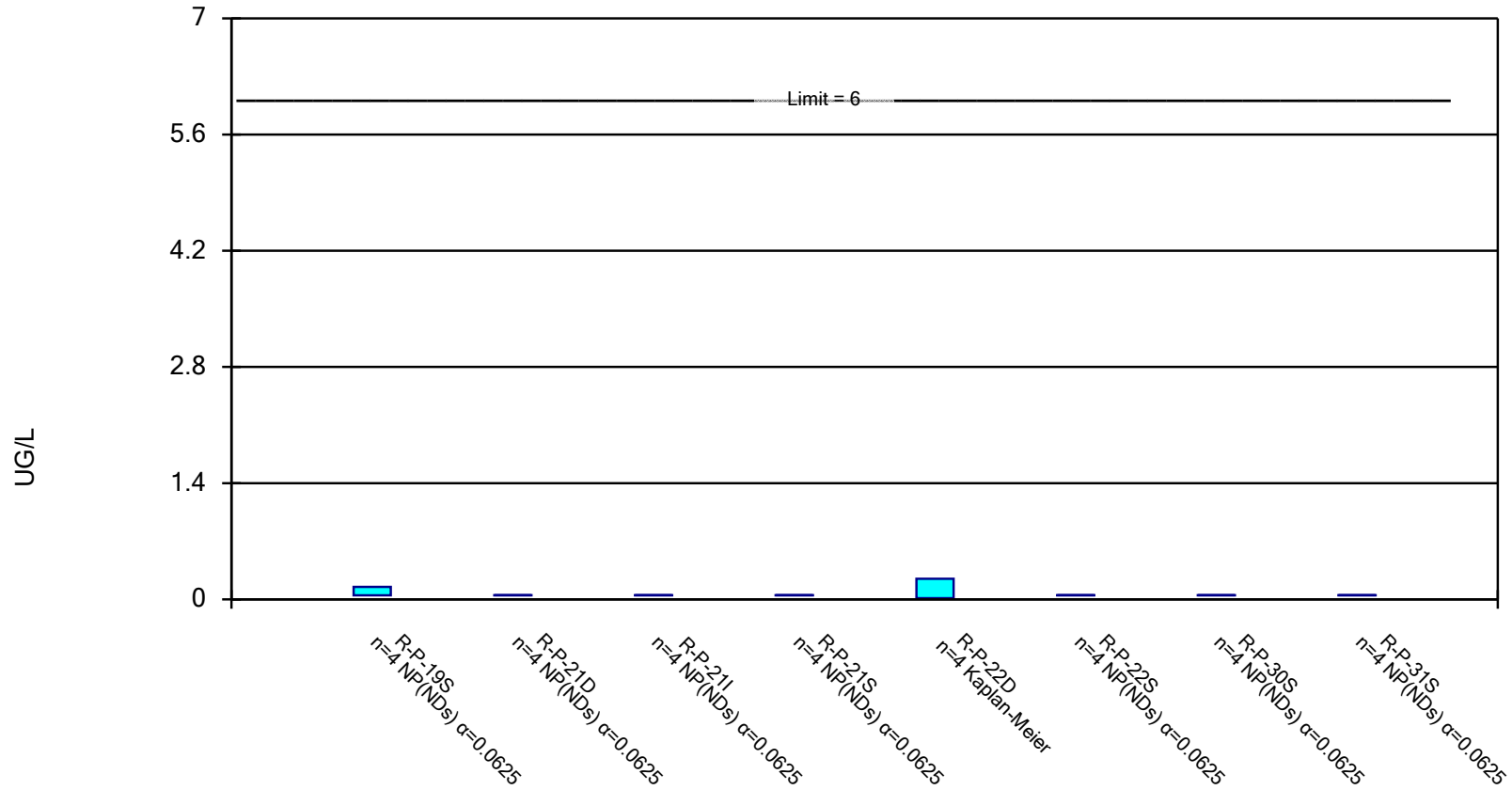


Constituent: ANTIMONY, TOTAL Analysis Run 9/2/2021 9:45 AM

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.

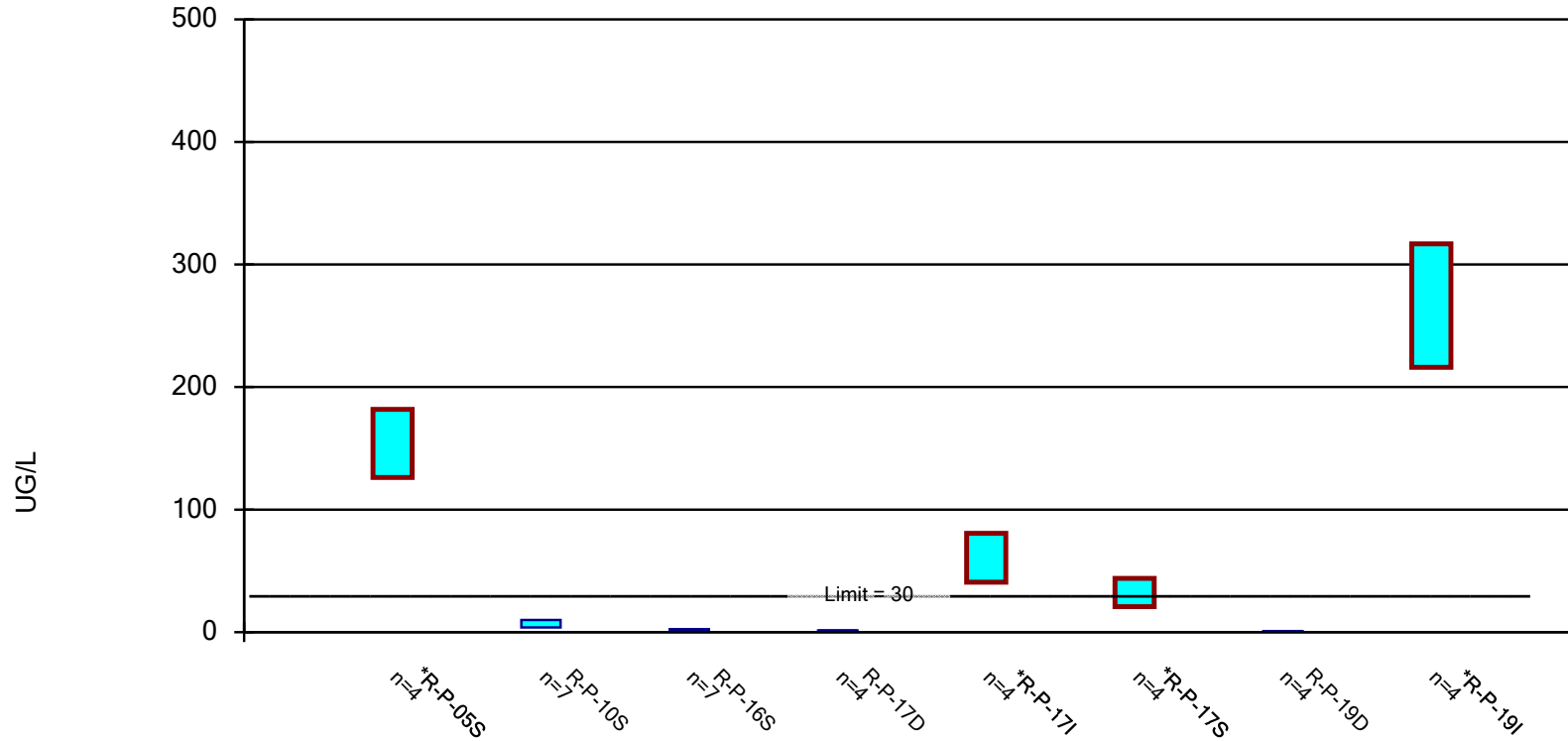


Constituent: ANTIMONY, TOTAL Analysis Run 9/2/2021 9:45 AM

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.

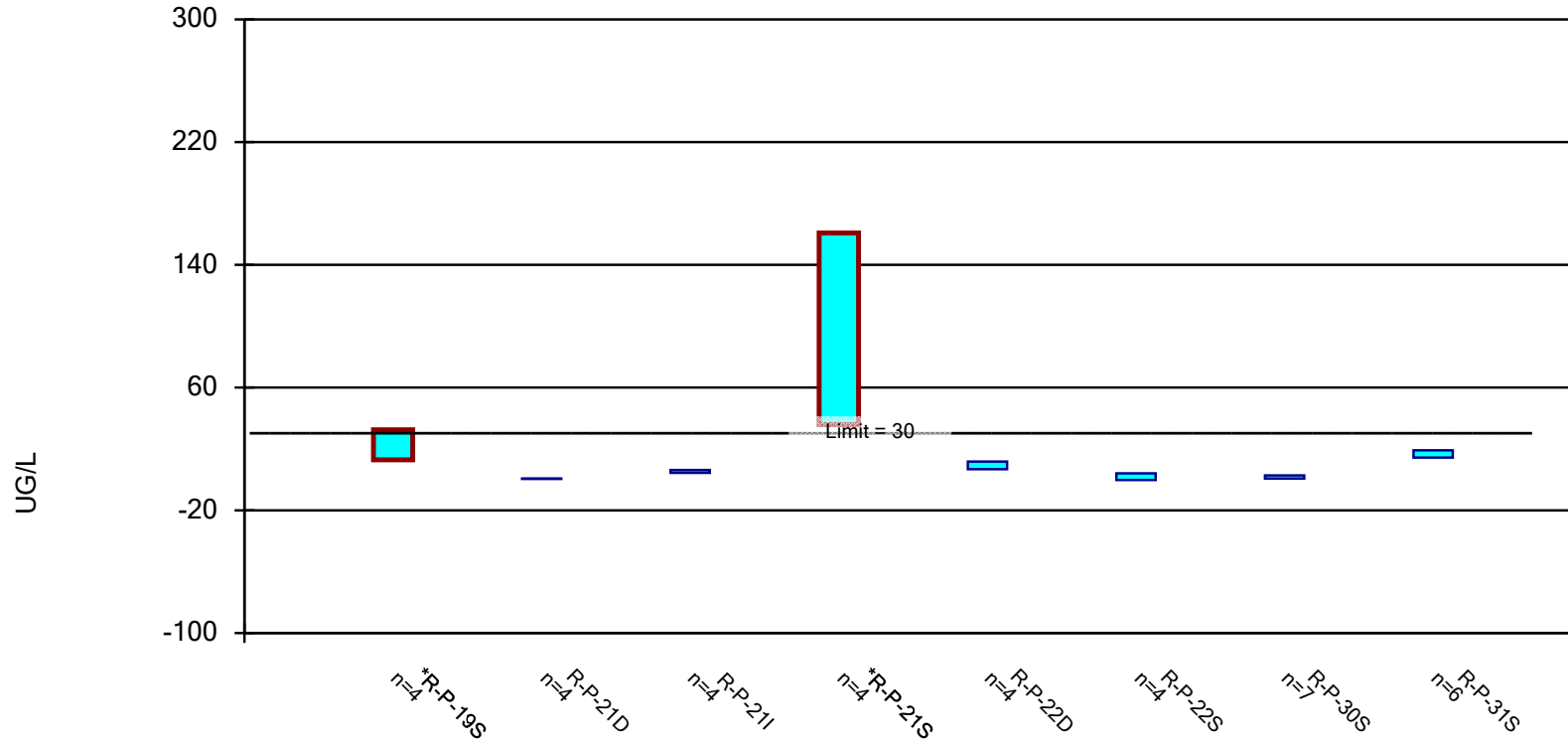


Constituent: ARSENIC, TOTAL Analysis Run 9/2/2021 9:45 AM

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.

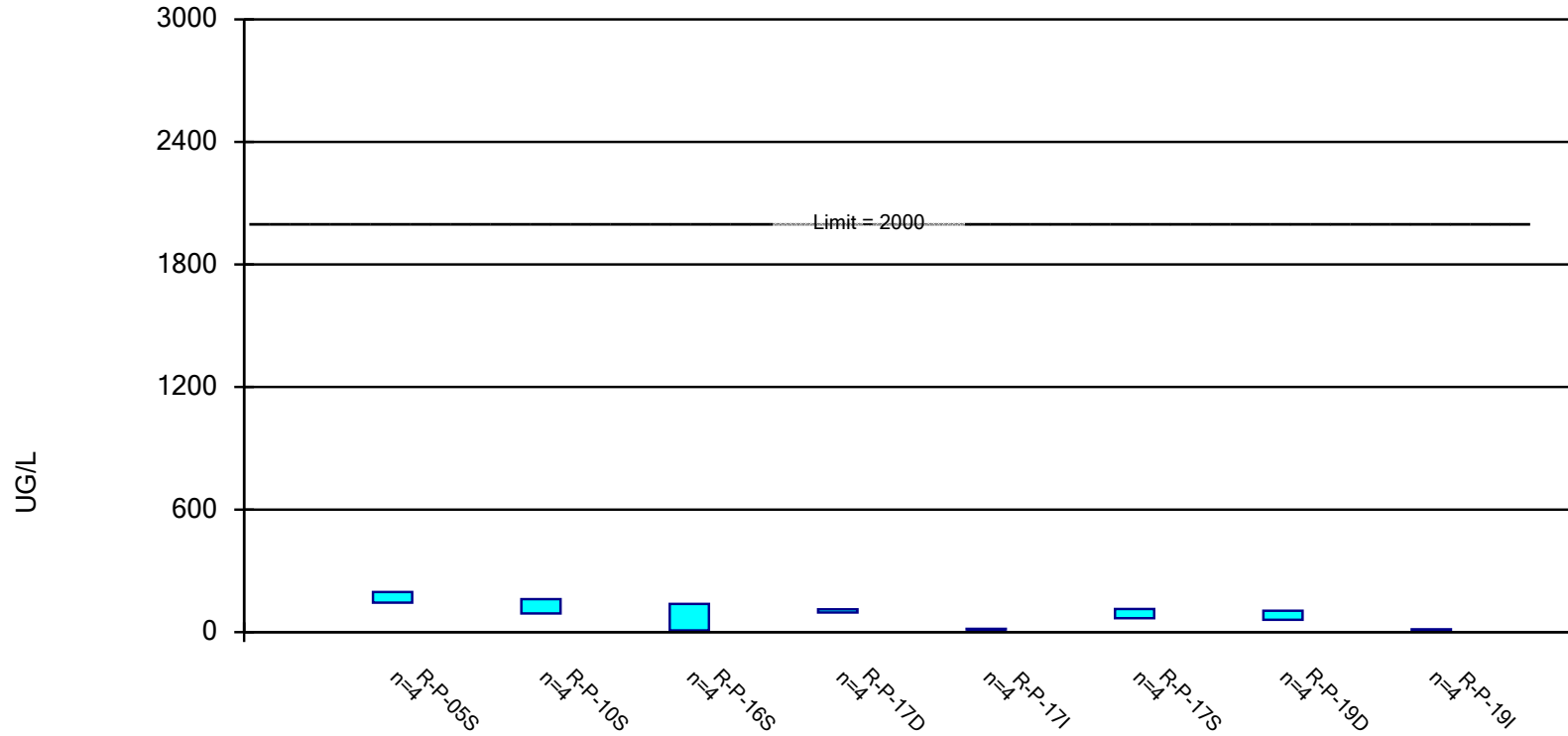


Constituent: ARSENIC, TOTAL Analysis Run 9/2/2021 9:45 AM

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.

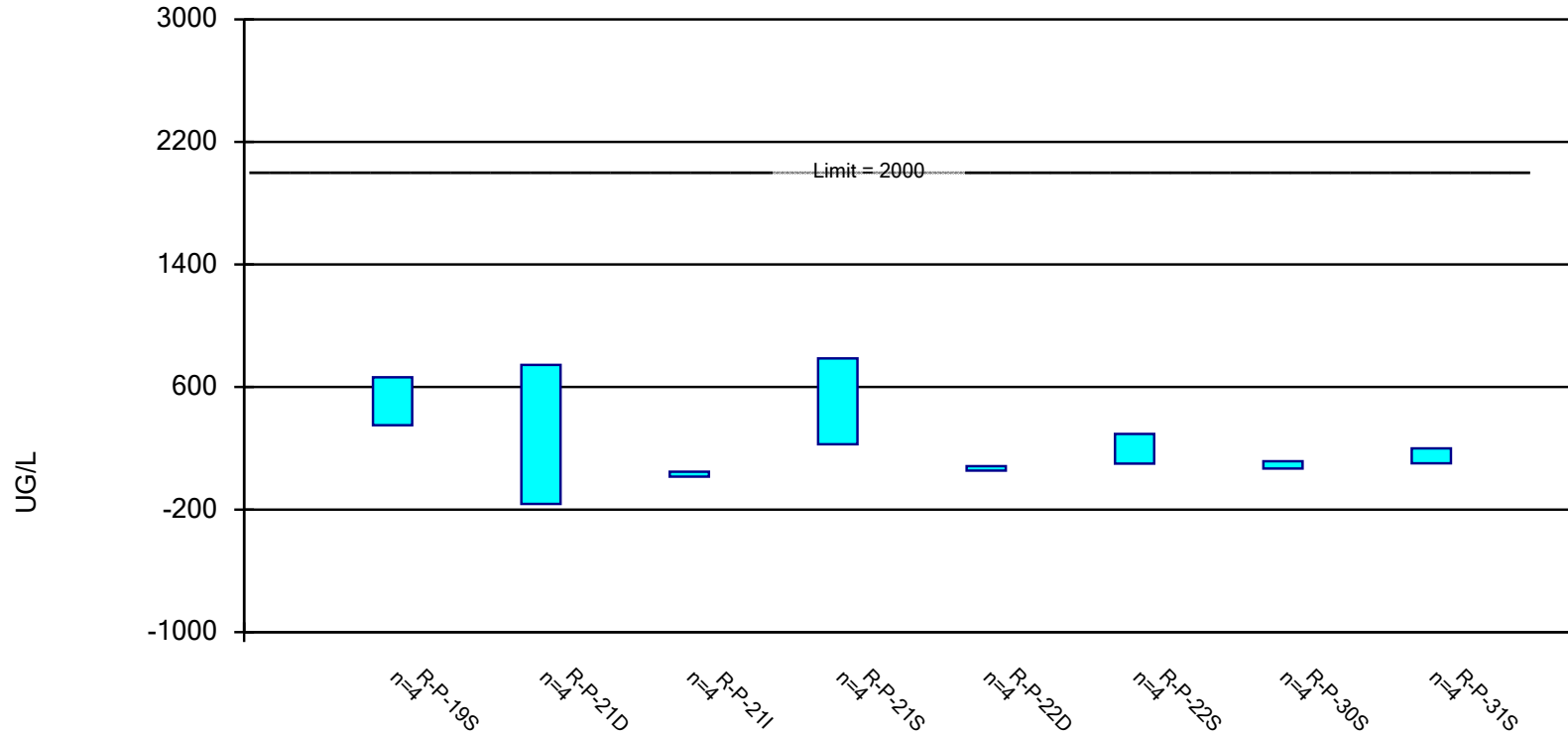


Constituent: BARIUM, TOTAL Analysis Run 9/2/2021 9:45 AM

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.

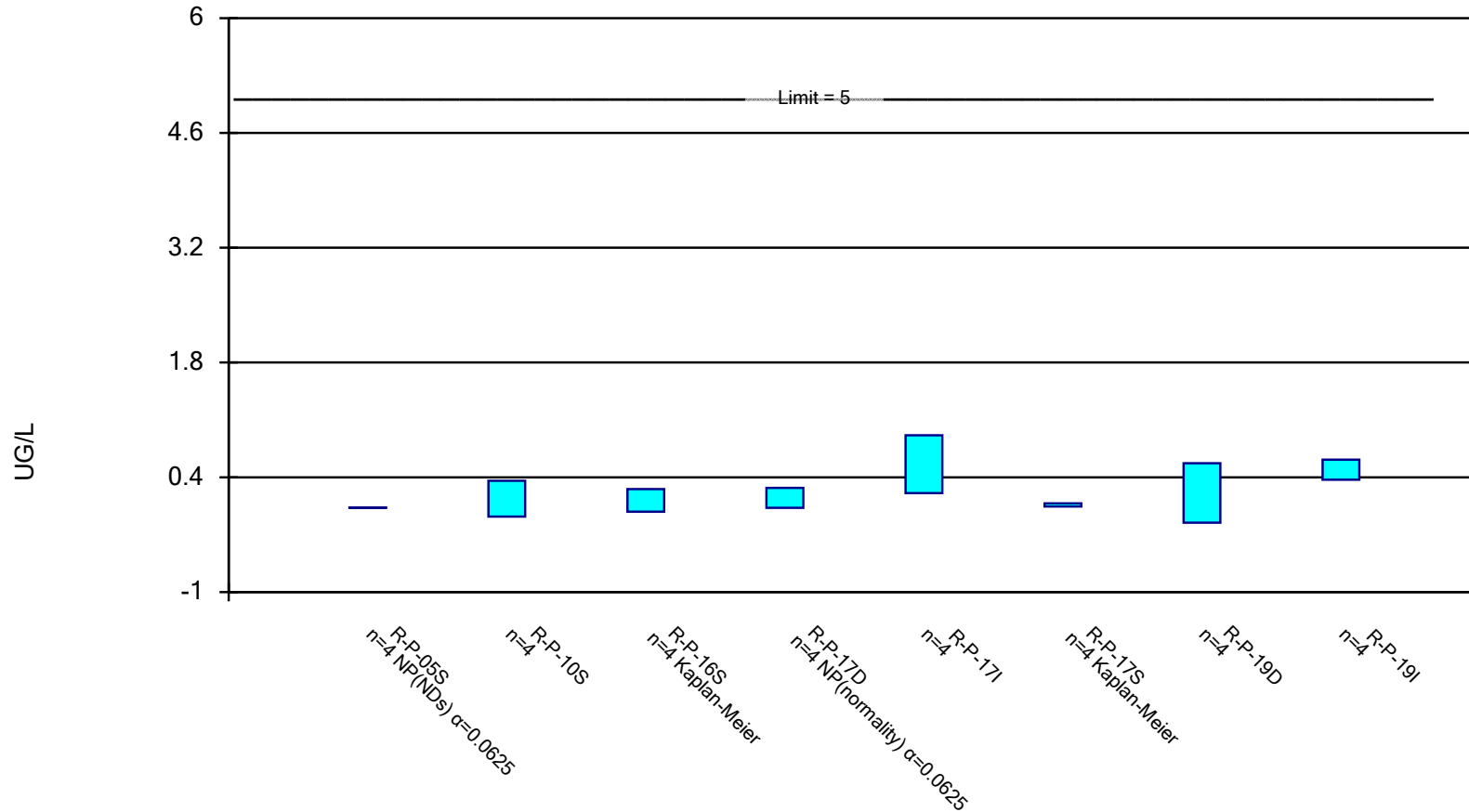


Constituent: BARIUM, TOTAL Analysis Run 9/2/2021 9:45 AM

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.

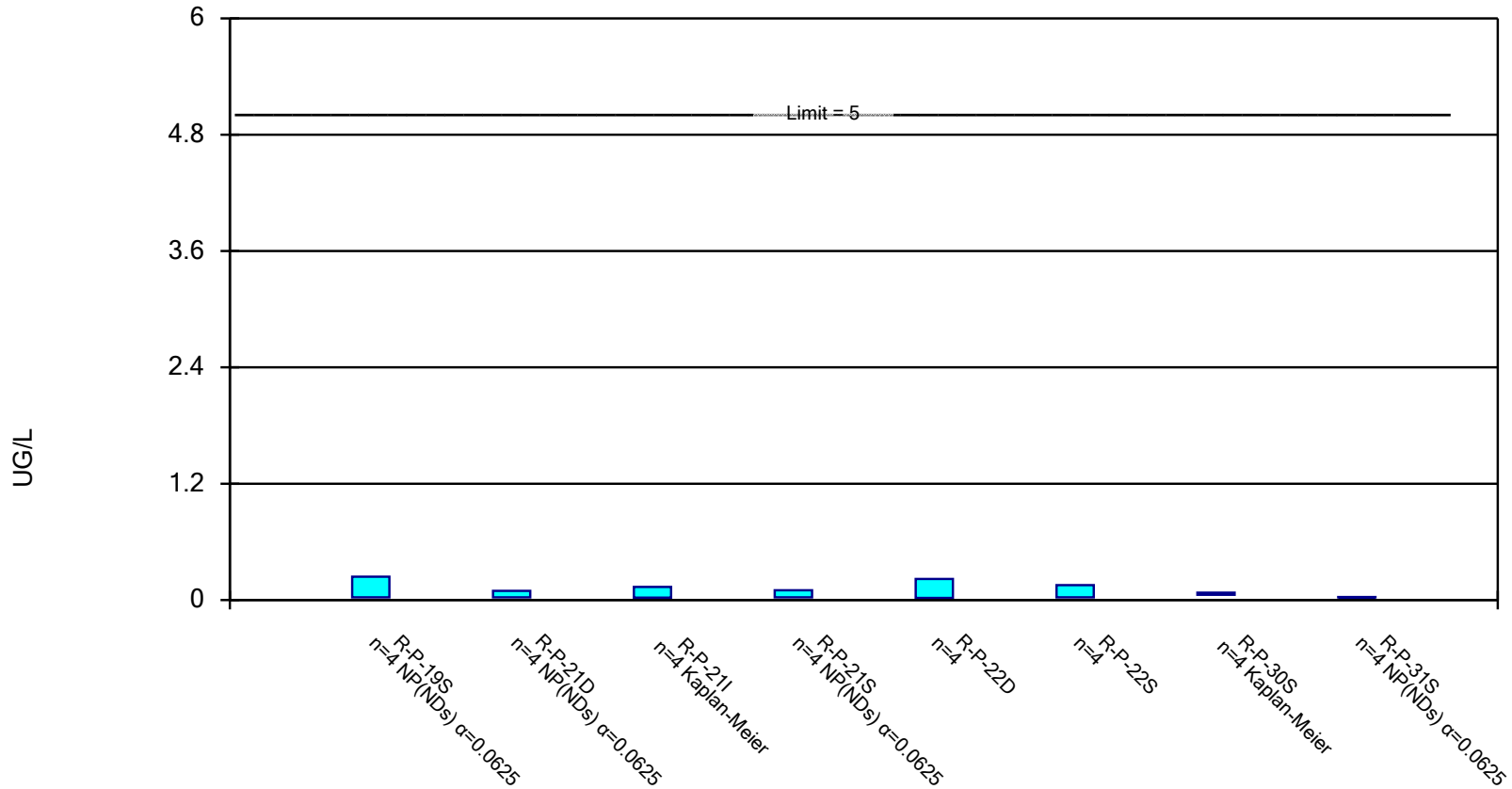


Constituent: CADMIUM, TOTAL Analysis Run 9/2/2021 9:45 AM

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.

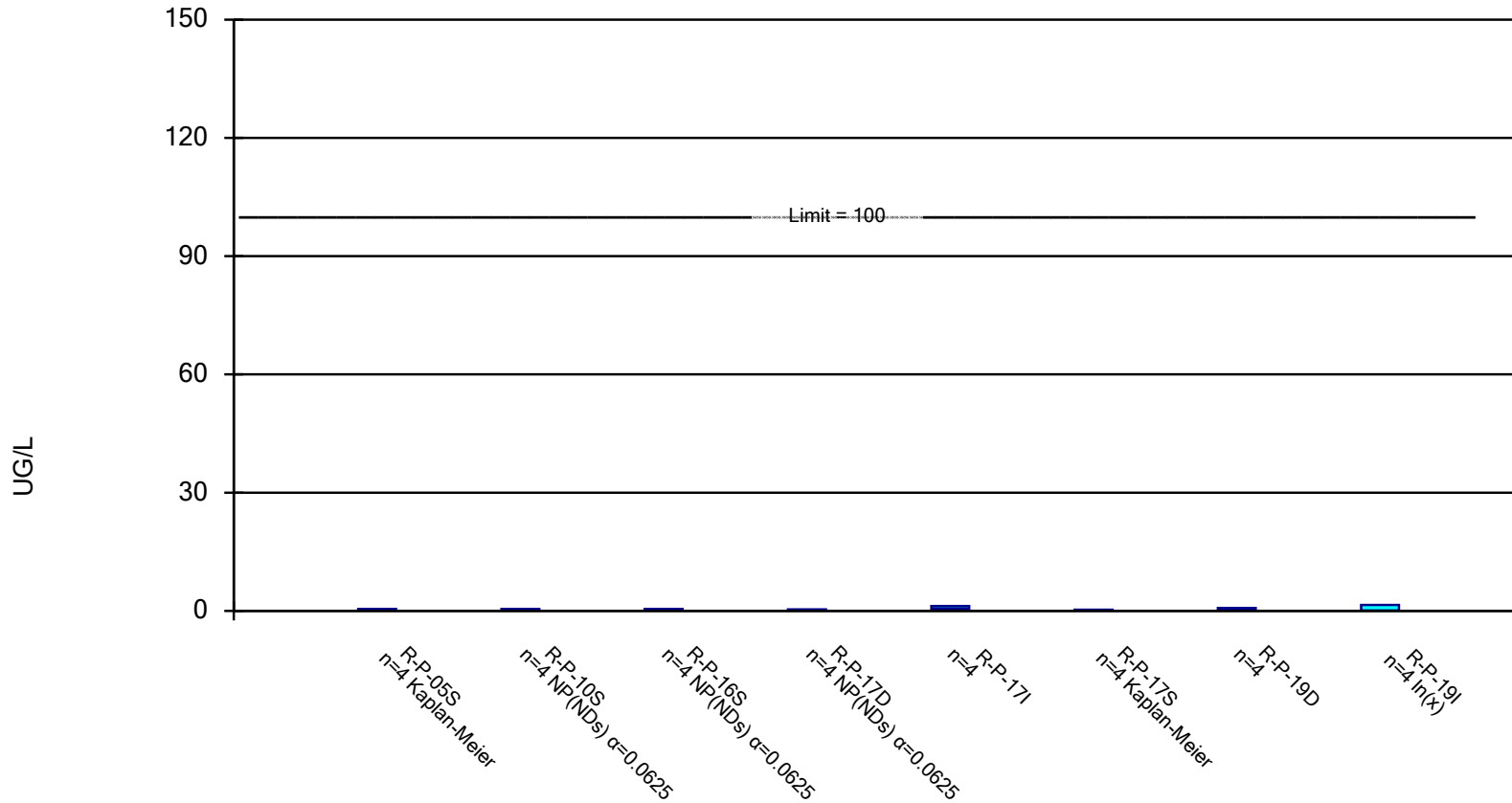


Constituent: CADMIUM, TOTAL Analysis Run 9/2/2021 9:45 AM

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.

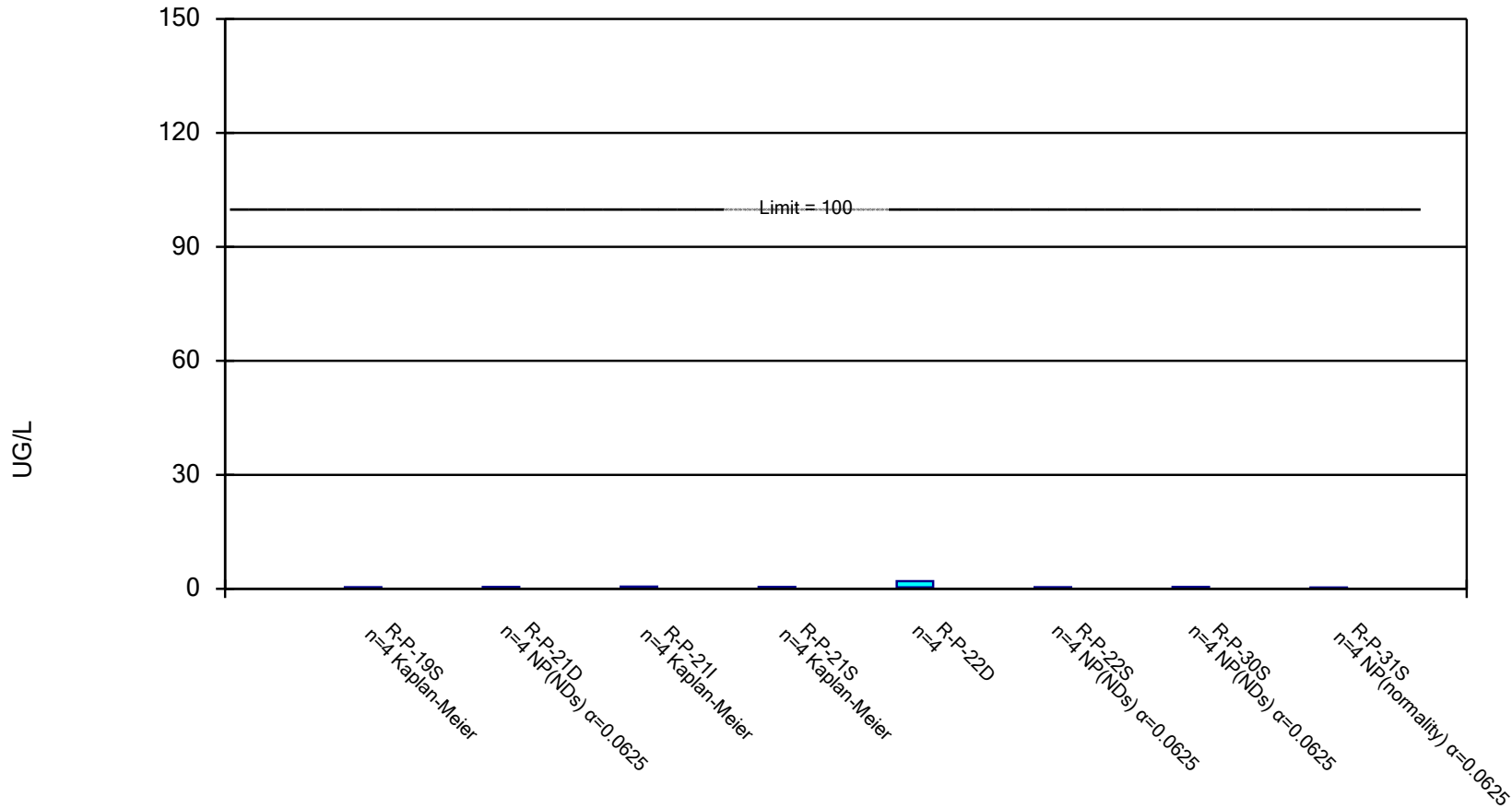


Constituent: CHROMIUM, TOTAL Analysis Run 9/2/2021 9:45 AM

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.

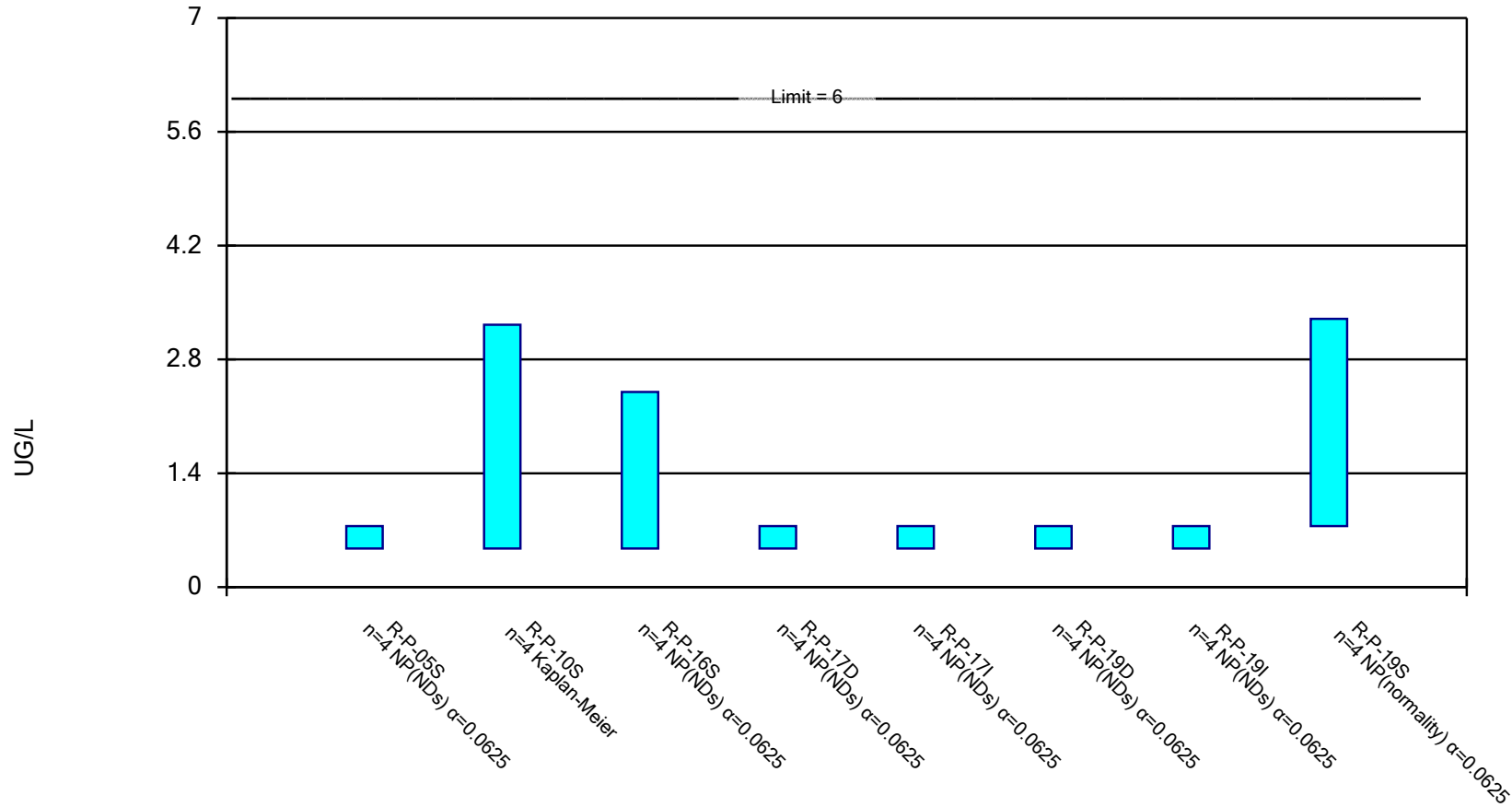


Constituent: CHROMIUM, TOTAL Analysis Run 9/2/2021 9:45 AM

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.

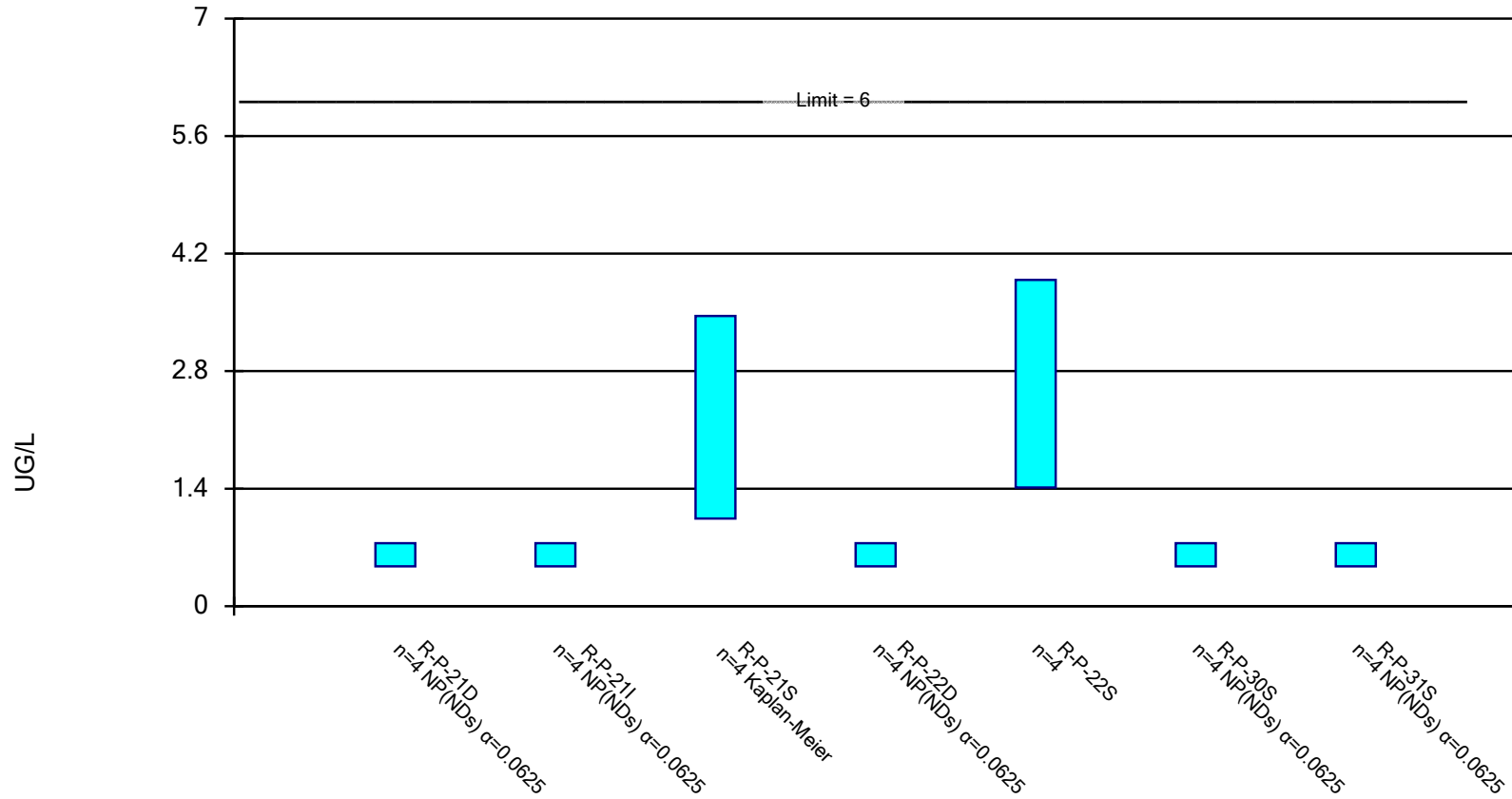


Constituent: COBALT, TOTAL Analysis Run 9/2/2021 9:45 AM

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.

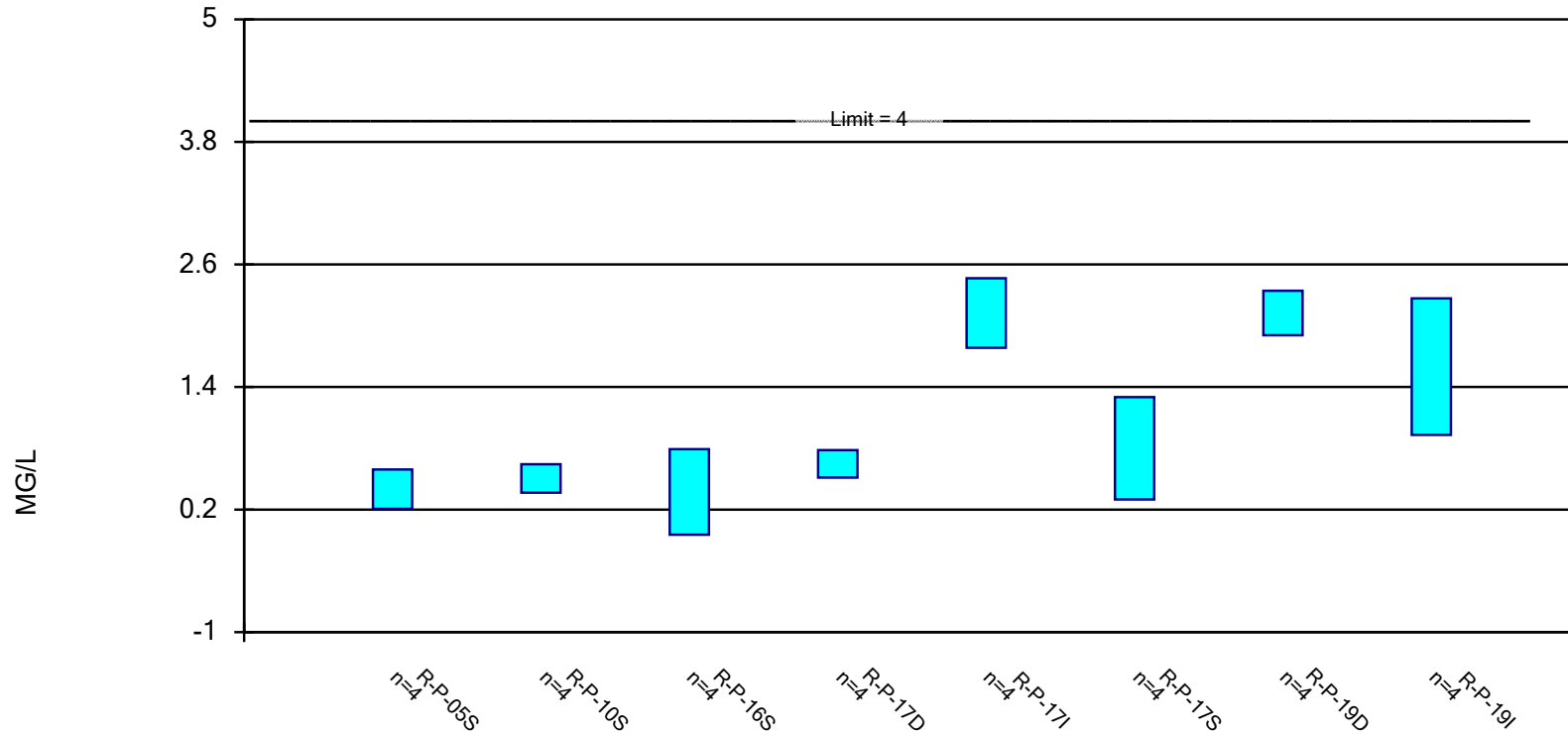


Constituent: COBALT, TOTAL Analysis Run 9/2/2021 9:45 AM

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.

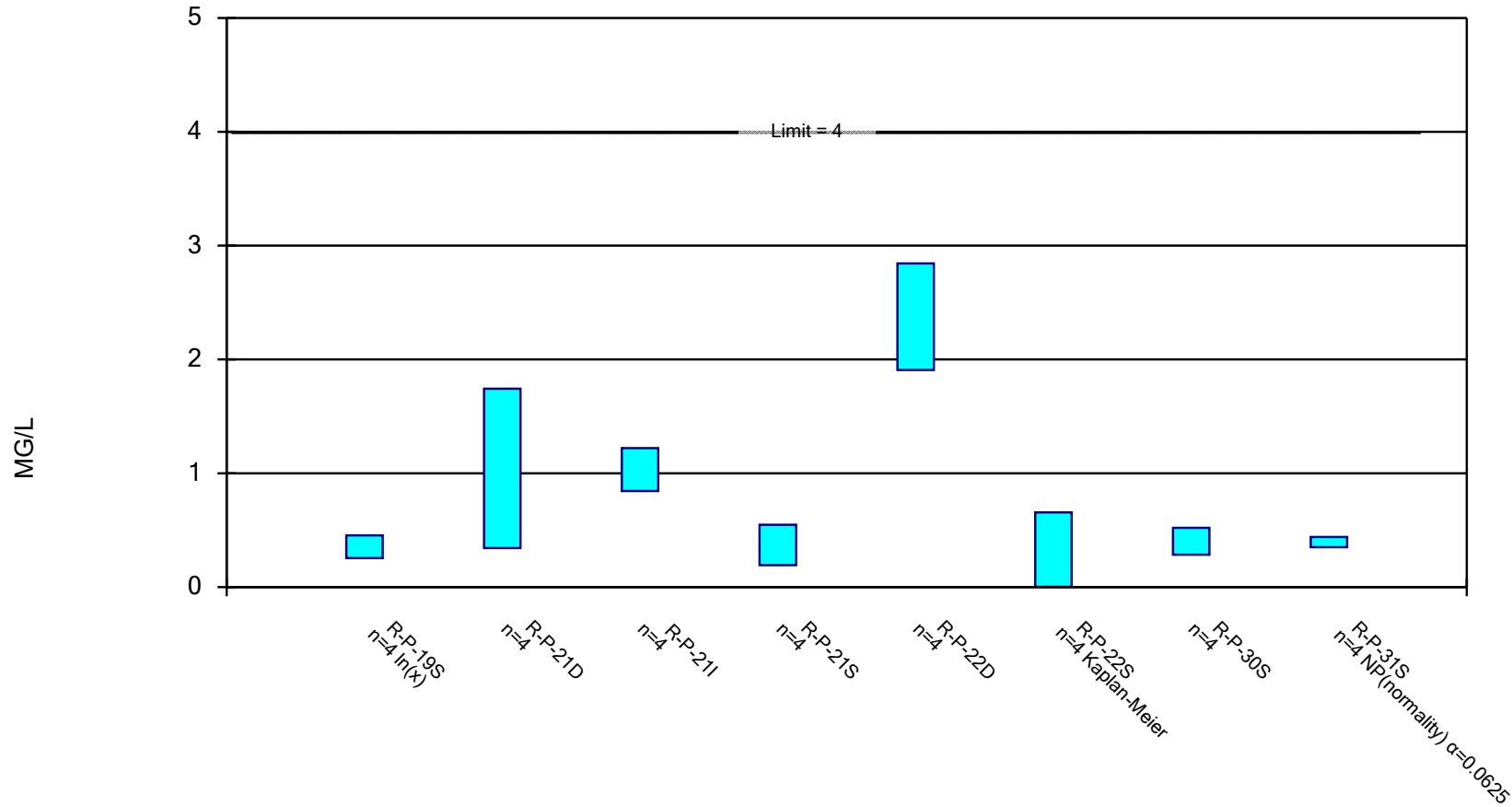


Constituent: FLUORIDE, TOTAL Analysis Run 9/2/2021 9:46 AM

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.

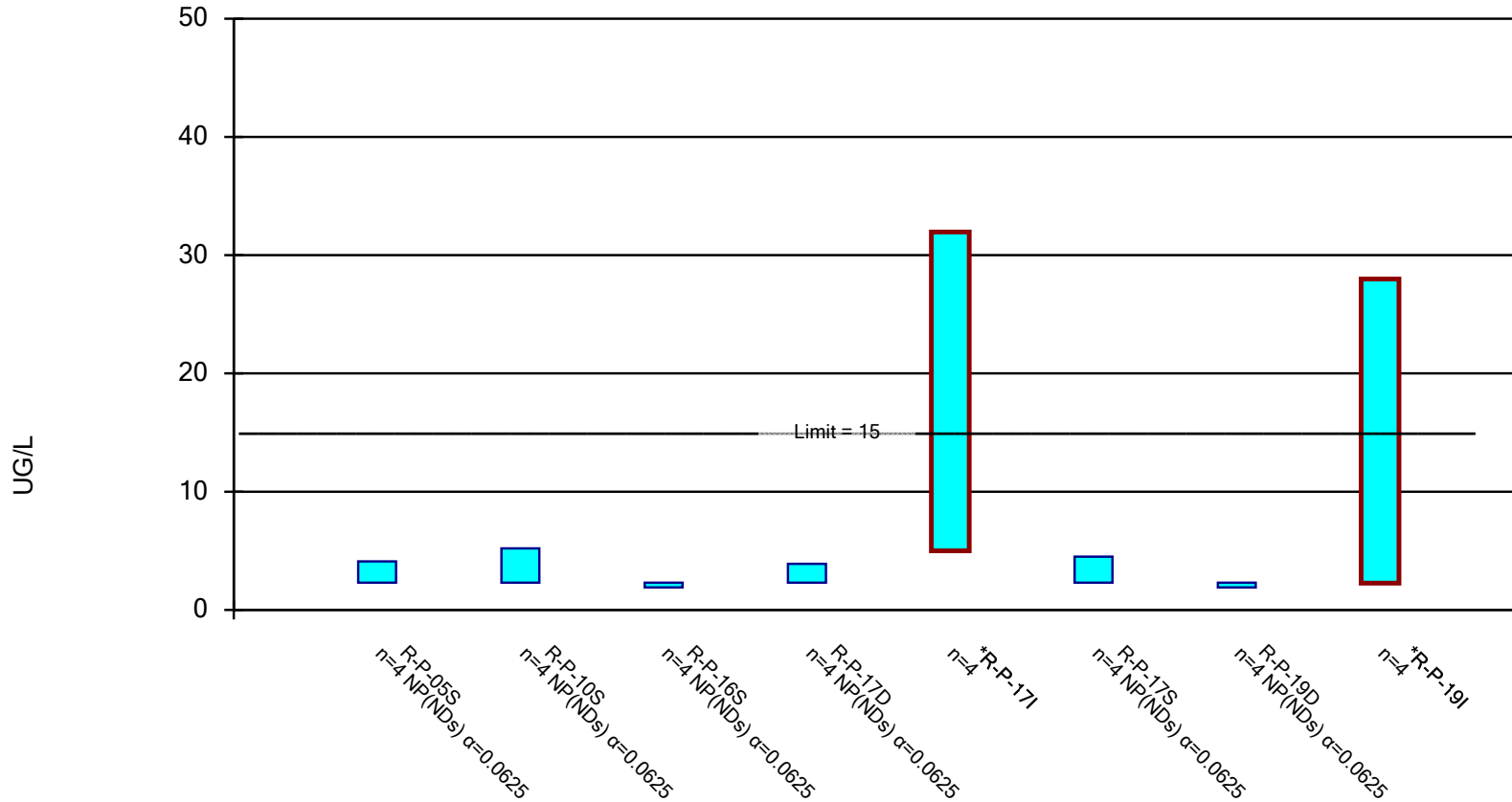


Constituent: FLUORIDE, TOTAL Analysis Run 9/2/2021 9:46 AM

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.

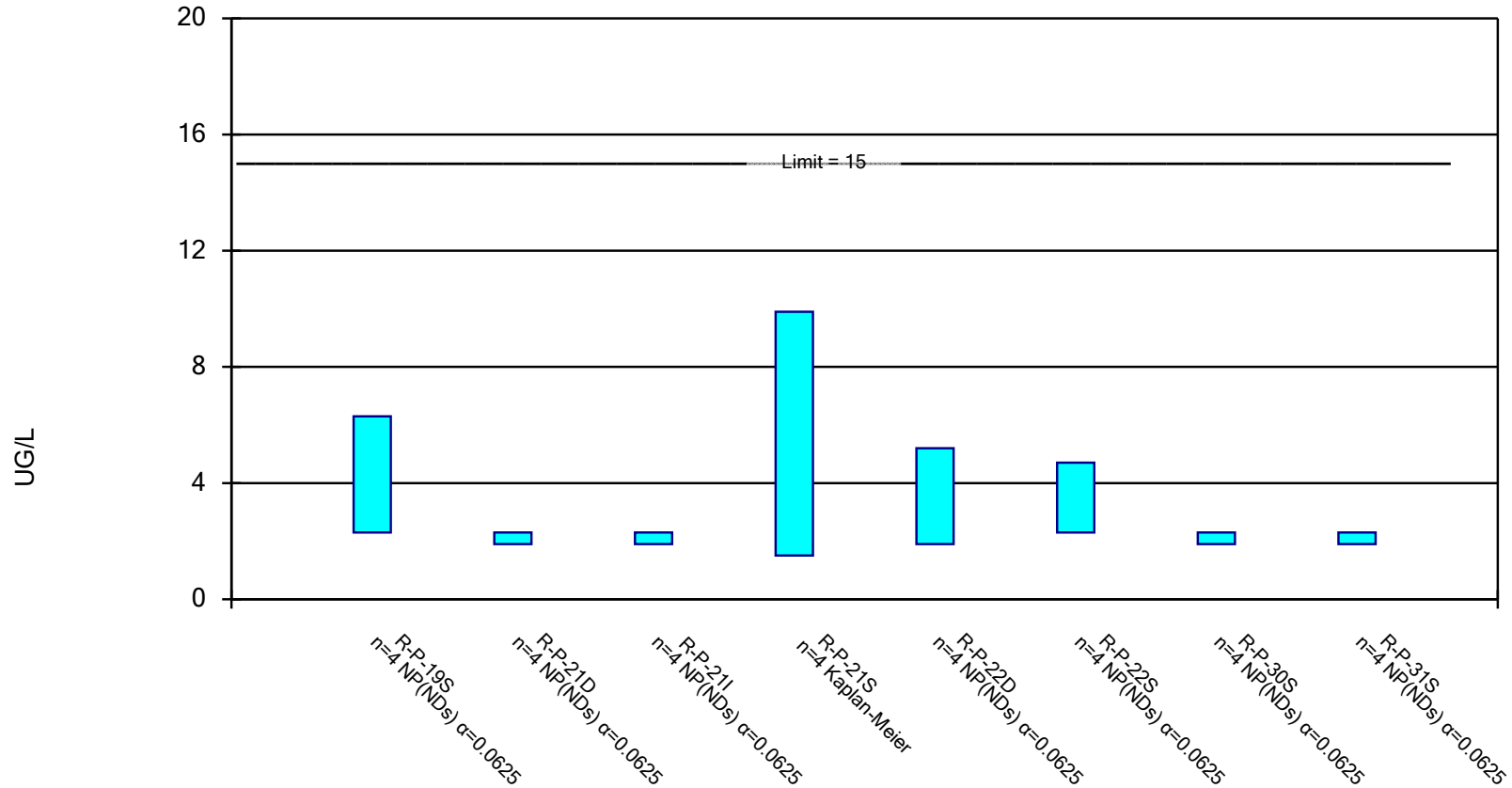


Constituent: LEAD, TOTAL Analysis Run 9/2/2021 9:46 AM

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.

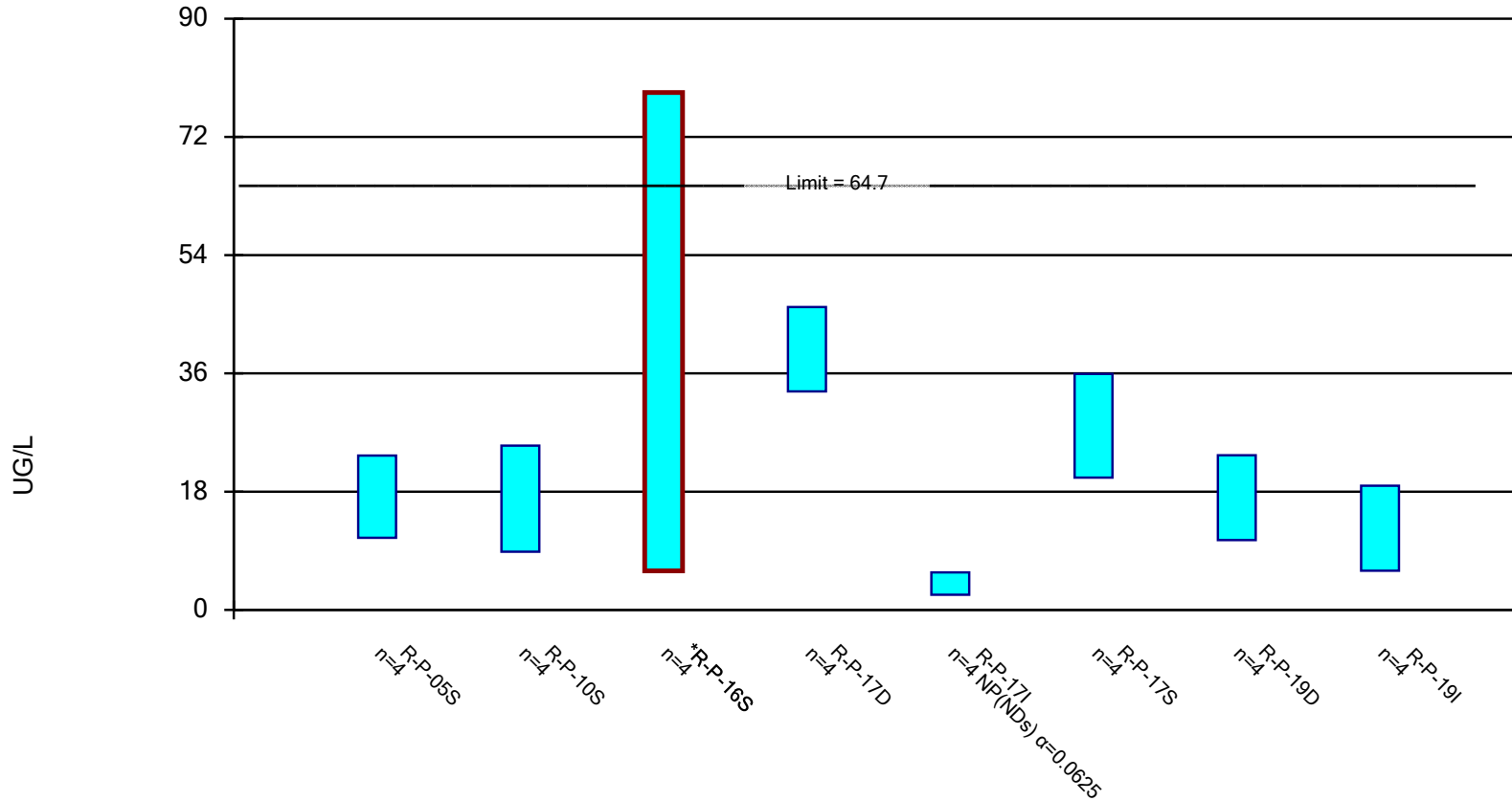


Constituent: LEAD, TOTAL Analysis Run 9/2/2021 9:46 AM

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.

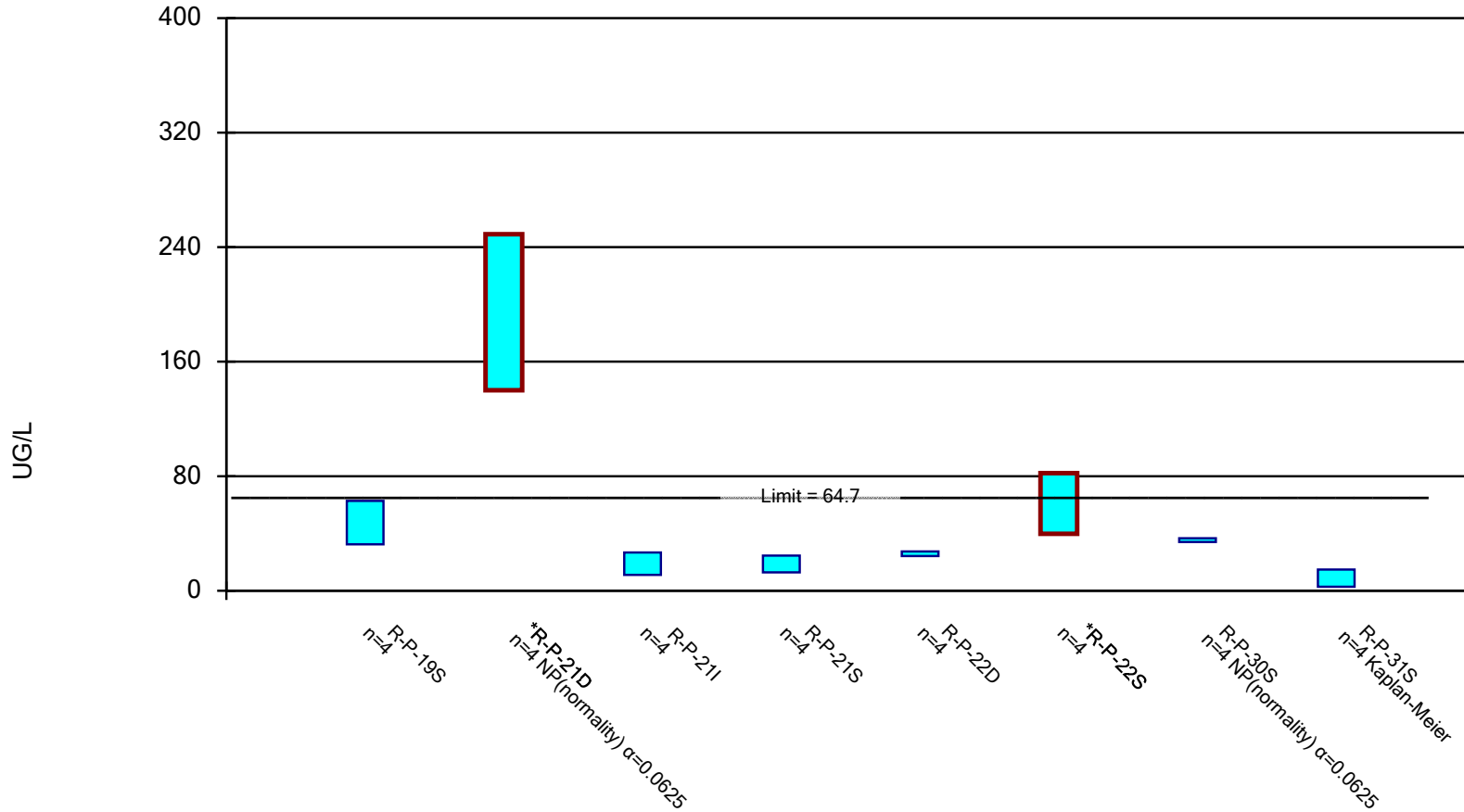


Constituent: LITHIUM, TOTAL Analysis Run 9/2/2021 9:46 AM

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.

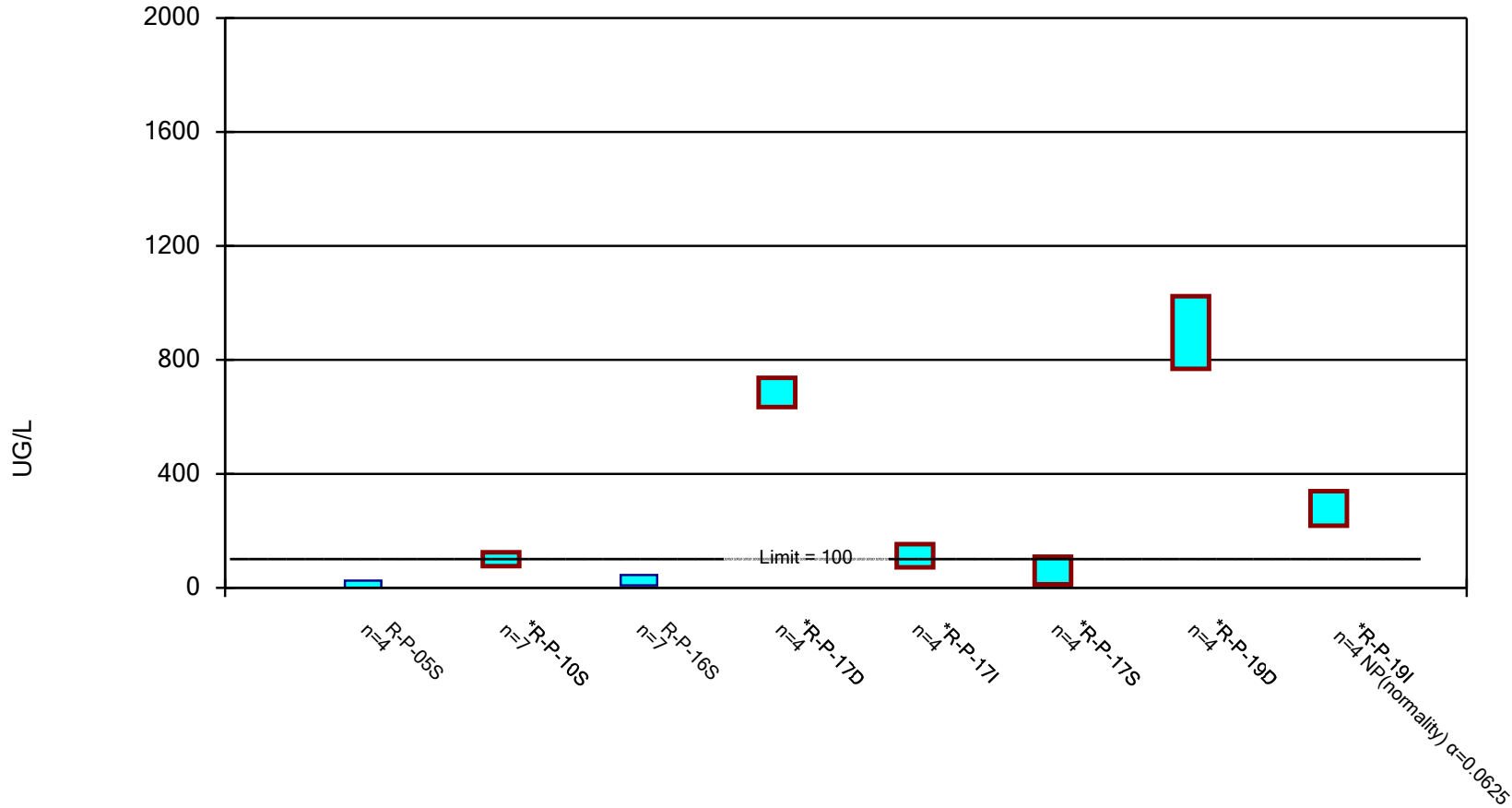


Constituent: LITHIUM, TOTAL Analysis Run 9/2/2021 9:46 AM

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.

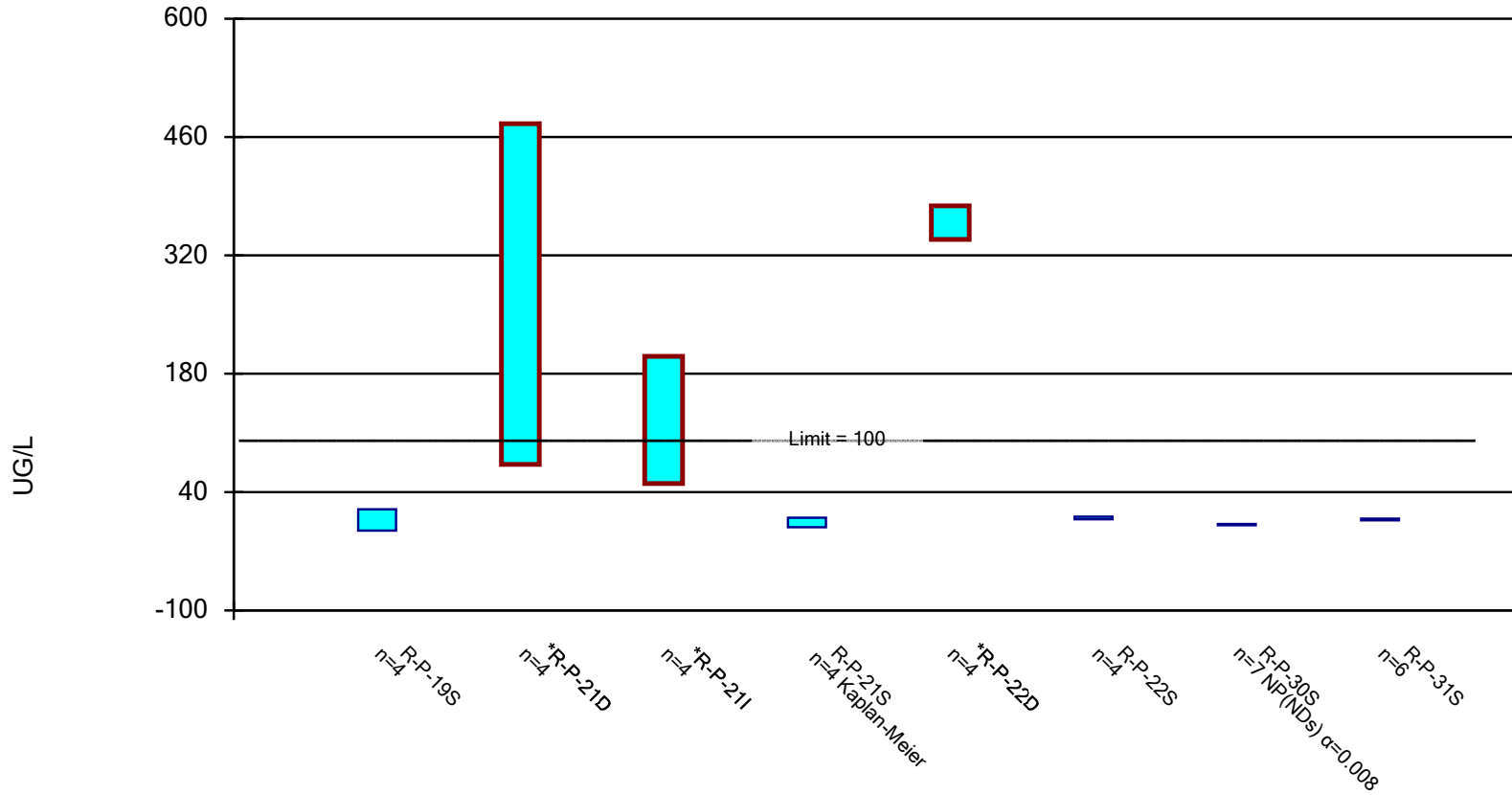


Constituent: MOLYBDENUM, TOTAL Analysis Run 9/2/2021 9:46 AM

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.

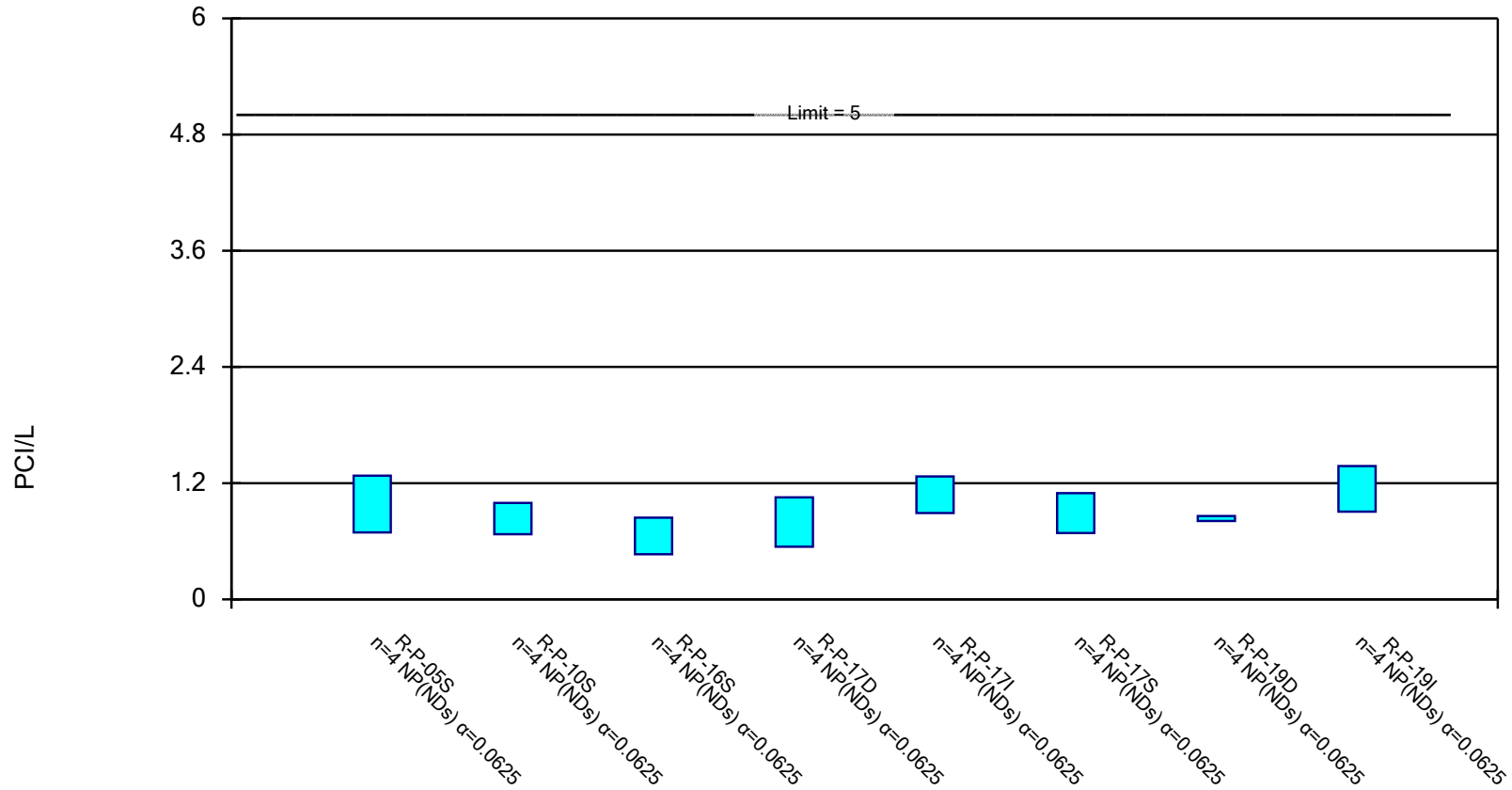


Constituent: MOLYBDENUM, TOTAL Analysis Run 9/2/2021 9:46 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

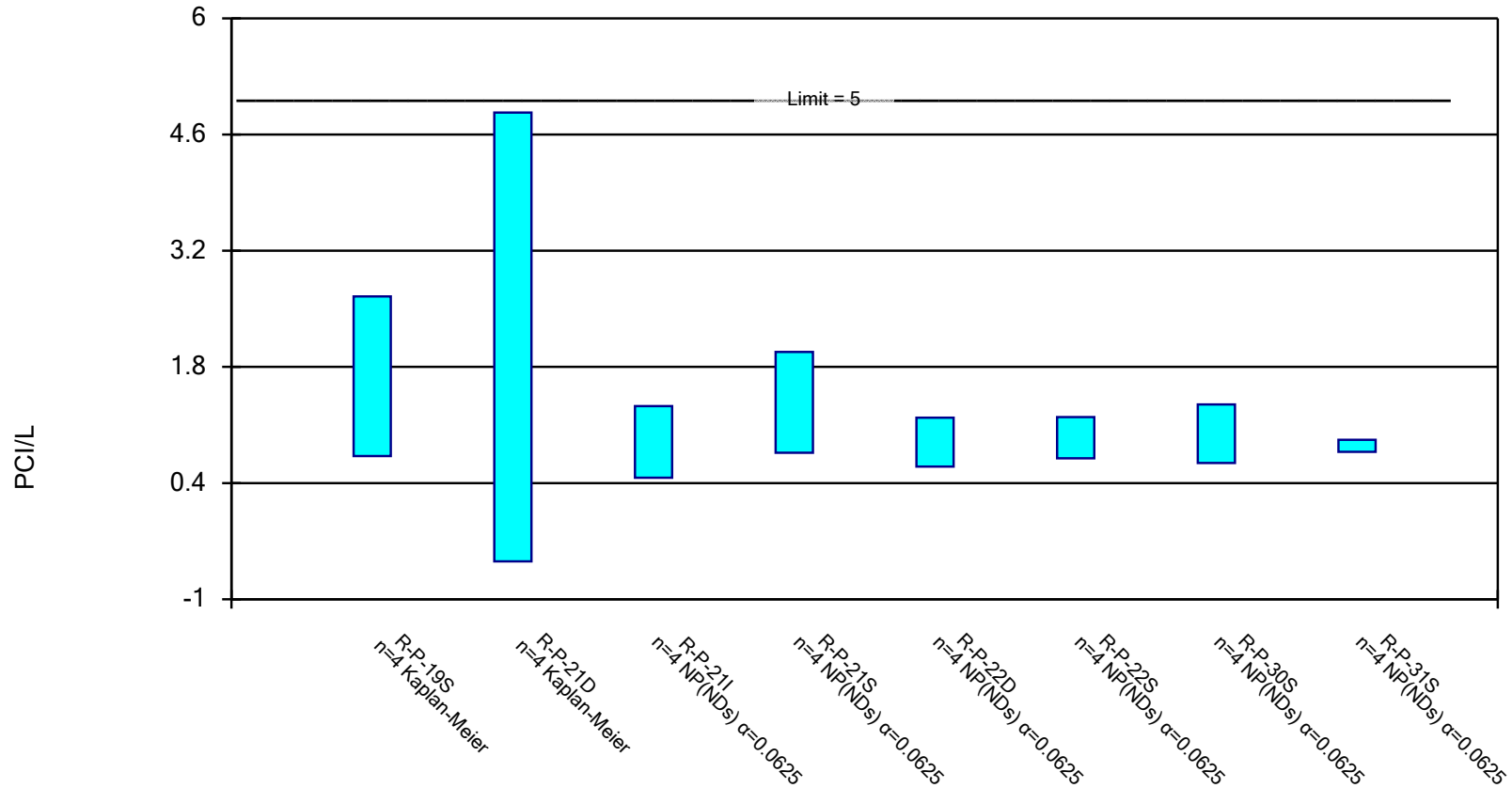


Constituent: RADIUM [226 + 228] Analysis Run 9/2/2021 9:46 AM

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.

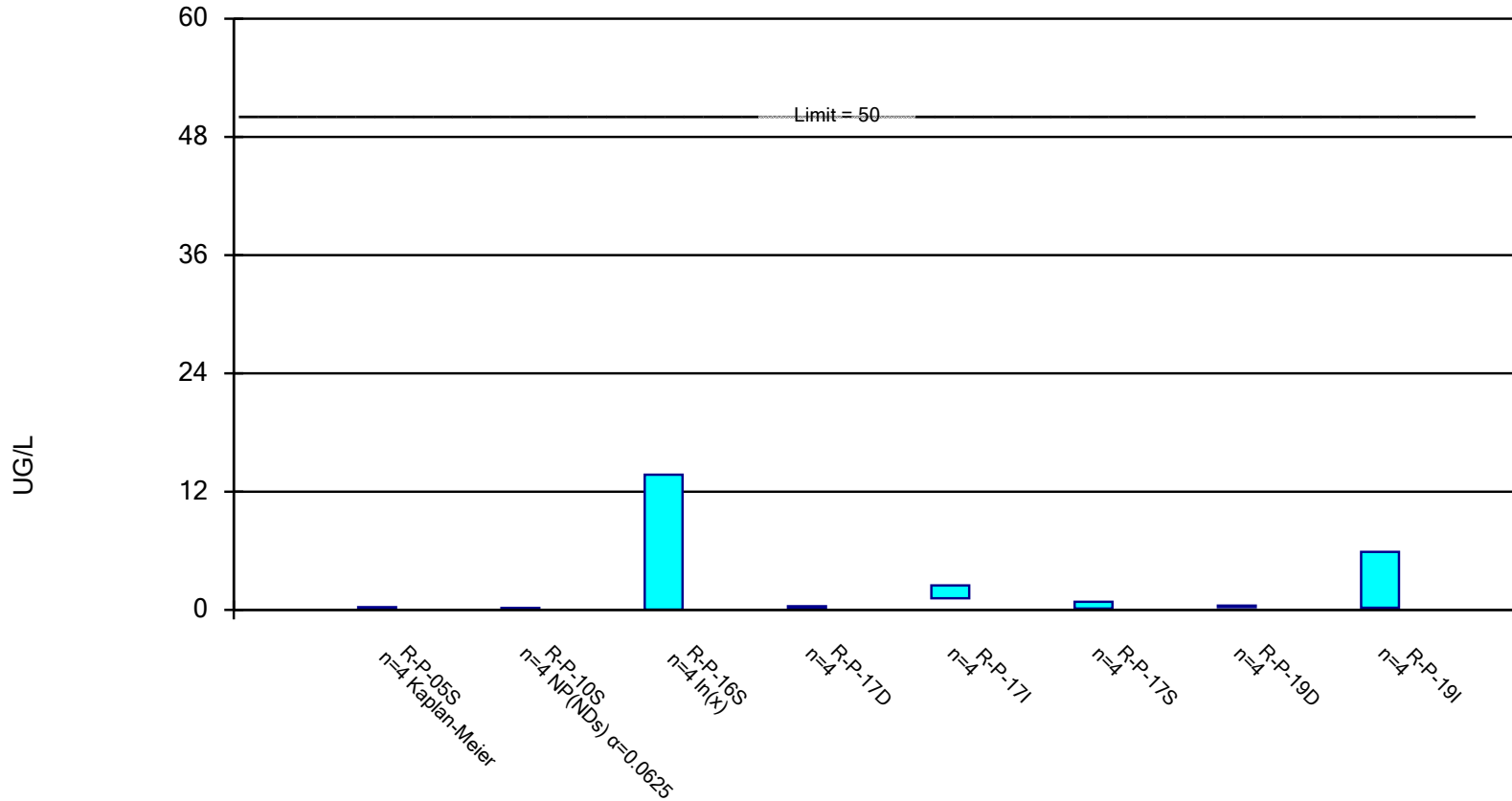


Constituent: RADIUM [226 + 228] Analysis Run 9/2/2021 9:46 AM

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.

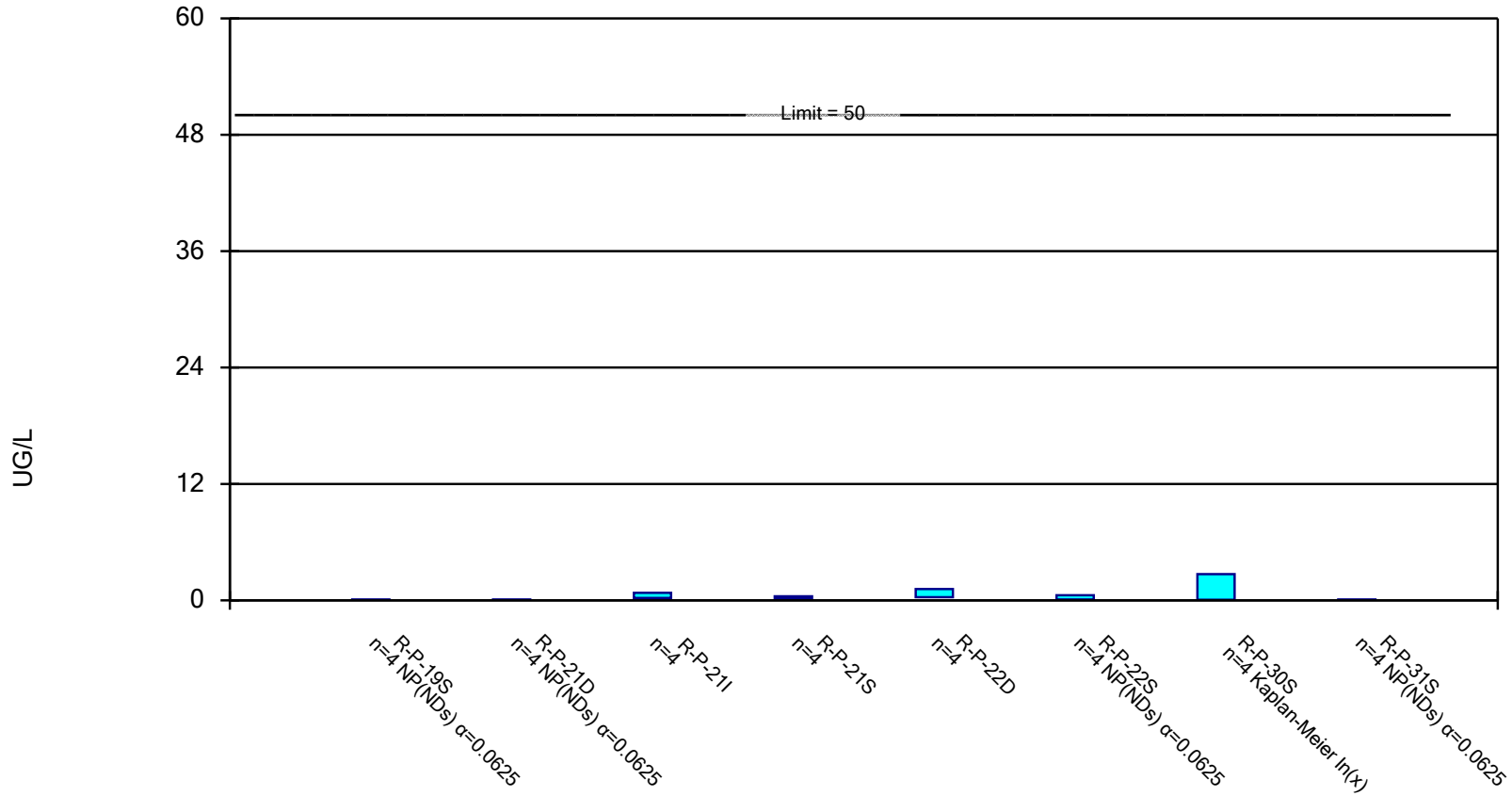


Constituent: SELENIUM, TOTAL Analysis Run 9/2/2021 9:46 AM

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 9/2/2021 9:46 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 9/2/2021, 9:46 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	0.05	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-10S	0.1509	0.07112	6	No	4	50	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-16S	0.05	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-17D	0.05	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-17I	0.7488	0.2662	6	No	4	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-17S	0.23	0.0485	6	No	4	75	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-19D	0.05	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-19I	5.708	4.092	6	No	4	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-19S	0.15	0.0485	6	No	4	75	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21D	0.05	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21I	0.05	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21S	0.05	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-22D	0.2483	0.01372	6	No	4	50	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-22S	0.05	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-30S	0.05	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-31S	0.05	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ARSENIC, TOTAL (UG/L)	R-P-05S	181.8	126.2	30	Yes	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-10S	9.977	3.852	30	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-16S	2.453	1.062	30	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-17D	1.385	1.015	30	No	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-17I	80.63	40.82	30	Yes	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-17S	43.93	20.87	30	Yes	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-19D	0.9173	0.4377	30	No	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-19I	316.8	216.2	30	Yes	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-19S	32.5	12.85	30	Yes	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-21D	0.6896	0.4754	30	No	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-21I	6.221	4.429	30	No	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-21S	160.7	35.84	30	Yes	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-22D	11.75	6.753	30	No	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-22S	4.124	-0.2237	30	No	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-30S	2.725	0.7263	30	No	7	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-31S	19.12	14.35	30	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-05S	196.5	144.5	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-10S	161.3	91.7	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-16S	137.9	8.526	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17D	111.4	96.03	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17I	16.31	12.99	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17S	113.1	68.34	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-19D	105	60.11	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-19I	14.06	9.545	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-19S	663.2	350.8	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21D	743.9	-163.4	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21I	46.83	15.22	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21S	786.7	226.3	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-22D	83.89	54.91	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-22S	293.8	99.69	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-30S	115.2	68.15	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-31S	199	101.5	2000	No	4	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-05S	0.031	0.028	5	No	4	100	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-10S	0.3578	-0.08027	5	No	4	0	No	0.01	Param.

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Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
CADMIUM, TOTAL (UG/L)	R-P-16S	0.2552	-0.01924	5	No	4	25	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17D	0.27	0.028	5	No	4	50	No	0.0625	NP (normality)
CADMIUM, TOTAL (UG/L)	R-P-17I	0.9122	0.2078	5	No	4	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17S	0.08274	0.04376	5	No	4	50	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19D	0.572	-0.1535	5	No	4	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19I	0.6146	0.3704	5	No	4	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19S	0.24	0.028	5	No	4	75	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-21D	0.095	0.028	5	No	4	75	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-21I	0.1353	0.02467	5	No	4	50	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-21S	0.1	0.028	5	No	4	75	No	0.0625	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-22D	0.2171	0.02195	5	No	4	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-22S	0.1533	0.02721	5	No	4	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-30S	0.07528	0.05472	5	No	4	25	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-31S	0.031	0.028	5	No	4	100	No	0.0625	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-05S	0.5016	0.2584	100	No	4	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-10S	0.5	0.11	100	No	4	75	No	0.0625	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-16S	0.5	0.11	100	No	4	100	No	0.0625	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-17D	0.36	0.11	100	No	4	75	No	0.0625	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-17I	1.218	0.5773	100	No	4	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-17S	0.2902	0.1832	100	No	4	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19D	0.7422	0.1428	100	No	4	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19I	1.51	0.1001	100	No	4	0	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19S	0.409	0.131	100	No	4	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-21D	0.5	0.11	100	No	4	75	No	0.0625	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-21I	0.5814	0.09191	100	No	4	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-21S	0.5019	0.06813	100	No	4	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-22D	2.012	0.383	100	No	4	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-22S	0.41	0.11	100	No	4	75	No	0.0625	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-30S	0.5	0.11	100	No	4	100	No	0.0625	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-31S	0.34	0.11	100	No	4	50	No	0.0625	NP (normality)
COBALT, TOTAL (UG/L)	R-P-05S	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-10S	3.226	0.4737	6	No	4	50	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-16S	2.4	0.475	6	No	4	75	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-17D	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-17I	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-19D	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-19I	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-19S	3.3	0.75	6	No	4	50	No	0.0625	NP (normality)
COBALT, TOTAL (UG/L)	R-P-21D	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-21I	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-21S	3.457	1.043	6	No	4	25	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-22D	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-22S	3.887	1.413	6	No	4	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-30S	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-31S	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
FLUORIDE, TOTAL (MG/L)	R-P-05S	0.5926	0.2074	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-10S	0.6443	0.3657	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-16S	0.7917	-0.0467	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-17D	0.7817	0.5133	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-17I	2.466	1.784	4	No	4	0	No	0.01	Param.

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Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-P-17S	1.302	0.2981	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19D	2.342	1.908	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19I	2.268	0.9316	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19S	0.4538	0.2553	4	No	4	0	ln(x)	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-21D	1.743	0.3424	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-21I	1.221	0.844	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-21S	0.5468	0.1932	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-22D	2.843	1.907	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-22S	0.6559	0.002093	4	No	4	25	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-30S	0.5203	0.2847	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-31S	0.44	0.35	4	No	4	0	No	0.0625	NP (normality)
LEAD, TOTAL (UG/L)	R-P-05S	4.1	2.3	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-10S	5.2	2.3	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-16S	2.3	1.9	15	No	4	100	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-17D	3.9	2.3	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-17I	31.95	4.996	15	Yes	4	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-P-17S	4.5	2.3	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-19D	2.3	1.9	15	No	4	100	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-19I	27.98	2.265	15	Yes	4	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-P-19S	6.3	2.3	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21D	2.3	1.9	15	No	4	100	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21I	2.3	1.9	15	No	4	100	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21S	9.896	1.504	15	No	4	50	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-P-22D	5.2	1.9	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-22S	4.7	2.3	15	No	4	75	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-30S	2.3	1.9	15	No	4	100	No	0.0625	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-31S	2.3	1.9	15	No	4	100	No	0.0625	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-P-05S	23.49	10.96	64.7	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-10S	25	8.85	64.7	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-16S	78.77	5.933	64.7	Yes	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-17D	46.09	33.26	64.7	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-17I	5.7	2.3	64.7	No	4	75	No	0.0625	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-P-17S	35.91	20.14	64.7	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-19D	23.53	10.62	64.7	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-19I	18.9	5.955	64.7	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-19S	62.79	32.41	64.7	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-21D	249	140	64.7	Yes	4	0	No	0.0625	NP (normality)
LITHIUM, TOTAL (UG/L)	R-P-21I	26.68	11.02	64.7	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-21S	24.52	12.83	64.7	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-22D	27.48	24.17	64.7	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-22S	82.13	39.77	64.7	Yes	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-30S	36.6	34.1	64.7	No	4	0	No	0.0625	NP (normality)
LITHIUM, TOTAL (UG/L)	R-P-31S	14.82	2.785	64.7	No	4	25	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-05S	25	0.4464	100	No	4	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-10S	124.8	75.85	100	Yes	7	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-16S	44.78	8.675	100	No	7	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-17D	737.1	634.4	100	Yes	4	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-17I	153.2	71.73	100	Yes	4	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-17S	109.2	12.32	100	Yes	4	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-19D	1024	768.4	100	Yes	4	0	No	0.01	Param.

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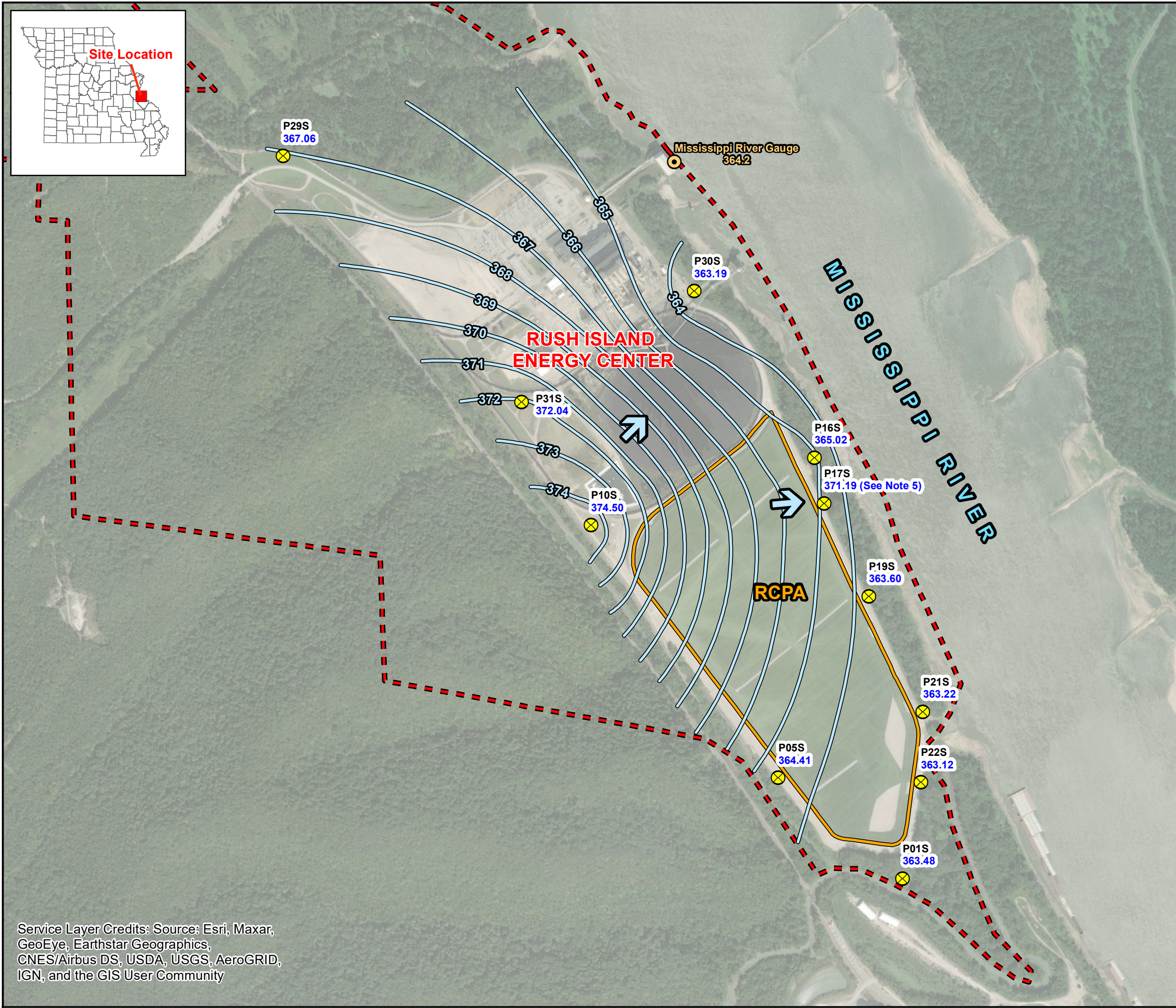
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
MOLYBDENUM, TOTAL (UG/L)	R-P-19I	339	218	100	Yes	4	0	No	0.0625	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	R-P-19S	19.58	-5.529	100	No	4	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-21D	475.7	72.78	100	Yes	4	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-21I	200.5	50.09	100	Yes	4	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-21S	9.631	-1.681	100	No	4	25	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-22D	378.6	338.9	100	Yes	4	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-22S	10.86	7.838	100	No	4	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-30S	2.3	0.85	100	No	7	71.43	No	0.008	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-P-31S	8.609	6.557	100	No	6	0	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	R-P-05S	1.277	0.691	5	No	4	75	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-10S	0.995	0.673	5	No	4	100	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-16S	0.8435	0.4655	5	No	4	100	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-17D	1.053	0.544	5	No	4	100	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-17I	1.27	0.891	5	No	4	100	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-17S	1.096	0.6855	5	No	4	100	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-19D	0.861	0.809	5	No	4	100	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-19I	1.377	0.906	5	No	4	100	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-19S	2.649	0.7255	5	No	4	25	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	R-P-21D	4.864	-0.5444	5	No	4	50	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	R-P-21I	1.327	0.465	5	No	4	100	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-21S	1.98	0.765	5	No	4	75	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-22D	1.187	0.5985	5	No	4	100	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-22S	1.196	0.6985	5	No	4	75	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-30S	1.347	0.6415	5	No	4	100	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-31S	0.922	0.776	5	No	4	100	No	0.0625	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-05S	0.2702	0.1398	50	No	4	50	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-10S	0.2	0.09	50	No	4	75	No	0.0625	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-16S	13.72	0.02771	50	No	4	0	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17D	0.3732	0.1668	50	No	4	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17I	2.477	1.173	50	No	4	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17S	0.8243	0.1357	50	No	4	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19D	0.4298	0.2752	50	No	4	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19I	5.889	0.2113	50	No	4	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19S	0.09	0.09	50	No	4	100	No	0.0625	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-21D	0.09	0.09	50	No	4	100	No	0.0625	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-21I	0.7712	0.2438	50	No	4	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-21S	0.4169	0.2431	50	No	4	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-22D	1.159	0.321	50	No	4	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-22S	0.52	0.09	50	No	4	75	No	0.0625	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-30S	2.696	0.05931	50	No	4	25	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-31S	0.09	0.09	50	No	4	100	No	0.0625	NP (NDs)

APPENDIX E

2021 Potentiometric Surface Maps



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LEGEND

- Approximate Rush Island Energy Center Property
- Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

- Mississippi River Gauge
- Corrective Action Monitoring Wells

Groundwater Elevation Contour (FT MSL)

- 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 OBTAINED BY GOLDER.
- 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.

0 500 1,000 2,000
 Feet

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PROJECT
 CCR GROUNDWATER MONITORING PROGRAM



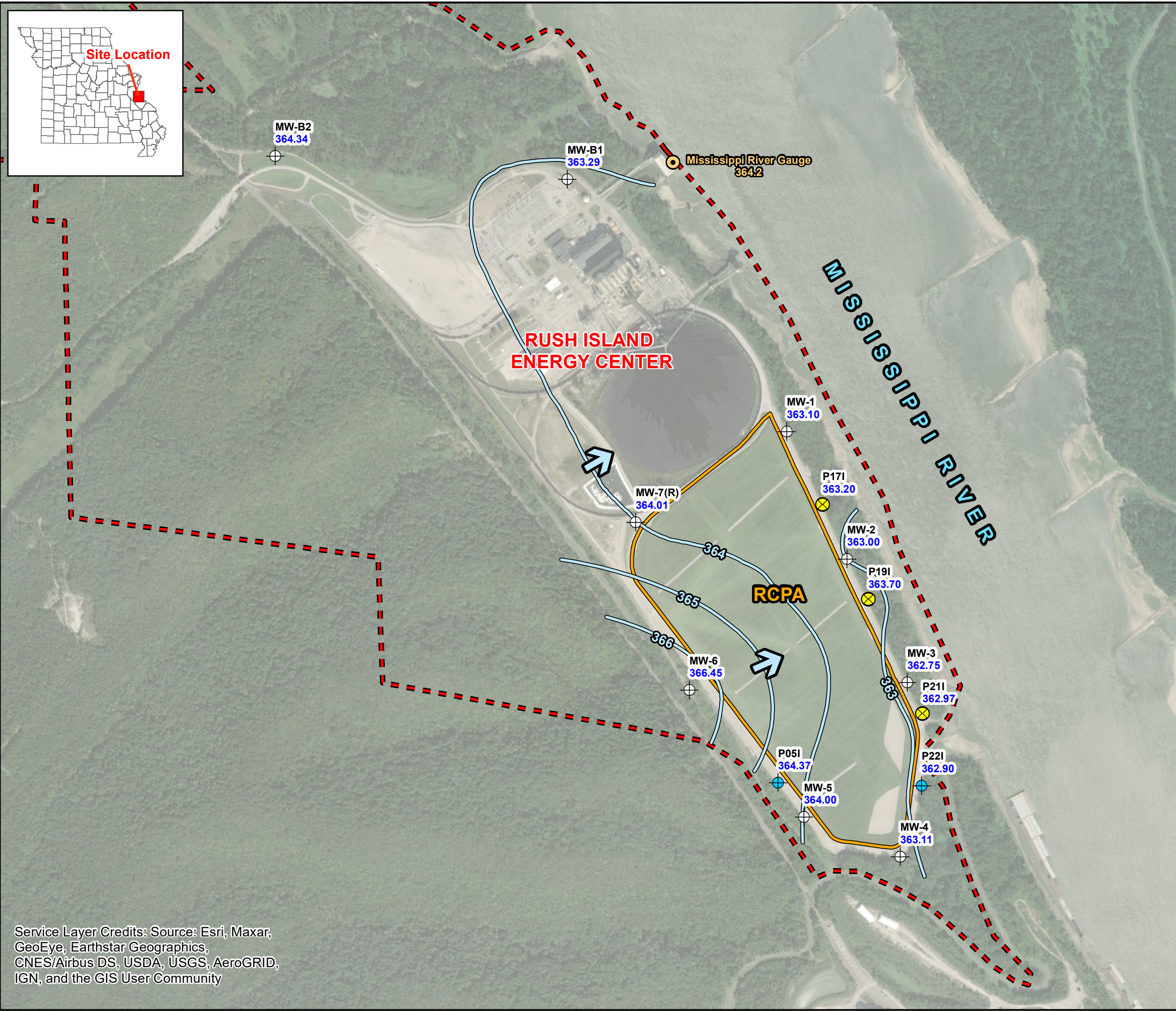
TITLE
RCPA POTENTIOMETRIC SURFACE MAP - SHALLOW ALLUVIAL AQUIFER ZONE - JANUARY 7, 2021

CONSULTANT	DATE
GOLDER MEMBER OF WSP	YYYY-MM-DD 2021-12-17
	PREPARED BTT
	DESIGN JSI
	REVIEW EMS
	APPROVED MNH

PROJECT No. 153140603 PHASE 0002 FIGURE **E1**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



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
- ⊕ Monitoring Well Used for Water Level Elevation Measurements Only

Groundwater Elevation Contour (FT MSL)

- 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 OBTAINED BY GOLDER.
- 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.



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PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - INTERMEDIATE ALLUVIAL AQUIFER ZONE - JANUARY 7, 2021

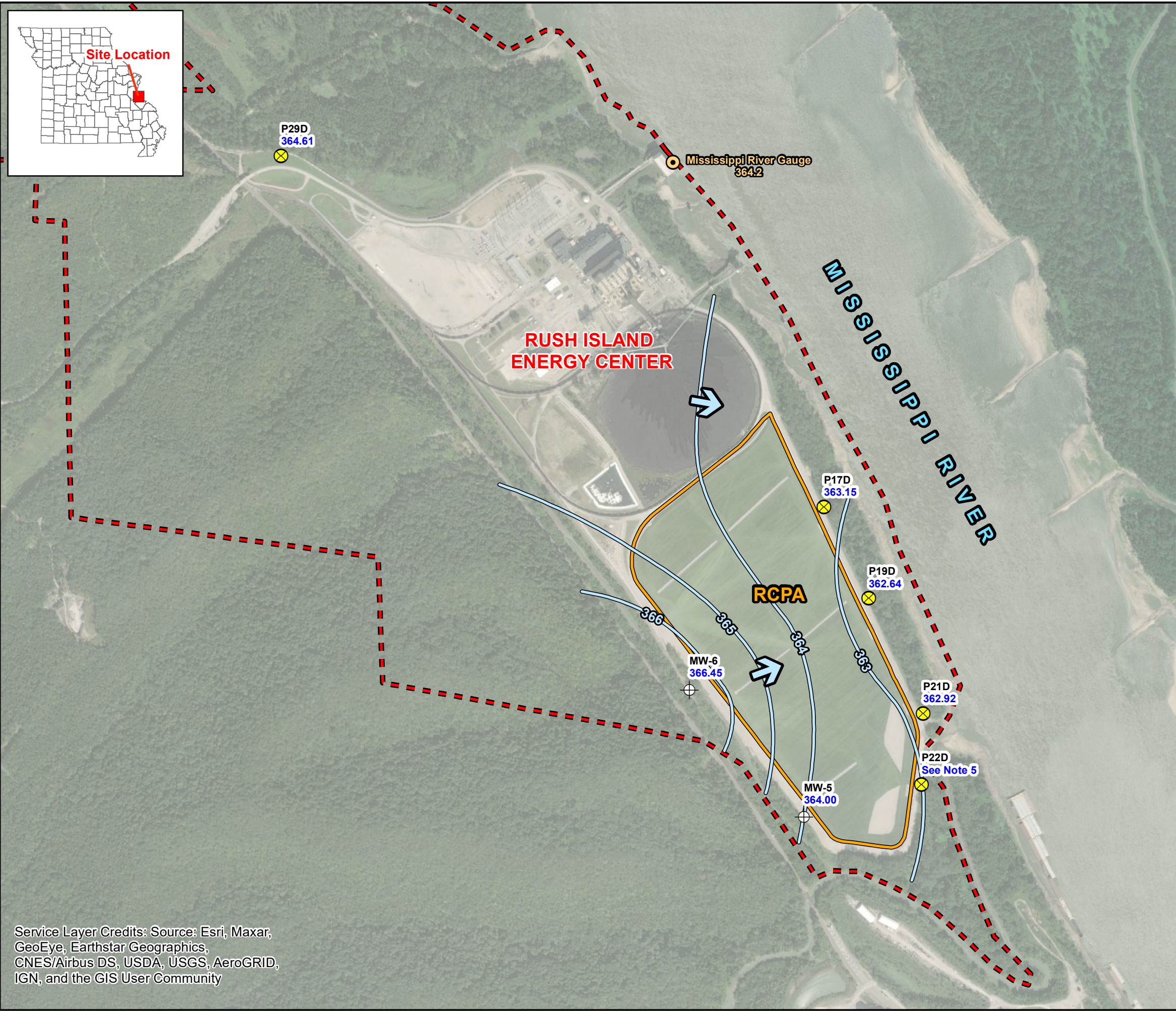
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GOLDER MEMBER OF WSP	YYYY-MM-DD	2021-12-17
	PREPARED	BTT
	DESIGN	JSI
	REVIEW	EMS
	APPROVED	MNH

PROJECT No. 153140603 PHASE 0002 FIGURE **E2**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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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 (FT MSL)

- 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 OBTAINED BY GOLDER.
- 4.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.
- 5.) A GROUNDWATER ELEVATION MEASUREMENT WAS NOT OBTAINED AT P-22D DUE TO DAMAGE TO THE WELL CASING.

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.



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PROJECT
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TITLE
RCPA POTENTIOMETRIC SURFACE MAP - DEEP ALLUVIAL AQUIFER ZONE - JANUARY 7, 2021

CONSULTANT	DATE	DESCRIPTION
GOLDER MEMBER OF WSP	YYYY-MM-DD	2021-12-17
	PREPARED	BTT
	DESIGN	JSI
	REVIEW	EMS
	APPROVED	MNH

PROJECT No. 153140603 PHASE 0002 FIGURE **E3**

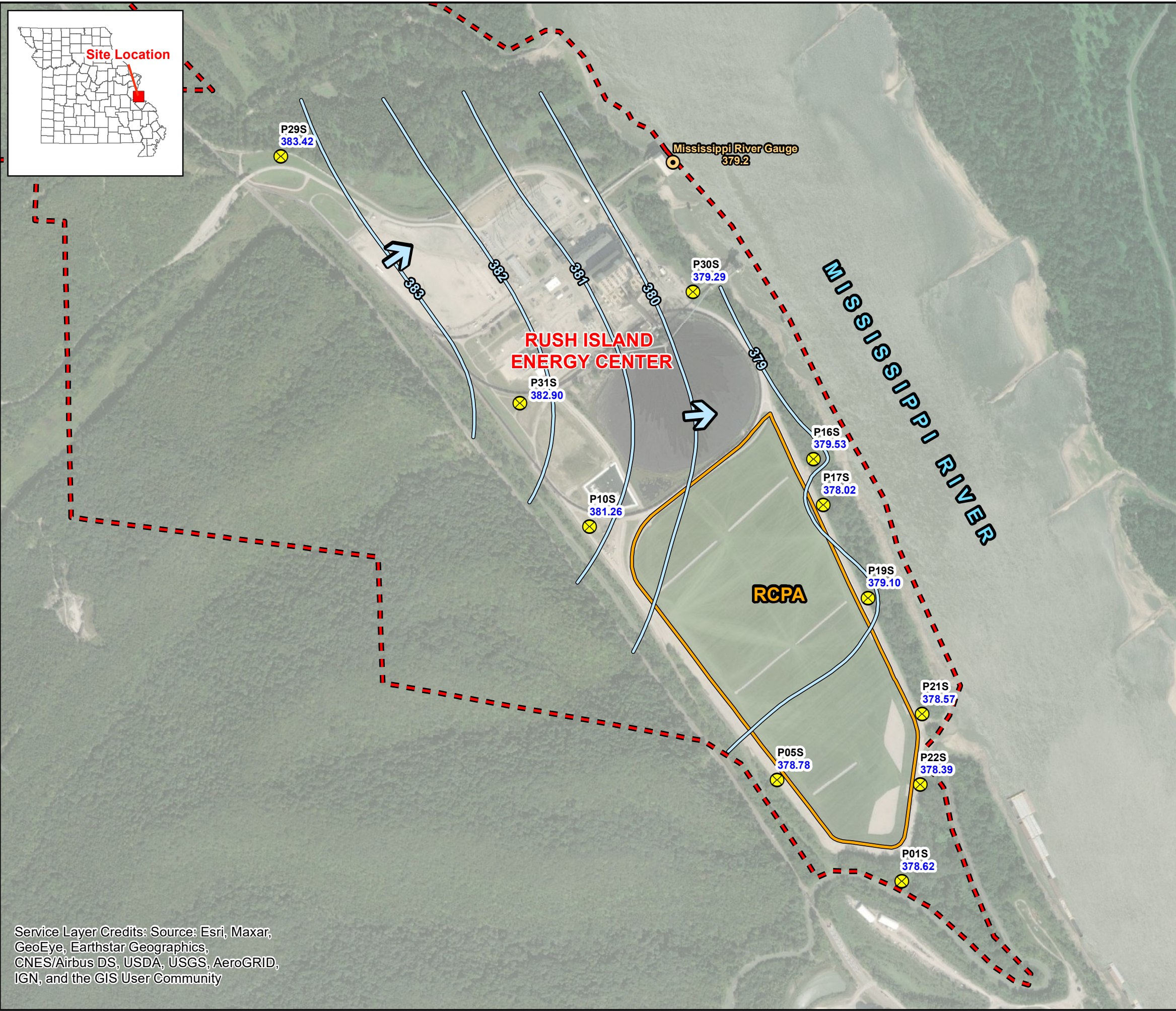
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LEGEND

- Approximate Rush Island Energy Center Property
- Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

- Mississippi River Gauge
- Corrective Action Monitoring Wells

Groundwater Elevation Contour (FT MSL)

- 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 OBTAINED BY GOLDER.
 - 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.

0 500 1,000 2,000
Feet

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PROJECT
CCR GROUNDWATER MONITORING PROGRAM

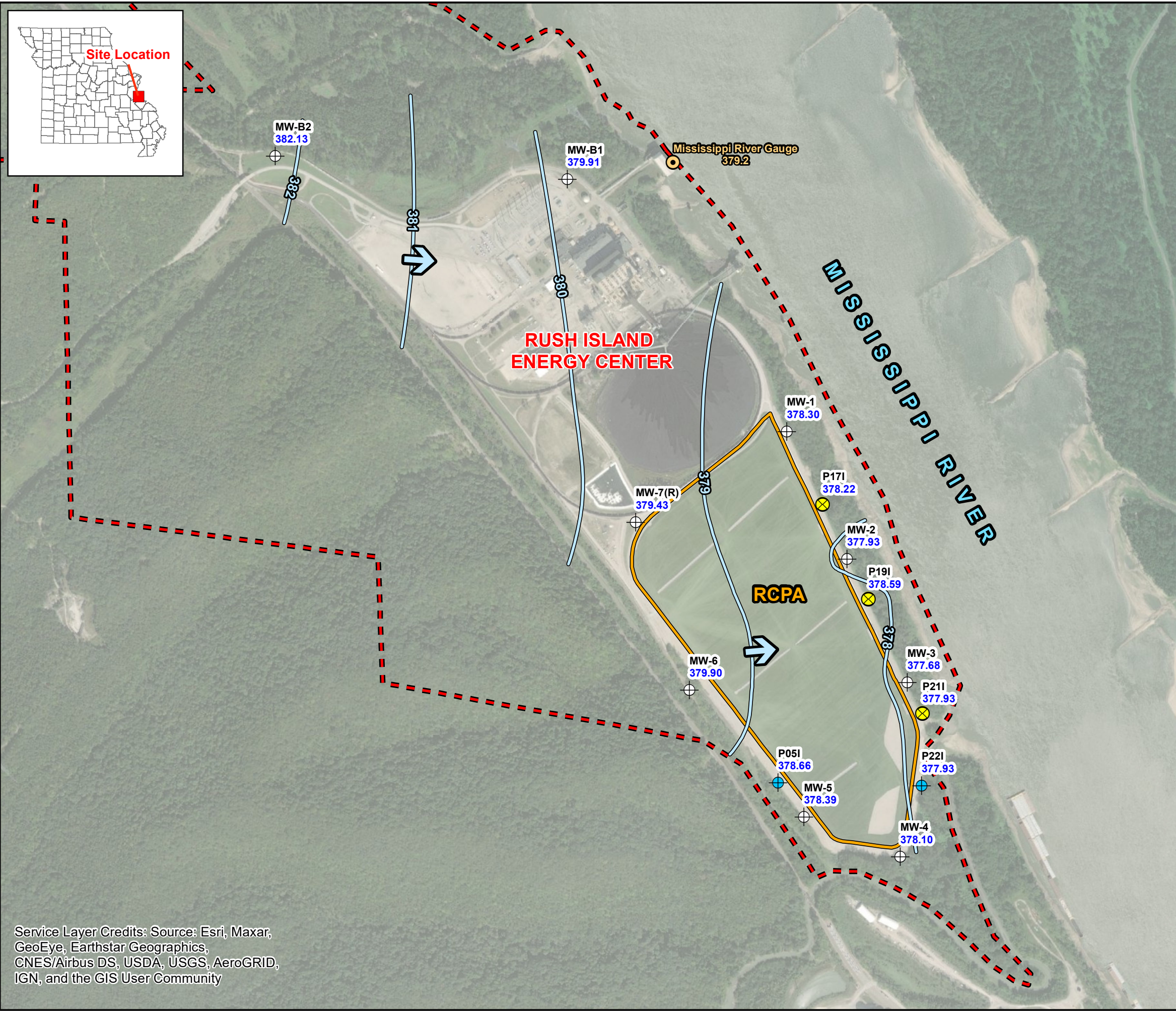
TITLE
RCPA POTENTIOMETRIC SURFACE MAP - SHALLOW ALLUVIAL AQUIFER ZONE - APRIL 21, 2021

CONSULTANT	DATE	BY
GOLDER MEMBER OF WSP	YYYY-MM-DD	2021-12-17
	PREPARED	BTT
	DESIGN	JSI
	REVIEW	JSI
	APPROVED	MNH

PROJECT No. 153140603 PHASE 0002 FIGURE **E4**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



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
- ⊕ Monitoring Well Used for Water Level Elevation Measurements Only

Groundwater Elevation Contour (FT MSL)

- 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 OBTAINED BY GOLDER.
- 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.



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PROJECT
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TITLE
RCPA POTENTIOMETRIC SURFACE MAP - INTERMEDIATE ALLUVIAL AQUIFER ZONE - APRIL 21, 2021

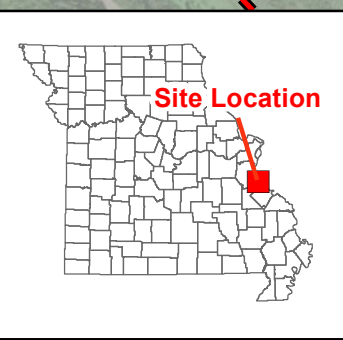
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GOLDER MEMBER OF WSP	YYYY-MM-DD	2021-12-17	
	PREPARED		BTT
	DESIGN		JSI
	REVIEW		JSI
	APPROVED		MNH

PROJECT No. 153140603 PHASE 0002 FIGURE **E5**

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Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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P29D
382.38

Mississippi River Gauge
379.2

RUSH ISLAND ENERGY CENTER

MISSISSIPPI RIVER

RCPA

P17D
378.26

P19D
377.58

MW-6
379.90

P21D
377.79

P22D
377.85

MW-5
378.39

LEGEND

- Approximate Rush Island Energy Center Property Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

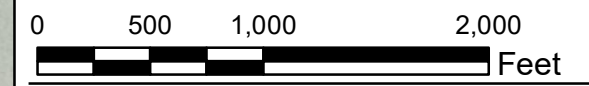
- Mississippi River Gauge
- CCR Rule Monitoring Wells
- Corrective Action Monitoring Wells

Groundwater Elevation Contour (FT MSL)

- 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 OBTAINED BY GOLDER.
 - 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.



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PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - DEEP ALLUVIAL AQUIFER ZONE - APRIL 21, 2021

CONSULTANT	DATE	DESCRIPTION
GOLDER MEMBER OF WSP	YYYY-MM-DD	2021-12-17
	PREPARED	BTT
	DESIGN	JSI
	REVIEW	EMS
	APPROVED	MNH

PROJECT No. 153140603 PHASE 0002 FIGURE **E6**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



LEGEND

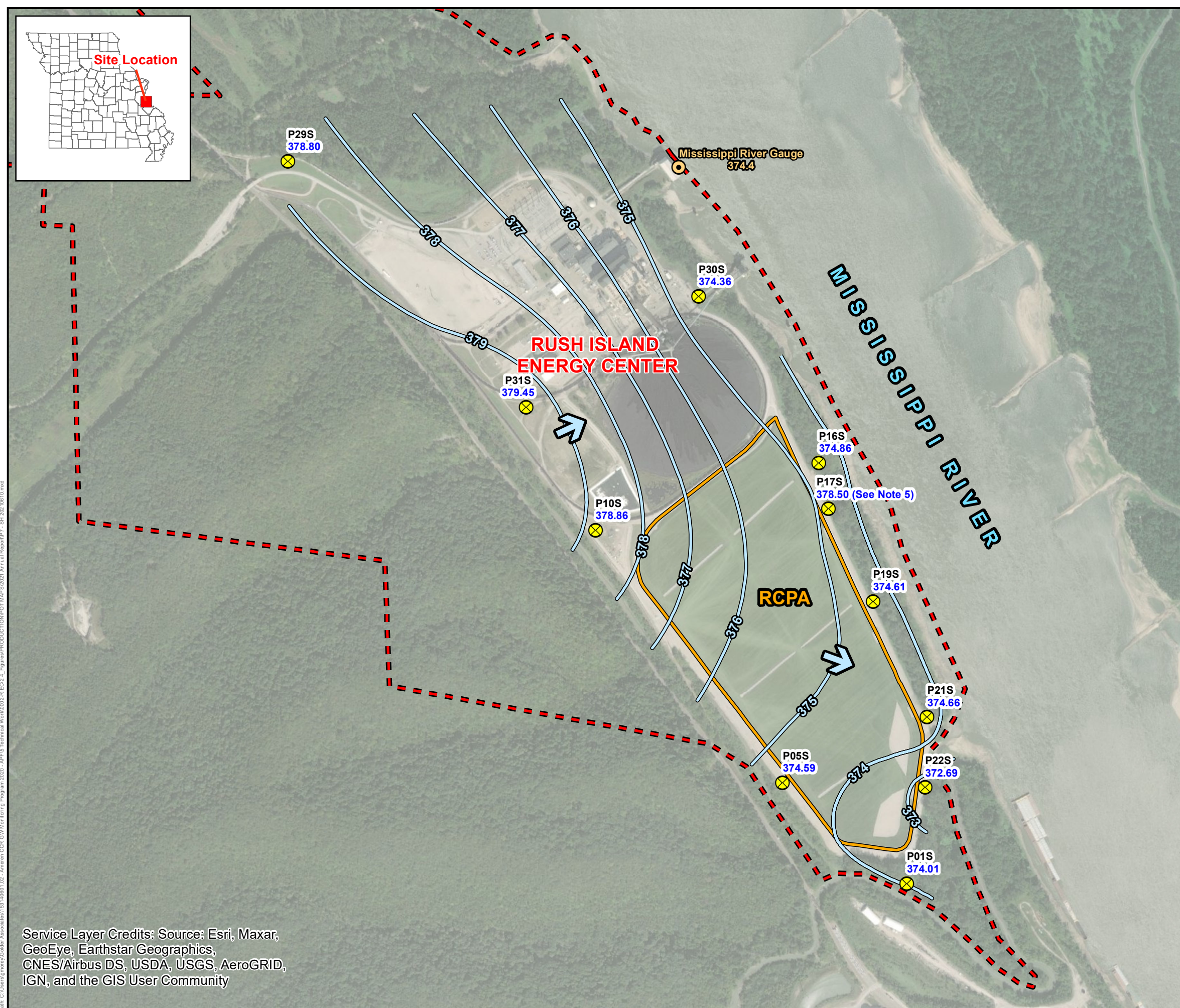
- Approximate Rush Island Energy Center Property Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

- Mississippi River Gauge
- Corrective Action Monitoring Wells

Groundwater Elevation Contour (FT MSL)

- 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 OBTAINED BY GOLDER.
- 4.) MISSISSIPPI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
- 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.
- 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 07010000 (ST. LOUIS) AND 07020500 (CHESTER).



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TITLE
RCPA POTENTIOMETRIC SURFACE MAP - SHALLOW ALLUVIAL AQUIFER ZONE - JUNE 10, 2021

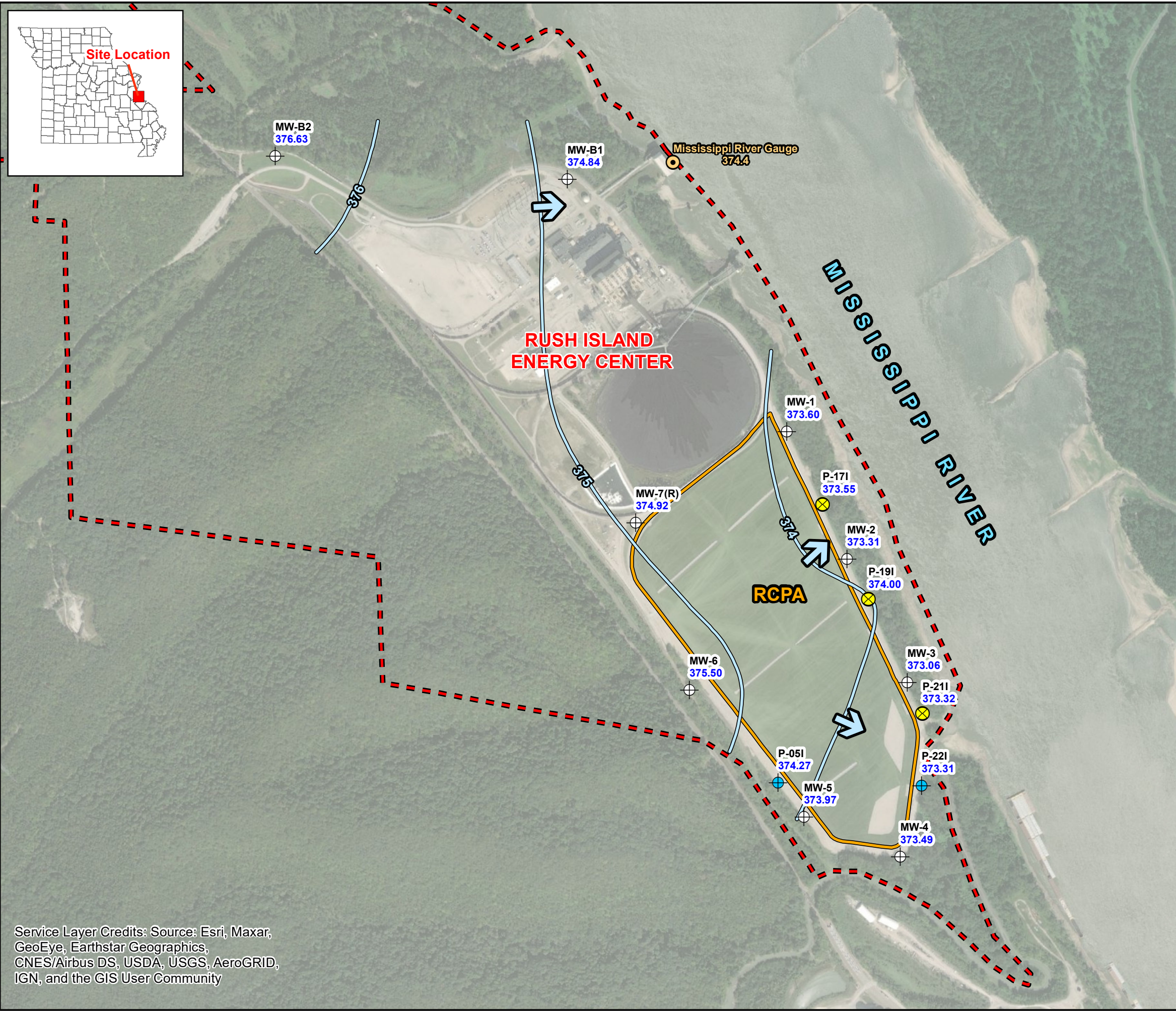
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GOLDER MEMBER OF WSP	YYYY-MM-DD
	2021-12-17
	PREPARED
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	DESIGN
JSI	
REVIEW	
BTT	
APPROVED	
MNH	

PROJECT No. 153140603 PHASE 0002 FIGURE **E7**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



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
- ⊕ Monitoring Well Used for Water Level Elevation Measurements Only

Groundwater Elevation Contour (FT MSL)

- Groundwater Elevation Contour (FT MSL)
- ➔ Groundwater Flow Direction

NOTES

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- 4.) MISSISSIPPI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.

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.
- 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 07010000 (ST. LOUIS) AND 07020500 (CHESTER).



CLIENT
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PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - INTERMEDIATE ALLUVIAL AQUIFER ZONE - JUNE 10, 2021

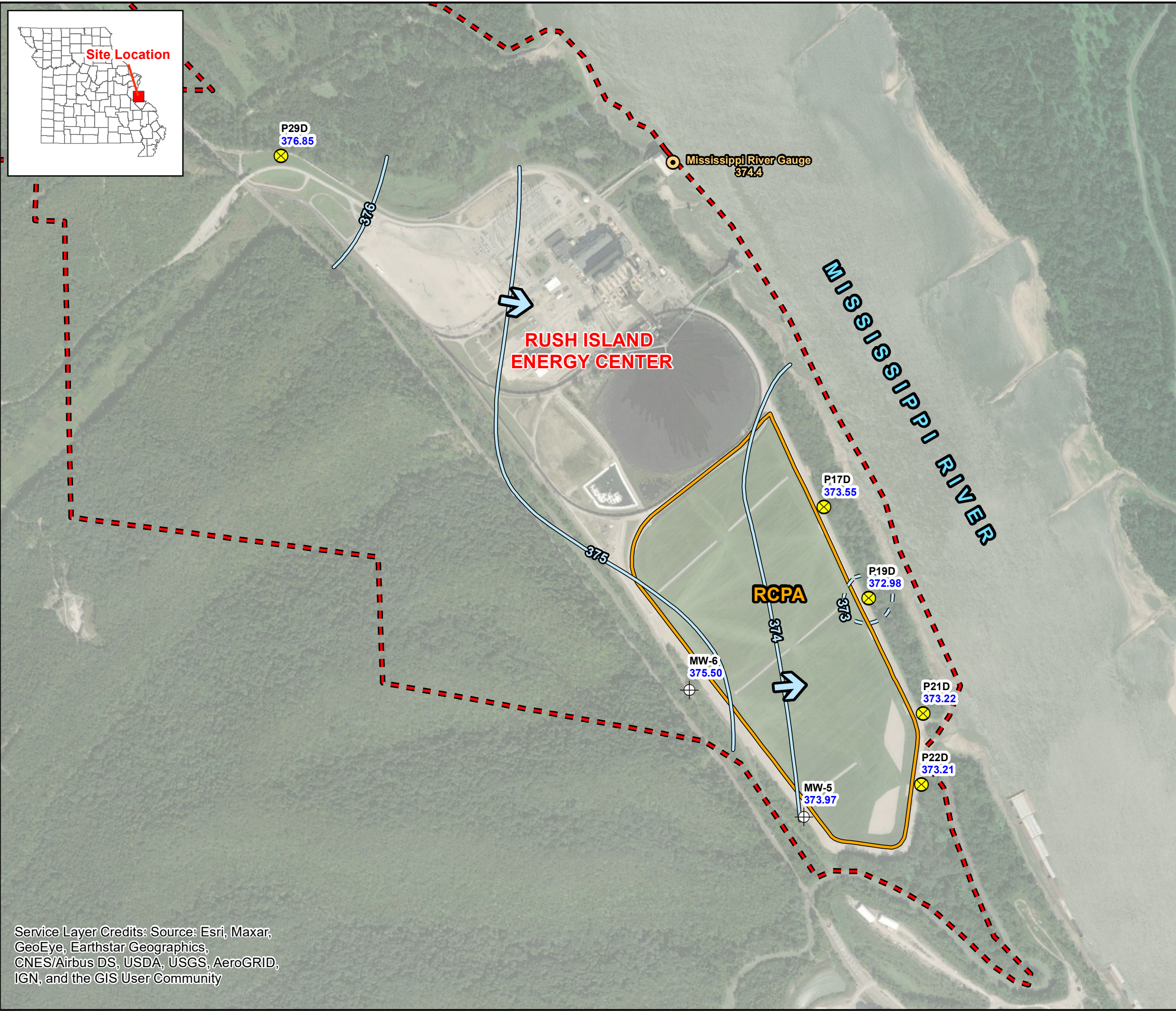
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GOLDER MEMBER OF WSP	PREPARED	ETF
	DESIGN	JSI
	REVIEW	BTT
	APPROVED	MNH

PROJECT No. 153140603 PHASE 0002 FIGURE **E8**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11x17



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 (FT MSL)

- 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).
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- 4.) MISSISSIPPI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.

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.
- 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 07010000 (ST. LOUIS) AND 07020500 (CHESTER).



CLIENT
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PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - DEEP ALLUVIAL AQUIFER ZONE - JUNE 10, 2021

CONSULTANT	YYYY-MM-DD	2021-12-17
GOLDER MEMBER OF WSP	PREPARED	ETF
	DESIGN	JSI
	REVIEW	BTT
	APPROVED	MNH

PROJECT No. 153140603 PHASE 0002 FIGURE **E9**

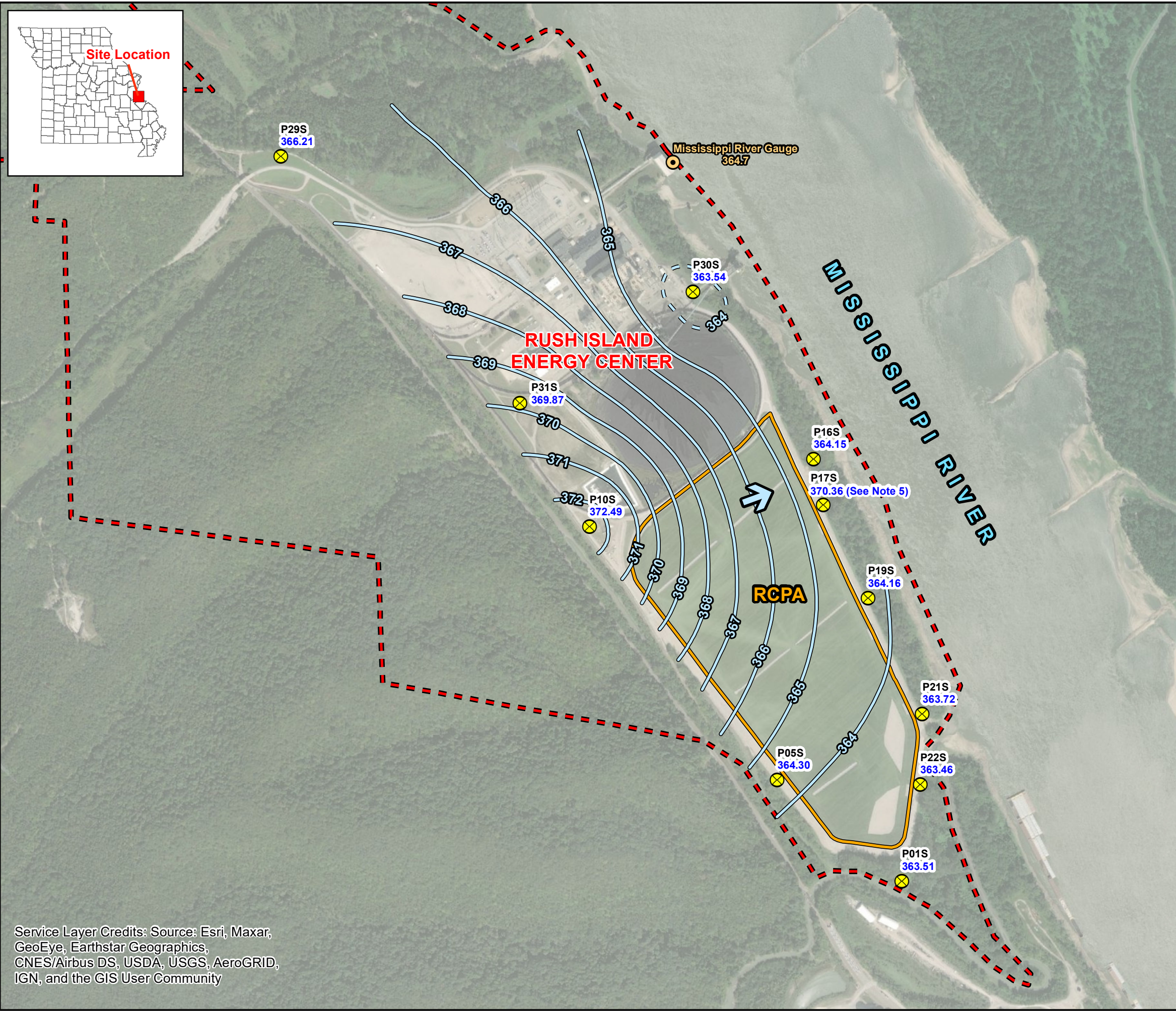
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LEGEND

- Approximate Rush Island Energy Center Property Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

- Mississippi River Gauge
- Corrective Action Monitoring Wells

Groundwater Elevation Contour (FT MSL)

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)
- Groundwater Flow Direction

NOTES

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- 2.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) BASED ON THE MISSISSIPPI RIVER ELEVATIONS PROVIDED BY AMEREN, THE RIVER ELEVATION RANGED FROM 463.31 FT MSL AT 08:00 TO 466.33 FT MSL AT 16:00. THE VALUE OF 364.7 AT 12:00 WAS USED FOR THE POTENTIOMETRIC SURFACE MAP.
- 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.

0 500 1,000 2,000 Feet

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PROJECT
CCR GROUNDWATER MONITORING PROGRAM

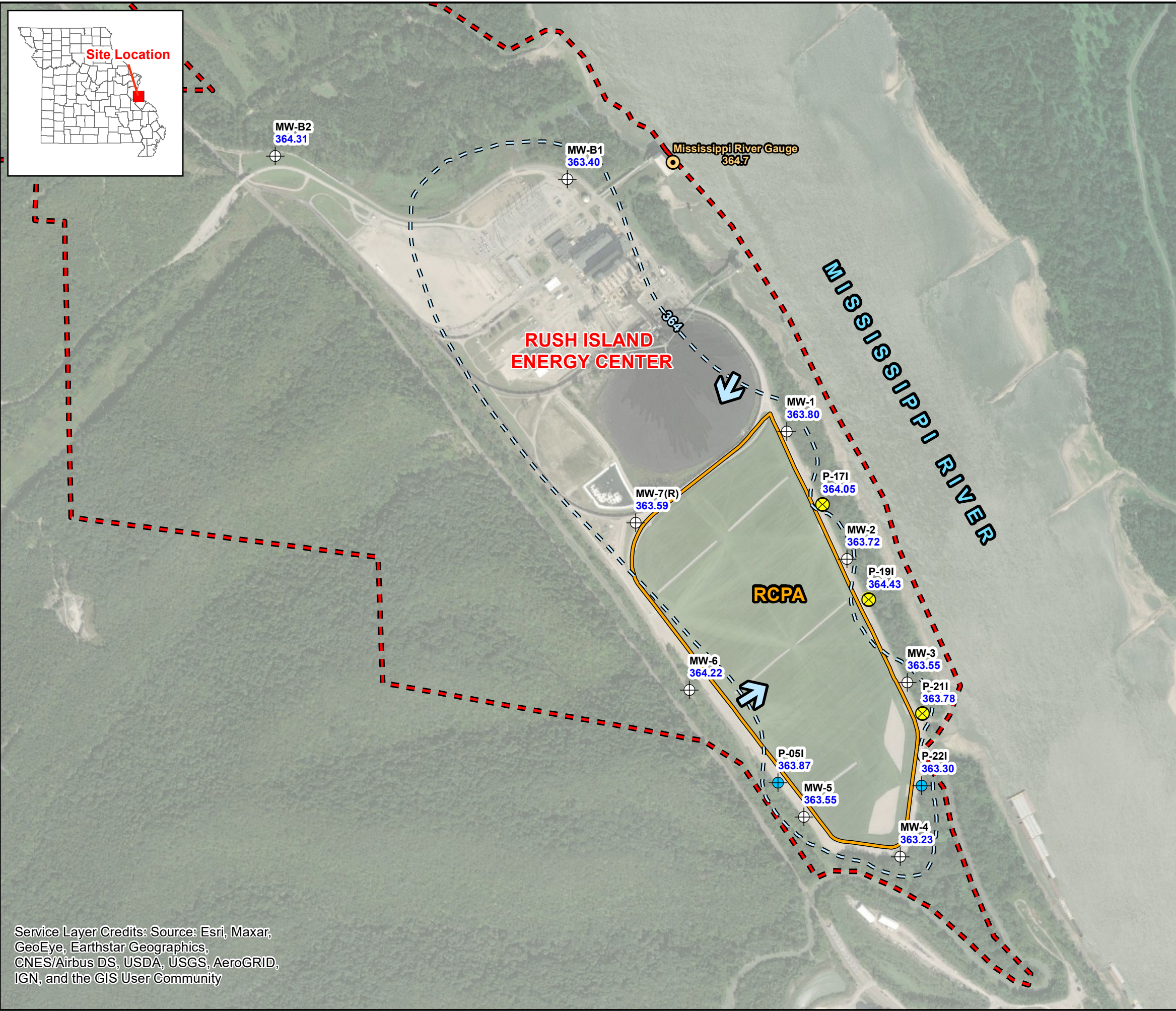
TITLE
RCPA POTENTIOMETRIC SURFACE MAP - SHALLOW ALLUVIAL AQUIFER ZONE - OCTOBER 25, 2021

CONSULTANT	YYYY-MM-DD	2021-12-17
GOLDER MEMBER OF WSP	PREPARED	ETF
	DESIGN	JSI
	REVIEW	EMS
	APPROVED	MNH

PROJECT No. 153140603 PHASE 0002 FIGURE E10

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



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
- Monitoring Well Used for Water Level Elevation Measurements Only

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 OBTAINED BY GOLDER.
- 4.) BASED ON THE MISSISSIPPI RIVER ELEVATIONS PROVIDED BY AMEREN, THE RIVER ELEVATION RANGED FROM 463.31 FT MSL AT 08:00 TO 466.33 FT MSL AT 16:00. THE VALUE OF 364.7 AT 12:00 WAS USED FOR THE POTENTIOMETRIC SURFACE MAP.

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.



CLIENT
 AMEREN MISSOURI
 RUSH ISLAND ENERGY CENTER



PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
**RCPA POTENTIOMETRIC SURFACE MAP - INTERMEDIATE
 ALLUVIAL AQUIFER ZONE - OCTOBER 25, 2021**

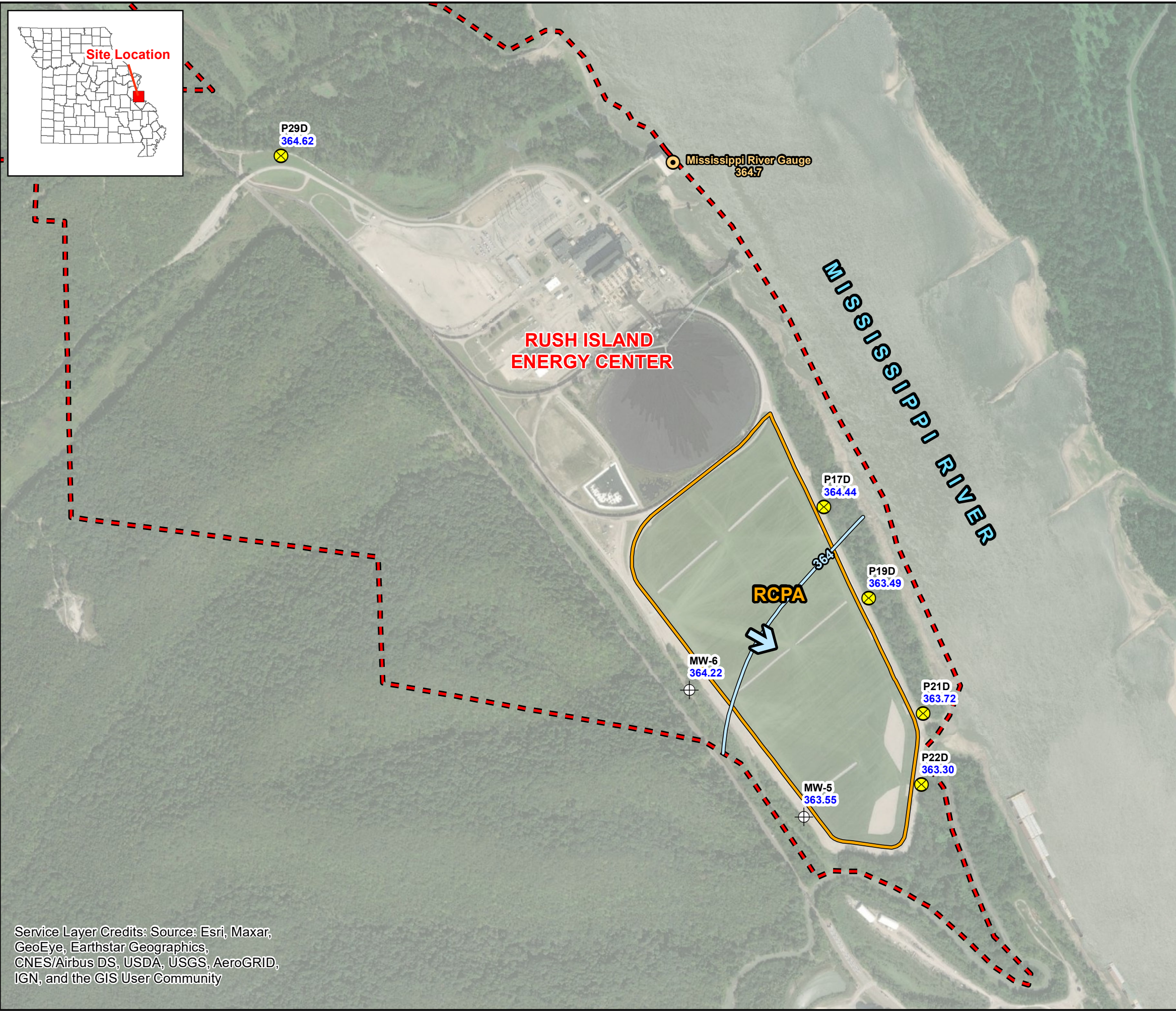
CONSULTANT	YYYY-MM-DD	2021-12-17
GOLDER MEMBER OF WSP	PREPARED	ETF
	DESIGN	JSI
	REVIEW	EMS
	APPROVED	MNH

PROJECT No. 153140603 PHASE 0002 FIGURE **E11**

Path: C:\Users\jgolder\Documents\153140603_02 - Ameren CCR GW Monitoring Program 2020 - APTIS Technical Work\002-21E02-4 - Figures\PRODUCTION\DOT MAP\S2021 Annual Report\F011 - In 2021.025 - Copy.mxd

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11x



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 (FT MSL)

- 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 OBTAINED BY GOLDER.
- 4.) BASED ON THE MISSISSIPPI RIVER ELEVATIONS PROVIDED BY AMEREN, THE RIVER ELEVATION RANGED FROM 463.31 FT MSL AT 08:00 TO 466.33 FT MSL AT 16:00. THE VALUE OF 364.7 AT 12:00 WAS USED FOR THE POTENTIOMETRIC SURFACE MAP.

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.



CLIENT
 AMEREN MISSOURI
 RUSH ISLAND ENERGY CENTER



PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - DEEP ALLUVIAL AQUIFER ZONE - OCTOBER 25, 2021

CONSULTANT	YYYY-MM-DD	2021-12-17
GOLDER MEMBER OF WSP	PREPARED	BTT
	DESIGN	JSI
	REVIEW	EMS
	APPROVED	MNH

PROJECT No. 153140603 PHASE 0002 **FIGURE E12**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Path: C:\Users\gms\MyGolder\Assemblies\153140603_02 - Ameren CCR GW Monitoring Program 2020 - APTIS Technical Work\002-REC2-4_Figures\PRODUCTION\DOT_MAP\S12021_AnnualReportE12_DP_20211025.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11x17



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