



GOLDER

2020 Annual Groundwater Monitoring and Corrective Action Report

Meramec Energy Center, St. Louis County, Missouri, USA

Submitted to:

Ameren Missouri

1901 Chouteau Avenue, St. Louis, Missouri 63103

Submitted by:

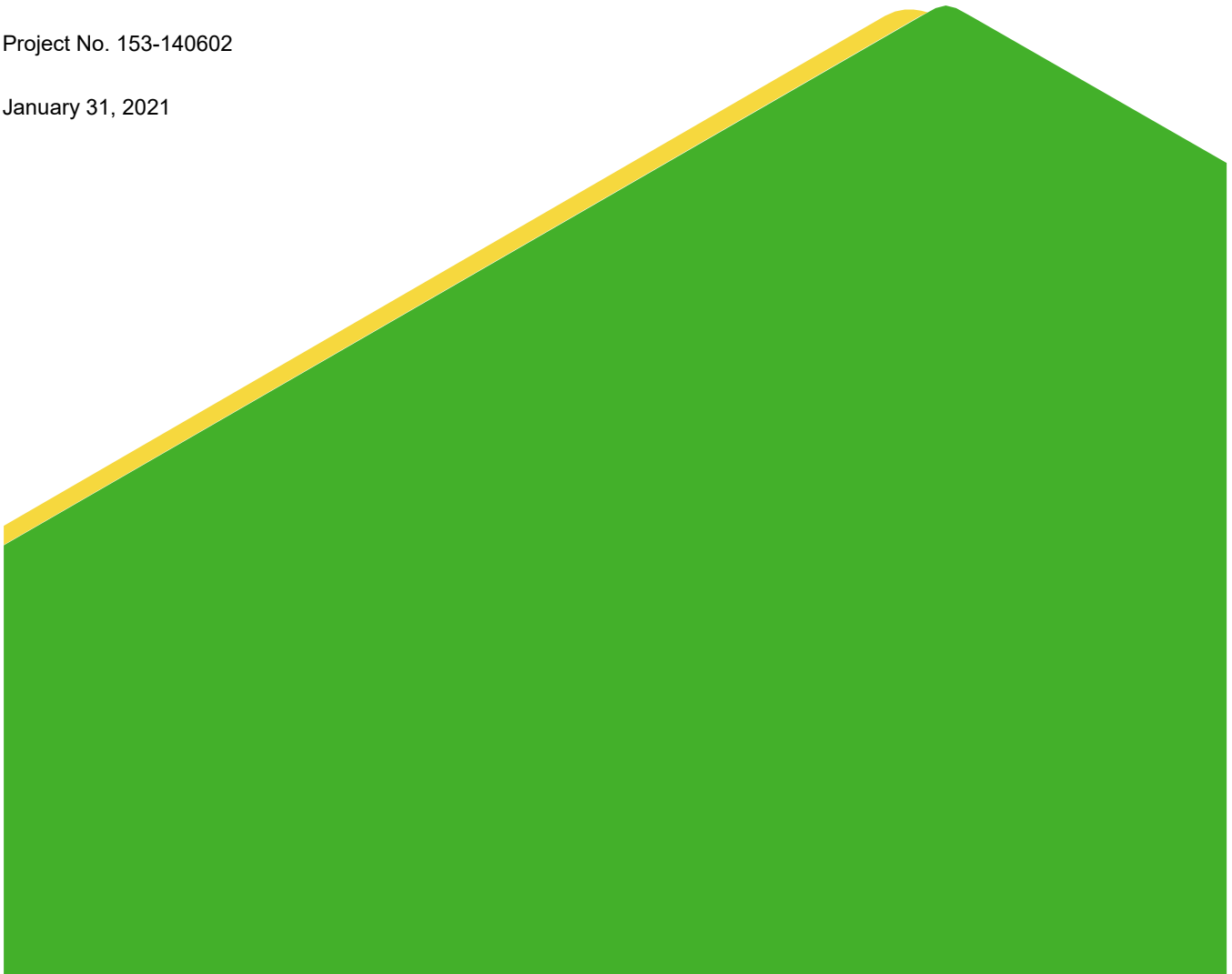
Golder Associates Inc.

13515 Barrett Parkway Drive, Suite 260, Ballwin, Missouri, USA 63021

+1 314 984-8800

Project No. 153-140602

January 31, 2021



1.0 EXECUTIVE SUMMARY AND STATUS OF THE MEC SURFACE IMPOUNDMENTS GROUNDWATER MONITORING PROGRAM

This annual report was developed to meet the requirements of United States Environmental Protection Agency (USEPA) 40 CFR Part 257 “Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule” (the CCR Rule). The CCR Rule requires owners or operators of existing CCR units to produce an Annual Groundwater Monitoring and Corrective Action Report (Annual Report) each year (§ 257.90(e)). Ameren Missouri (Ameren) has determined that the Coal Combustion Residuals (CCR) surface impoundments at the Meramec Energy Center (MEC) are subject to the requirements of the CCR Rule. This Annual Report for the MEC Surface Impoundments describes CCR Rule groundwater monitoring activities from January 1, 2020 through December 31, 2020, including verification results related to late 2019 sampling.

Throughout 2020, the multi-unit monitoring well network for the Meramec Surface Impoundments has been in Corrective Action Monitoring with Detection and Assessment Monitoring continuing concurrently. Semi-annual groundwater sampling associated with Detection Monitoring has been ongoing since it was initiated on October 17, 2017 as required by the CCR Rule. As a part of Detection Monitoring, statistical evaluations are completed after each sampling event to determine if there are any values at a Statistically Significant Increase (SSI) over background. SSIs have been determined for each sampling event and a summary of the SSIs for the past year is provided in **Table 1**.

The Assessment Monitoring program was established for the MEC Surface Impoundments 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, Lithium, and Molybdenum were present at an SSL. A summary of SSLs for the past year is provided in **Table 1**.

Table 1 – Summary of 2020 MEC Sampling Events, Previous Year Verification, and Statistical Evaluations

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
November-December 2019 Sampling Event	Detection & Assessment Monitoring, November 18-19, 2019 and December 20, 2019	December 16, 2019 and January 13, 2020	Appendix III, Detected Appendix IV (See Note 1), & Major Cations and Anions	Boron: MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10 Calcium: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-10 Fluoride: MW-7 Sulfate: MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8 TDS: MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-10	Arsenic: MW-4, MW-5, MW-9 Lithium: MW-6, MW-7 Molybdenum: MW-6, MW-7, MW-8	March 2, 2020
	Verification Sampling, January 8, 2020	January 17, 2020	Detected Appendix III parameters (See Note 2)			
May 2020 Sampling Event	Detection & Assessment Monitoring, May 4-11, 2020	June 3, 2020	Appendix III, Appendix IV, & Major Cations and Anions	Boron: MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8 Calcium: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8 Sulfate: MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8 TDS: MW-4, MW-5, MW-6, MW-7, MW-8	Arsenic: MW-4, MW-5 Lithium: MW-6, MW-7 Molybdenum: MW-5, MW-6, MW-7, MW-8	September 1, 2020
	No Verification Sampling was required. No new SSIs were observed in the May 2020 sampling event.					

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
November 2020 Sampling Event	Detection & Assessment Monitoring, November 9-10, 2020	December 14, 2020	Appendix III, Detected Appendix IV (See Note 3), & Major Cations and Anions	To be determined after statistical analysis and Verification Sampling are completed in 2021.		

Notes:

- 1) Testing was completed for Appendix IV analytes that were detected above the Practical Quantitation Limit (PQL) during the August 2019 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 May 2020 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 the CMA report on May 20, 2019. A public meeting was held on May 30, 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 and use of Monitored Natural Attenuation (MNA) as its chosen corrective action remedial plan. The Remedy Selection Report's remedial plan consists of two 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.

Historically, the MEC has managed CCR generated from the facility at nine (9) surface impoundments. A figure displaying the names and locations of these impoundments is provided in **Figure 1**. The following provides the status of the different surface impoundments:

- Active Surface Impoundments – MCPA, MCPB, MCPC, and MCPD
- Closed Surface Impoundments – MCPE (closed April 11, 2018)
- Exempt Surface Impoundments – MOPF, MOPG, MOPH, and MOPI

On August 28, 2020, the USEPA issued revisions to the CCR Rule that require all unlined surface impoundments to initiate closure by April 11, 2021 unless an alternative deadline is requested and approved. To comply with these regulations, Ameren has completed and posted to its website a "Request for a Site-Specific Alternative Closure Date" where closure of the MCPA, MCPB, and MCPC CCR units are scheduled to be completed by October 2023. Therefore, the multi-unit network that monitors the MEC is anticipated to remain in Phase 1 of the corrective action remedial plan discussed in the Remedy Selection Report until 2023.

In addition to the Remedy Selection Report, the CCR Rule outlines that, at a minimum, Corrective Action Monitoring program must meet the requirements of an Assessment Monitoring program under §257.95 (Assessment Monitoring Program). Therefore, to comply with the requirements of the CCR Rule, three (3) baseline sampling events were completed in 2020 for the Corrective Action Monitoring Well Network.

Table of Contents

1.0 EXECUTIVE SUMMARY AND STATUS OF THE MEC SURFACE IMPOUNDMENTS GROUNDWATER MONITORING PROGRAM	ES-1
2.0 INSTALLATION OR DECOMMISSIONING OF MONITORING WELLS	1
3.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION	1
3.1 Detection Monitoring Program	1
3.2 Assessment Monitoring Program	1
3.3 Corrective Action Monitoring Program	2
3.4 Groundwater Elevation, Flow Rate and Direction	2
3.5 Sampling Issues	3
4.0 ACTIVITIES PLANNED FOR 2021.....	4

TABLES

Table 1 - Summary of 2020 MEC Sampling Events, Previous Year Verification, and Statistical Evaluations
Table 2 - Summary of Well Construction Details
Table 3 - Summary of Detection and Assessment Groundwater Network Sampling Dates
Table 4 - Summary of Corrective Action Groundwater Network Sampling Dates
Table 5 - November-December 2019 Detection Monitoring Results
Table 6 - May 2020 Detection Monitoring Results
Table 7 - November 2020 Detection Monitoring Results
Table 8 - November-December 2019 Assessment Monitoring Results
Table 9 - May 2020 Assessment Monitoring Results
Table 10 - November 2020 Assessment Monitoring Results
Table 11 - May-July 2020 Corrective Action Monitoring Results
Table 12 - June-August 2020 Corrective Action Monitoring Results
Table 13 - November 2020 Corrective Action Monitoring Results

FIGURES

Figure 1 - Meramec Energy Center Groundwater Monitoring Programs and Monitoring Well Location Map
--

APPENDICES

APPENDIX A - Monitoring Well Construction Diagrams
APPENDIX B - Laboratory Analytical Data
APPENDIX C - November-December 2019 Assessment Monitoring Statistical Evaluation
APPENDIX D - May 2020 Assessment Monitoring Statistical Evaluation
APPENDIX E - 2020 Potentiometric Surface Maps

2.0 INSTALLATION OR DECOMMISSIONING OF MONITORING WELLS

There are currently two different networks used for monitoring the MEC Surface Impoundments, the monitoring well network established under §257.91 for Detection and Assessment Monitoring and the network established under §257.98 for Corrective Action Monitoring, see **Figure 1**. Two (2) new monitoring wells (MW-11S and MW-11D) were installed in 2020 as a part of the Corrective Action Groundwater Monitoring Program. Well construction diagrams for these new wells are provided in **Appendix A**, and a summary of the well construction details for monitoring wells in both networks is provided in **Table 2**. Additionally, based on further evaluations of the site, MW-9 (AMW-1) and MW-10 (AMW-2) were removed from the Detection and Assessment Groundwater Monitoring Network after the November 2019 sampling event and added to the Corrective Action Monitoring Well Network prior to the May 2020 sampling event. Further details including well construction diagrams for these wells are provided in previous Annual Reports for the MEC Surface Impoundments.

3.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

The following sections review the sampling events completed for the MEC Surface Impoundments in 2020. **Tables 3** and **4** provide a summary of the groundwater samples collected in 2020 including the number of samples, the date of the sample collection, and the monitoring program for which the samples were collected. **Appendix B** provides laboratory analytical data for CCR Rule sampling events.

3.1 Detection Monitoring Program

A Detection Monitoring sampling event was completed November 18-19 and December 20, 2019. Verification sampling and the statistical analysis to evaluate for SSIs for the November-December 2019 event were not completed until 2020 and are therefore included in this report. Detections of Appendix III analytes triggered a Verification sampling event, which was completed on January 8, 2020 and verified SSIs. **Table 5** summarizes the results and the statistical analysis of the November 2019 Detection Monitoring event.

Detection Monitoring samples were collected May 4-11, 2020, and testing was completed for all Appendix III analytes, as well as major cations and anions. As discussed above, prior to this event, MW-9 (AMW-1) and MW-10 (AMW-2) were removed from the Detection and Assessment Monitoring Well Networks and added to the Corrective Action Monitoring Well Network. Statistical analysis of the data determined that there were no new SSIs. **Table 6** summarizes the results and the statistical analysis of the May 2020 Detection Monitoring event.

A Detection Monitoring sampling event was completed November 9-10, 2020 and testing was performed for all Appendix III analytes, as well as major cations and anions. Statistical analyses to evaluate for SSIs in the November 2020 data were not completed in 2020 and will be included in the 2021 Annual Report. **Table 7** summarizes the results of the November 2020 Detection Monitoring event.

3.2 Assessment Monitoring Program

An Assessment Monitoring sampling event was completed November 18-19 as well as December 20, 2019 and testing was completed for Appendix IV parameters detected during the August 2019 sampling event. The statistical evaluation for this event was completed in 2020 and is included in this report. **Table 8** summarizes the results of the November-December 2019 Assessment Monitoring event. Based on the analysis, two new SSL were identified in the November-December 2019 sampling event for Arsenic at monitoring well MW-9 and Lithium at MW-7. The results from this analysis and a table that displays the site-specific GWPS are provided in **Appendix C**. The SSLs for the MEC CCR Units for the November-December 2019 sampling event are:

- Arsenic at MW-4, MW-5, and MW-9 (AMW-1)
- Lithium at MW-6 and MW-7
- Molybdenum at MW-6, MW-7, and MW-8

An Assessment Monitoring sampling event was completed May 4-11, 2020 and testing was completed for all Appendix IV analytes. As discussed above, prior to this event, MW-9 (AMW-1) and MW-10 (AMW-2) were removed from the Detection and Assessment Monitoring Well Network and added to the Corrective Action Monitoring Well Network. Statistical analysis of the data is provided in **Appendix D** and determined there was one new SSL for Molybdenum at MW-5. **Table 9** summarizes the results of the May 2020 Assessment Monitoring event. The SSLs for the MEC Surface Impoundments for the May 2020 sampling event are as follows:

- Arsenic at MW-4 and MW-5
- Lithium at MW-6 and MW-7
- Molybdenum at MW-5, MW-6, MW-7, and MW-8

An Assessment Monitoring sampling event was completed November 9-10, 2020 and testing was completed for Appendix IV analytes that were detected above the Practical Quantitation Limit (PQL) during the May 2020 sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks. **Table 10** summarizes the results of the November 2020 Assessment Monitoring event; however, statistical analysis to evaluate SSLs was not completed in 2020. Results of the statistical evaluation will be included in the 2021 Annual Report.

3.3 Corrective Action Monitoring Program

The initial baseline Corrective Action sampling event was completed May 5 and July 23, 2020 and testing was completed for all Appendix IV analytes, as well as other selected MNA parameters and major cations and anions. A summary of the May-July 2020 Corrective Action sampling event results is provided in **Table 11**. A Corrective Action sampling event was completed June 22 and August 26, 2020 and testing was completed for all Appendix III analytes, detected Appendix IV analytes (above the PQL) from either the May-July 2020 Corrective Action sampling event or the May 2020 Assessment Monitoring sampling event, as well as major cations and anions. The results of the June-August 2020 Corrective Action sampling event are provided in **Table 12**.

A Corrective Action sampling event was completed November 9, 2020 and testing was completed for Appendix III analytes, detected Appendix IV parameters from the May 2020 and May-July 2020 sampling events, as well as major cations and anions. **Table 13** summarizes the results of the November 2020 Corrective Action sampling event.

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 within the uppermost aquifer is dynamic and influenced by seasonal changes in the water level in the adjacent Mississippi and Meramec Rivers. 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 potentiometric surface maps, a general flow direction from the northeast (bluffs) to the southwest (Mississippi and Meramec Rivers) under normal river conditions is expected. However, during periods of high river levels, groundwater flow can temporarily reverse in localized areas. 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 MEC using commercially available software. Results from this assessment indicate that while groundwater flow direction is somewhat variable, the overall net groundwater flow at the Meramec Surface Impoundments is from the bluffs toward the rivers. Horizontal gradients calculated by the program for the wells range from 0.0001 to 0.004 feet/foot with an estimated net annual groundwater movement of approximately 78 feet in the prevailing downgradient direction.

3.5 Sampling Issues

Some of the wells used for sampling at the MEC are located in the floodplain near the confluence of the Meramec and Mississippi Rivers. Of these, MW-9 (AMW-1) and TP-1 are very close to the Meramec River on the west side of the MEC property. These monitoring wells can be submerged by very minor flooding events that occur multiple times per year. This flooding caused a delay in the planned sampling dates. In 2020, it is estimated that these wells were at least partially submerged during the following dates:

- January 2-3
- January 11-20
- February 6-11
- March 12 - June 27
- July 2-8

In addition to MW-9 (AMW-1) and TP-1, other monitoring wells at the MEC are also located in the floodplain near the confluence of the Meramec and Mississippi Rivers. These monitoring wells can be submerged by minor flooding events that can occur multiple times per year. This caused a delay in the planned sampling dates of some of the monitoring wells. In 2020, it is estimated that at least one of the other monitoring wells was partially submerged during the following dates:

- January 12-19 (MW-2 and MW-3)
- March 19 - May 4 (MW-2 and MW-3)
- May 19 - June 17 (MW-2 and MW-3)

Prior to each sampling event, Golder performed post-flood monitoring well inspections at monitoring wells that had been at least partially submerged since the last sampling event and found that no monitoring wells had been impacted by flooding in 2020.

As discussed in the 2019 Annual Report in 2019, TP-2 was hit by a piece of equipment and the protective cover for the monitoring well was bent. Further inspection of the monitoring well determined that no damage had been sustained by the PVC riser pipe of the piezometer, just the protective cover. The protective cover was replaced on April 27, 2020.

On May 6, 2020, MW-3 was sampled and shipped to the laboratory. Upon arrival of the sample at the laboratory, the sample could not be analyzed due to insufficient sample volume. MW-3 was re-sampled on May 11, 2020 for all constituents.

No other notable sampling issues were encountered at the MEC Surface Impoundments in 2020.

4.0 ACTIVITIES PLANNED FOR 2021

Detection and Assessment Monitoring are scheduled to continue on a semi-annual basis in the second and fourth quarters of 2021. Statistical analysis of the November 2020 Detection and Assessment Monitoring data will be completed in 2021 and will be included in the 2021 Annual Report.

The MEC Surface Impoundments are currently in Phase 1 of the corrective measures remedial plan as outlined in the Remedy Selection Report. Therefore, semi-annual baseline sampling of the Corrective Action Monitoring Well Network is scheduled to continue in second and fourth quarters of 2021. Closure of the MEC Surface Impoundments is anticipated to be completed in 2023 at which time the MEC will begin following the post-closure care requirements and move into Phase 2 of the corrective measures remedial plan discussed in the Remedy Selection Report.

Tables

Table 2
Summary of Well Construction Details
MEC Surface Impoundments
Meramec Energy Center, St. Louis County , MO

Monitoring Well ID	Installation Date	Location ⁴		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	1/23/2016	937676.9	865954.1	406.43	404.1	370.2	365.0	39.1
MW-2	1/23/2016	937325.1	864864.5	398.62	396.1	367.0	361.8	34.3
MW-3	1/22/2016	936750.8	864447.2	397.12	394.6	369.2	364.0	30.6
MW-4	1/22/2016	935618.0	864629.8	404.10	402.0	364.1	358.9	43.1
MW-5	1/22/2016	934874.4	864781.0	402.93	400.8	350.4	340.2	60.6
MW-6	1/21/2016	933905.2	865153.5	418.12	415.8	373.4	363.2	52.7
MW-7	1/24/2016	934334.4	866242.5	417.94	415.7	373.2	363.0	52.7
MW-8	1/24/2016	935303.6	866797.8	423.37	421.0	355.8	345.6	75.4
BMW-1	4/7/2016	935220.4	867989.4	419.08	416.8	366.4	356.2	60.6
BMW-2	1/25/2016	937927.1	866342.2	409.02	406.8	369.3	364.1	42.7
CORRECTIVE ACTION MONITORING WELL NETWORK								
MW-9 (AMW-1)	6/20/2018	935106.5	864425.3	393.71	391.1	369.8	359.5	31.6
MW-10 (AMW-2)	6/19/2018	934137.4	867158.9	405.62	402.8	367.3	357.0	45.8
MW-11D	4/22/2020	933036.7	865914.3	407.07	404.9	319.8	309.6	95.3
MW-11S	4/22/2020	933023.8	865921.8	407.56	405.3	370.4	360.2	45.1
TP-1	6/20/2018	935109.7	864437.0	393.71	390.7	306.1	301.0	89.7
TP-2	6/18/2018	934151.5	867171.1	405.22	402.4	316.9	311.8	90.6

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.

Table 3
Summary of Detection and Assessment Groundwater Network Sampling Dates
MEC Surface Impoundments
Meramec Energy Center, St. Louis County, MO

Groundwater Monitoring Wells	Date of Sample Collection			Total Number of Samples
	January 2020 Sampling Event	May 2020 Assessment/ Detection Monitoring	November 2020 Assessment/ Detection Monitoring	
CCR Rule Compliance Monitoring Well Network				
BMW-1	-	5/4/2020	11/10/2020	2
BMW-2	-	5/4/2020	11/9/2020	2
MW-1	-	5/5/2020	11/10/2020	2
MW-2	-	5/6/2020	11/10/2020	2
MW-3	-	5/11/2020	11/10/2020	2
MW-4	-	5/6/2020	11/10/2020	2
MW-5	-	5/6/2020	11/10/2020	2
MW-6	-	5/6/2020	11/9/2020	2
MW-7	-	5/5/2020	11/9/2020	2
MW-8	-	5/5/2020	11/9/2020	2
MW-9 (AMW-1)	1/8/2020	-	-	1
MW-10 (AMW-2)	1/8/2020	-	-	1
Detection or Assessment Monitoring	Detection	Assessment/ Detection	Assessment/ Detection	NA

Notes:

- 1.) Detection Monitoring results provided in Tables 5-7.
- 2.) Assessment Monitoring results provided in Tables 8-10.
- 3.) "-" No sample collected for Detection or Assessment Monitoring programs.
- 4.) NA - Not Applicable.

Table 4
Summary of Corrective Action Groundwater Network Sampling Dates
MEC Surface Impoundments
Meramec Energy Center, St. Louis County, MO

Groundwater Monitoring Wells				Number of Samples
	May/July 2020 Sampling Event	June/August 2020 Sampling Event	November 2020 Sampling Event	
Corrective Action Monitoring Well Network				
MW-9 (AMW-1)	7/23/2020	8/26/2020	11/9/2020	3
MW-10 (AMW-2)	5/5/2020	6/22/2020	11/9/2020	3
MW-11S	5/5/2020	6/22/2020	11/9/2020	3
MW-11D	5/5/2020	6/22/2020	11/9/2020	3
TP-1	7/23/2020	8/26/2020	11/9/2020	3
TP-2	5/5/2020	6/22/2020	11/9/2020	3
Event Type	Corrective Action	Corrective Action	Corrective Action	NA

Notes:

- 1.) Corrective Action sampling results provided in Tables 11-13.
- 2.) NA - Not Applicable.
- 3.) Monitoring wells MW-9 and TP-1 were not sampled in May and June due to access restrictions caused by Meramec River flooding.

Table 5
November-December 2019 Detection Monitoring Results
MEC Surface Impoundments
Meramec Energy Center, St. Louis County, MO

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS									
			BMW-1	BMW-2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9 (AMW-1)	MW-10 (AMW-2)
November-December 2019 Detection Monitoring Event														
DATE	NA	NA	11/18/2019	11/18/2019	11/18/2019	11/19/2019	11/19/2019	11/18/2019	11/18/2019	11/18/2019	11/18/2019	11/18/2019	12/20/2019	11/18/2020
pH	SU	6.441-7.704	6.64	6.86	6.71	6.45	6.61	6.85	7.03	6.70	7.09	6.92	6.99	6.78
BORON, TOTAL	µg/L	697.4	485	118	45.6 J	5,000	9,110	9,740	7,670	14,000	27,500	9,880	3,440	1,720
CALCIUM, TOTAL	µg/L	123,335	122,000	107,000	137,000	134,000	171,000	190,000	170,000	333,000	431,000	186,000	106,000	226,000
CHLORIDE, TOTAL	mg/L	248	94.4	13.3	46.1	27.8	23.9	50.3	42.3	20.2	67.5	26.1	33.1	65.1
FLUORIDE, TOTAL	mg/L	0.5057	0.62	0.31	0.30	0.17 J	0.13 J	0.16 J	0.23	0.11 J	0.55	0.28	0.21	0.15 J
SULFATE, TOTAL	mg/L	212	32.9	26.4	110	305	315	472	352	557	960	497	127	197
TOTAL DISSOLVED SOLIDS	mg/L	832	599	468	655	770	848	1,000	932	1,270	1,870	937	634	1,030
January 2020 Verification Sampling Event														
DATE	NA	NA											1/8/2020	1/8/2020
pH	SU	6.441-7.704												
BORON, TOTAL	µg/L	697.4											3,620	1,900
CALCIUM, TOTAL	µg/L	123,335												203,000
CHLORIDE, TOTAL	mg/L	248												
FLUORIDE, TOTAL	mg/L	0.5057												
SULFATE, TOTAL	mg/L	212												
TOTAL DISSOLVED SOLIDS	mg/L	832												1,140

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. 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: BTT
Reviewed By: SCP

Table 6
May 2020 Detection Monitoring Results
MEC Surface Impoundments
Meramec Energy Center, St. Louis County, MO

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS							
			BMW-1	BMW-2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8
May 2020 Detection Monitoring Event												
DATE	NA	NA	5/4/2020	5/4/2020	5/5/2020	5/6/2020	5/11/2020	5/6/2020	5/6/2020	5/6/2020	5/5/2020	5/5/2020
pH	SU	6.441-7.704	6.66	6.89	6.71	6.46	6.68	6.82	7.08	6.54	6.75	6.74
BORON, TOTAL	µg/L	697.4	337	73.7 J	44.3 J	5,940 J	8,460 J	10,100	8,210	6,500	27,000	9,690
CALCIUM, TOTAL	µg/L	123,335	128,000	112,000	135,000	137,000 J	175,000 J	200,000	183,000	384,000	409,000	193,000 J
CHLORIDE, TOTAL	mg/L	248	84.8	13.2	42.3	27.5 J	19.0	49.0	37.7	11.1	76.2	28.9
FLUORIDE, TOTAL	mg/L	0.5057	0.36	0.42	0.40	0.25	0.092 J	0.34	0.37	0.32	0.33	0.42
SULFATE, TOTAL	mg/L	212	246	23.4	111	313	299	451	361	524	971	495
TOTAL DISSOLVED SOLIDS	mg/L	832	677	452	685	767	820	1,070	1,030	1,370	2,010	1,000

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. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.
7. There were no new initial exceedances for the May 2020 event; therefore, no Verification Sampling was necessary.

Prepared By: JSI
Checked By: KAB
Reviewed By: MNH

Table 7
November 2020 Detection Monitoring Results
MEC Surface Impoundments
Meramec Energy Center, St. Louis County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS							
		BMW-1	BMW-2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8
November 2020 Detection Monitoring Event											
DATE	NA	11/10/2020	11/9/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/9/2020	11/9/2020	11/9/2020
pH	SU	7.06	7.09	6.76	6.52	6.72	6.93	7.12	6.71	7.40	6.95
BORON, TOTAL	µg/L	275	94.8 J	ND	7,350	10,500	8,890	8,370	4,330	33,000 J	9,930
CALCIUM, TOTAL	µg/L	128,000	115,000	134,000	139,000 J	178,000	178,000	168,000	438,000	463,000 J	193,000
CHLORIDE, TOTAL	mg/L	151	13.1	43.1	30.7	32.4	51.0	44.3	17.0	65.3	25.5
FLUORIDE, TOTAL	mg/L	0.46	0.45	0.37	0.24	0.21	0.27	0.31	0.27	0.33	0.34
SULFATE, TOTAL	mg/L	70.5	29.9	112	333	403	419	359	737	1,200	468
TOTAL DISSOLVED SOLIDS	mg/L	700	488	651	843	996	1,010	953	1,710	2,270	972

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. ND - Constituent was analyzed for, but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) and is considered a non-detect. Values displayed as ND.
4. NA - Not applicable.

Prepared By: BTT
Checked By: EMS
Reviewed By: MNH

Table 8
November-December 2019 Assessment Monitoring Results
MEC Surface Impoundments
Meramec Energy Center, St. Louis County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS									
		BMW-1	BMW-2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	AMW-1 (MW-9)	AMW-2 (MW-10)
FIELD PARAMETERS													
DATE	NA	11/18/2019	11/18/2019	11/18/2019	11/19/2019	11/19/2019	11/18/2019	11/18/2019	11/18/2019	11/18/2019	11/18/2019	12/20/2019	11/18/2019
DISSOLVED OXYGEN	mg/L	0.21	0.29	0.27	0.18	0.18	0.13	0.65	2.13	3.81	0.62	0.48	0.13
pH	SU	6.64	6.86	6.71	6.45	6.61	6.85	7.03	6.70	7.09	6.92	6.99	6.78
REDOX POTENTIAL	mV	-16.0	-150.4	144.4	29.9	43.3	-154.2	-161.7	-50.7	82.5	-104.0	-146.0	-121.2
SPECIFIC CONDUCTIVITY	mS/cm	1.050	0.860	1.060	1.200	1.260	1.442	1.326	1.596	2.201	1.230	1.018	1.560
TURBIDITY	NTU	9.80	3.43	4.30	3.44	3.05	8.66	4.13	8.66	2.59	8.63	2.27	1.82
APPENDIX IV PARAMETERS													
ARSENIC, TOTAL	µg/L	4.7	1.3	0.69 J	1.8	7.4	16.1	21.8	3.9	2.6	6.4	18.6	10.7
BARIUM, TOTAL	µg/L	292	558	368	309	200	199	240	51.0	42.6	142	192	180
COBALT, TOTAL	µg/L	3.2 J	ND	ND	ND	ND	ND	ND	4.2 J	ND	ND	ND	2.8 J
FLUORIDE, TOTAL	mg/L	0.62	0.31	0.30	0.17 J	0.13 J	0.16 J	0.23	0.11 J	0.55	0.28	0.21	0.15 J
LITHIUM, TOTAL	µg/L	14.4	6.5 J	ND	7.7 J	7.4 J	18.6	17.9	127	52.2	36.5	16.1	36.6
MOLYBDENUM, TOTAL	µg/L	5.9 J	ND	ND	ND	7.7 J	52.4	98.6	132	373	221	34.2	2.7 J
RADIUM [226 + 228]	pCi/L	1.839	1.386	ND	ND	ND	ND	1.761	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	0.15 J	ND	ND	0.12 J	0.089 J	0.093 J	0.093 J	ND	8.2	0.088 J	ND	0.093 J

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 for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
6. Statistical Analysis for the November-December 2019 Assessment Monitoring data is provided in Appendix C.

Table 9
May 2020 Assessment Monitoring Results
MEC Surface Impoundments
Meramec Energy Center, St. Louis County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS							
		BMW-1	BMW-2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8
FIELD PARAMETERS											
DATE	NA	5/4/2020	5/4/2020	5/5/2020	5/6/2020	5/11/2020	5/6/2020	5/6/2020	5/6/2020	5/5/2020	5/5/2020
DISSOLVED OXYGEN	mg/L	0.13	1.21	0.50	1.10	0.82	0.18	0.14	1.04	1.45	0.20
pH	SU	6.66	6.89	6.71	6.46	6.68	6.82	7.08	6.54	6.75	6.74
REDOX POTENTIAL	mV	36.2	-119.4	-130.2	-30.0	-90.0	-33.7	-150.8	-1.5	88.0	-106.9
SPECIFIC CONDUCTIVITY	mS/cm	1.151	0.900	1.094	1.083	1.212	1.559	1.428	1.779	2.289	1.317
TURBIDITY	NTU	9.97	4.34	4.44	9.70	6.66	7.79	0.86	3.73	0.44	9.93
APPENDIX IV PARAMETERS											
ANTIMONY, TOTAL	µg/L	0.10 J	ND	ND	ND	ND	ND	ND	ND	0.37 J	ND
ARSENIC, TOTAL	µg/L	9.6	1.1	0.69 J	1.9	5.1	17.3	24.1	2.3	2.3	7.9
BARIUM, TOTAL	µg/L	337	578	369	308	152	206	252	50.6	38.7	124
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	0.15 J	0.38 J	0.11 J
CHROMIUM, TOTAL	µg/L	ND	0.39 J	ND	0.30 J	ND	0.29 J	ND	ND	ND	0.35 J
COBALT, TOTAL	µg/L	1.7 J	ND	ND	ND	ND	ND	ND	7.8	ND	ND
FLUORIDE, TOTAL	mg/L	0.36	0.42	0.40	0.25	0.092 J	0.34	0.37	0.32	0.33	0.42
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	4.8 J	ND	ND	ND
LITHIUM, TOTAL	µg/L	13.1	ND	ND	6.3 J	ND	22.9	21.0	114	55.1	29.9
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	5.2 J	ND	ND	ND	10.1 J	56.2	99.0	120	351	219
RADIUM [226 + 228]	pCi/L	ND	1.408	ND	ND	ND	1.211	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	3.4	ND
THALLIUM, TOTAL	µg/L	ND	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, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. NA - Not Applicable.
4. ND - Constituent was analyzed for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
6. Statistical Analysis for the May 2020 Assessment Monitoring data is provided in Appendix D.

Table 10
November 2020 Assessment Monitoring Results
MEC Surface Impoundments
Meramec Energy Center, St. Louis County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1	BMW-2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	
FIELD PARAMETERS												
DATE	NA	11/10/2020	11/9/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/10/2020	11/9/2020	11/9/2020	11/9/2020
DISSOLVED OXYGEN	mg/L	0.22	0.41	0.22	0.38	0.19	0.17	0.19	0.74	1.60	1.02	
pH	SU	7.06	7.09	6.76	6.52	6.72	6.93	7.12	6.71	7.40	6.95	
REDOX POTENTIAL	mV	-13.3	10.6	-104.8	-82.8	-83.6	-99.3	-118.6	2.5	13.5	-71.2	
SPECIFIC CONDUCTIVITY	mS/cm	1.237	0.919	1.132	1.276	1.425	1.467	1.398	2.137	2.561	1.222	
TURBIDITY	NTU	7.71	4.59	4.34	3.52	2.29	6.14	2.66	4.41	3.45	9.61	
APPENDIX IV PARAMETERS												
ARSENIC, TOTAL	µg/L	5.5	1.3	0.57 J	1.6	7.3	14.4	22.3	2.2	2.2	6.2	
BARIUM, TOTAL	µg/L	234	598	363	320	252	175	234	53.2	40.2	210	
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	8.4	ND	ND	
FLUORIDE, TOTAL	mg/L	0.46	0.45	0.37	0.24	0.21	0.27	0.31	0.27	0.33	0.34	
LITHIUM, TOTAL	µg/L	6.4 J	ND	ND	ND	ND	15.2	14.6	106	52.0	27.5	
MOLYBDENUM, TOTAL	µg/L	4.6 J	ND	ND	ND	10.6 J	53.1	98.5	164	527	220	
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	1.398	ND	1.979	ND	ND	ND	
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	1.9	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 for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
 5. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.

Table 11
May-July 2020 Corrective Action Monitoring Results
MEC Surface Impoundments
Meramec Energy Center, St. Louis County, MO

ANALYTE	UNITS	MW-9 (AMW-1)	TP-1	MW-10 (AMW-2)	TP-2	MW-11S	MW-11D
FIELD PARAMETERS							
DATE	NA	7/23/2020	7/23/2020	5/5/2020	5/5/2020	5/5/2020	5/5/2020
DISSOLVED OXYGEN	mg/L	0.55	0.14	0.08	0.17	0.19	0.22
REDOX POTENTIAL	mV	-140.1	-178.9	-6.9	44.5	-3.7	-126.7
SPECIFIC CONDUCTIVITY	mS/cm	0.977	0.824	1.472	2.291	1.691	1.529
TURBIDITY	NTU	2.04	2.08	4.39	2.11	1.08	4.96
APPENDIX III PARAMETERS							
BORON, TOTAL	µg/L	2,820	586	1,950	2,750	227	8,120
CALCIUM, TOTAL	µg/L	97,800 J	71,700	247,000	243,000	294,000	228,000
CHLORIDE, TOTAL	mg/L	31.1	28.6	87.2	292	15.5	30.8
pH	SU	7.14	7.53	6.54	6.81	6.32	6.68
SULFATE, TOTAL	mg/L	94.1	ND	255	518	ND	348
TOTAL DISSOLVED SOLIDS	mg/L	528	403	1,120	1,600	1,020	1,100
APPENDIX IV PARAMETERS							
ANTIMONY, TOTAL	µg/L	ND	0.70 J	ND	0.73 J	ND	ND
ARSENIC, TOTAL	µg/L	16.8	11.5	11.5	4.5	3.8	4.1
BARIUM, TOTAL	µg/L	181	376	156	72.8	664	211
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	0.12 J
CHROMIUM, TOTAL	µg/L	0.31 J	0.38 J	ND	ND	0.28 J	0.26 J
COBALT, TOTAL	µg/L	ND	ND	4.4 J	ND	ND	ND
FLUORIDE, TOTAL	mg/L	0.34	0.43	0.20	0.24	0.13 J	0.24
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	10.5	20.0	42.7	47.1	13.4	43.9
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	35.9	ND	3.7 J	7.3 J	ND	208
RADIUM [226 + 228]	pCi/L	ND	2.081	1.590	1.541	ND	1.422
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	0.20 J	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
ADDITIONAL PARAMETERS							
ALKALINITY	mg/L	356	376	587	406	1,060	557
IRON, FERRIC, TOTAL	mg/L	9.7	6.2	11.7	11.8	25.8	12.4
IRON, FERROUS, TOTAL	mg/L	0.046 J	ND	3.8 J	5.5 J	14.2 J	3.3 J
IRON, TOTAL	µg/L	9,730	6,240	15,500	17,300	40,000	15,700
MAGNESIUM, TOTAL	µg/L	35,100	31,700	62,800	66,800	60,700	66,000
MANGANESE, TOTAL	µg/L	264	80.2	837	621	2,650	1,160
POTASSIUM, TOTAL	µg/L	4,140	3,020	9,820	9,160	7,450	7,770
SODIUM, TOTAL	µg/L	36,700	47,200	65,200	218,000	17,500	39,700
SULFIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND

- 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.
 - NA - Not Applicable.
 - ND - Constituent was analyzed for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
 - Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
 - Monitoring wells MW-9 and TP-1 were not sampled in May due to access restrictions caused by Meramec River flooding.

Prepared By: JSI
Checked By: EMS
Reviewed By: MNH

Table 12
June-August 2020 Corrective Action Monitoring Results
MEC Surface Impoundments
Meramec Energy Center, St. Louis County, MO

ANALYTE	UNITS	MW-9 (AMW-1)	TP-1	MW-10 (AMW-2)	TP-2	MW-11S	MW-11D
FIELD PARAMETERS							
DATE	NA	8/26/2020	8/26/2020	6/22/2020	6/22/2020	6/22/2020	6/22/2020
DISSOLVED OXYGEN	mg/L	0.19	0.13	0.09	2.46	1.80	1.68
REDOX POTENTIAL	mV	-146.4	-168.2	30.4	-125.0	37.7	-114.0
SPECIFIC CONDUCTIVITY	mS/cm	1.035	0.860	1.549	2.455	1.639	1.624
TURBIDITY	NTU	1.62	0.55	3.94	2.66	3.99	4.58
APPENDIX III PARAMETERS							
BORON, TOTAL	µg/L	3,120	498	2,050	2,880	218	8,660
CALCIUM, TOTAL	µg/L	112,000	64,600 J	222,000 J	234,000	287,000	228,000
CHLORIDE, TOTAL	mg/L	33.1	36.0	88.2	278	15.3	29.9
pH	SU	7.14	7.49	6.84	7.09	6.60	7.12
SULFATE, TOTAL	mg/L	116	2.1	246	509	0.38 J	331
TOTAL DISSOLVED SOLIDS	mg/L	622	434	1,080	1,660	1,010	1,150
APPENDIX IV PARAMETERS							
ARSENIC, TOTAL	µg/L	15.9	13.7	11.2	4.4	4.2	7.2
BARIUM, TOTAL	µg/L	200	327	132	70.6	628	166
COBALT, TOTAL	µg/L	ND	ND	4.6 J	ND	ND	ND
FLUORIDE, TOTAL	mg/L	0.38	0.72	0.27	0.31	0.20 J	0.27
LITHIUM, TOTAL	µg/L	14.5	30.4	35.1	42.8	6.5 J	40.5
MOLYBDENUM, TOTAL	µg/L	32.4	ND	4.3 J	7.3 J	ND	204
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	2.322	1.665
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	0.23 J	ND
ADDITIONAL PARAMETERS							
ALKALINITY	mg/L	357	375	534	380	971	541
IRON, TOTAL	µg/L	10,800	3,890	12,400	16,500	39,000	21,100
MAGNESIUM, TOTAL	µg/L	39,000	28,400 J	60,000	66,200	63,400	68,400
MANGANESE, TOTAL	µg/L	272	59.4	786	622	2,800	1,120
POTASSIUM, TOTAL	µg/L	4,660	2,990	9,180	8,840	6,930	7,350
SODIUM, TOTAL	µg/L	41,300	51,900 J	68,100	213,000	17,500	39,400

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.
- NA - Not Applicable.
- ND - Constituent was analyzed for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
- Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
- Monitoring wells MW-9 and TP-1 were not sampled in June due to access restrictions caused by Meramec River flooding.

Table 13
November 2020 Corrective Action Monitoring Results
MEC Surface Impoundments
Meramec Energy Center, St. Louis County, MO

ANALYTE	UNITS	MW-9 (AMW-1)	TP-1	MW-10 (AMW-2)	TP-2	MW-11S	MW-11D
FIELD PARAMETERS							
DATE	NA	11/9/2020	11/9/2020	11/9/2020	11/9/2020	11/9/2020	11/9/2020
DISSOLVED OXYGEN	mg/L	0.22	0.47	0.17	0.33	0.15	0.39
REDOX POTENTIAL	mV	-82.3	-120.3	-69.2	-128.7	-88.0	-137.3
SPECIFIC CONDUCTIVITY	mS/cm	1.138	0.804	2.129	2.485	1.671	1.571
TURBIDITY	NTU	1.78	4.68	0.89	0.92	2.97	4.30
APPENDIX III PARAMETERS							
BORON, TOTAL	µg/L	3,930	532	2,180	2,930	220	9,060
CALCIUM, TOTAL	µg/L	126,000	72,800	300,000	237,000	281,000	239,000 J
CHLORIDE, TOTAL	mg/L	38.0	13.1	16.6 J	285	12.8	32.6
pH	SU	7.33	7.47	6.82	7.07	6.59	7.12
SULFATE, TOTAL	mg/L	193	1.0 J	710	541	0.47 J	360
TOTAL DISSOLVED SOLIDS	mg/L	683	408	1,810	1,720	960	1,120
APPENDIX IV PARAMETERS							
ARSENIC, TOTAL	µg/L	15.4	21.1	8.3	3.8	3.8	11.7
BARIUM, TOTAL	µg/L	227	360	161	72.1	635	155
COBALT, TOTAL	µg/L	ND	ND	8.2	ND	ND	ND
FLUORIDE, TOTAL	mg/L	0.36	0.38	0.20 J	0.31	0.31	0.43
LITHIUM, TOTAL	µg/L	16.7	19.5	46.0	51.3	14.8	49.6
MOLYBDENUM, TOTAL	µg/L	31.9	ND	3.1 J	9.5 J	ND	236
RADIUM [226 + 228]	pCi/L	1.785	1.373 J	1.896 J	ND	2.201	2.161 J
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND
ADDITIONAL PARAMETERS							
ALKALINITY	mg/L	383	410	612	410	1,030	554
IRON, TOTAL	µg/L	11,800	3,600	11,600	16,500	40,700	24,700
MAGNESIUM, TOTAL	µg/L	43,900	30,700	81,000	63,700	60,500	59,400
MANGANESE, TOTAL	µg/L	301	66.6	885	619	2,750	954
POTASSIUM, TOTAL	µg/L	4,830	3,140	10,700	8,830	7,180	7,360
SODIUM, TOTAL	µg/L	42,000	44,300	103,000	214,000	16,100	40,600

- 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.
 - NA - Not Applicable.
 - ND - Constituent was analyzed for but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
 - Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.

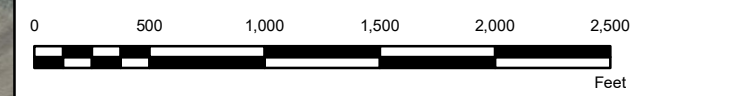
Figures

P:\14\153140601\02 - Ameren CCR GW Monitoring Program 2020 - 15314106 - All Project Files (1)\5 Technical\Work\0004-MERC-4-Figures-Domains\PRODUCTION\Other Maps\Figure 1 - MEC Site Aerial.mxd PRINTED ON: 2021-01-29 AT 3:18:08 PM



- LEGEND**
- Meramec Energy Center Property Boundary
 - Regulated Surface Impoundment
 - Active Surface Impoundment
 - Capped and Closed Surface Impoundment
 - Exempt Surface Impoundment

- Monitoring Well Networks**
- ⊕ Detection/Assessment Monitoring Well
 - ⊕ Corrective Action Monitoring Well
 - ⊕ Monitoring Well Used for Water Elevation Measurements Only



NOTE(S)

- 1.) ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE.
- 2.) SI - SURFACE IMPOUNDMENT.
- 3.) EXEMPT SURFACE IMPOUNDMENTS ARE EXCLUDED FROM COAL COMBUSTION RESIDUALS MONITORING.
- 4.) GROUNDWATER MONITORING WELLS SURVEYED BY ZAHNER AND ASSOCIATES, INC.

REFERENCE(S)

- 1.) AMEREN MISSOURI MERAMEC ENERGY CENTER, MERAMEC PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.

CLIENT
AMEREN MISSOURI
MERAMEC ENERGY CENTER

PROJECT
GROUNDWATER MONITORING PROGRAM



TITLE
MERAMEC ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND MONITORING WELL LOCATION MAP

CONSULTANT	YYYY-MM-DD	2021-01-22
DESIGNED	JSI	
PREPARED	BTT	
REVIEWED	RJF	
APPROVED	MNH	

PROJECT NO. 153140602 REV. 0 FIGURE 1

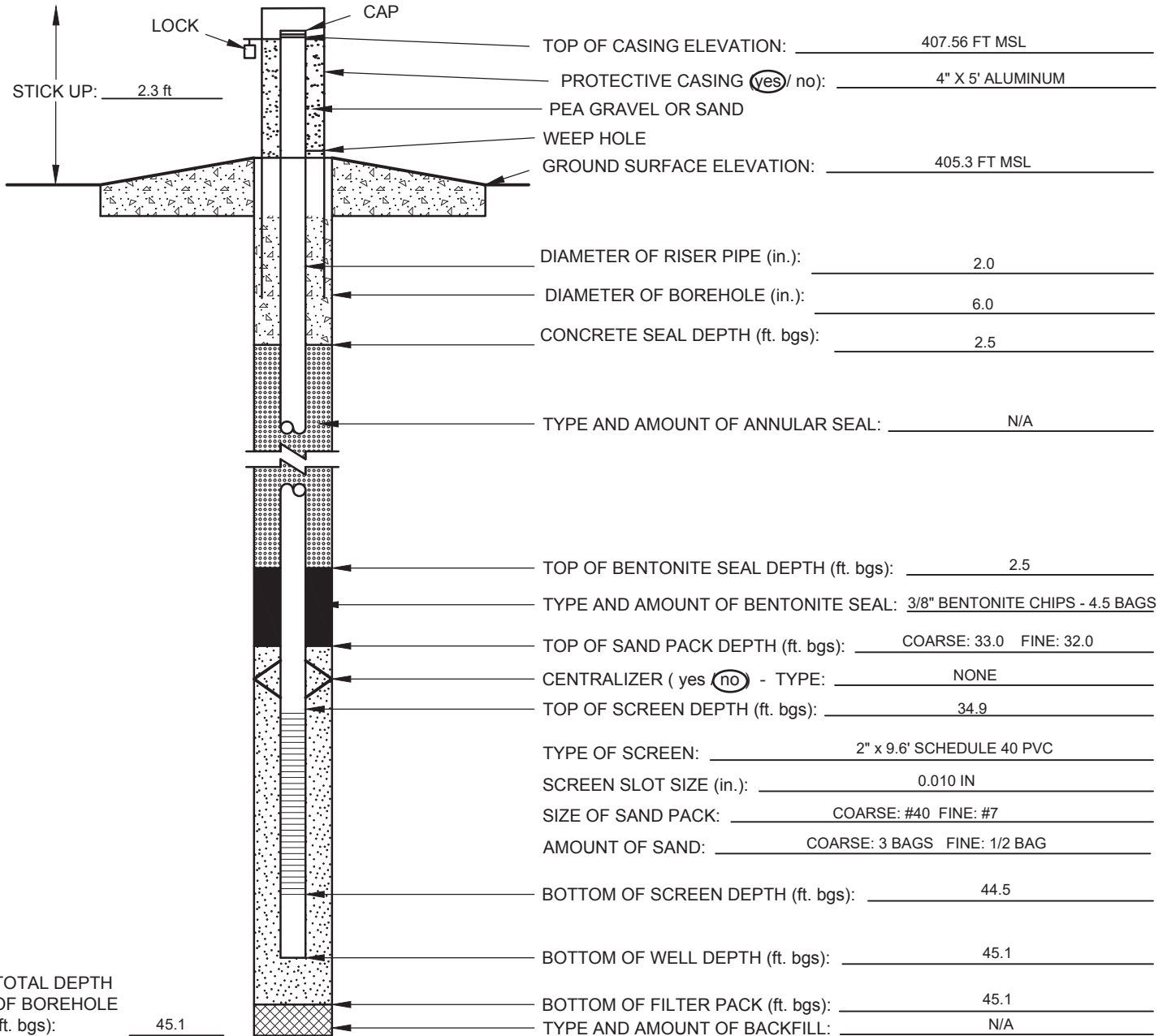


1in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

APPENDIX A

**Monitoring Well Construction
Diagrams**

PROJECT NAME: AMEREN CCR GW MONITORING		PROJECT NUMBER: 153-140602.0004A
SITE NAME: MERAMEC ENERGY CENTER		LOCATION: MW-11S
CLIENT: AMEREN MISSOURI		SURFACE ELEVATION: 405.3 FT MSL
GEOLOGIST: B. TALBERT	NORTHING: 933023.8	EASTING: 865921.8
DRILLER: T. SCHMALFELDT	STATIC WATER LEVEL: 11.36 FT BTOC	COMPLETION DATE: 4/22/2020
DRILLING COMPANY: CASCADE		DRILLING METHODS: SONIC

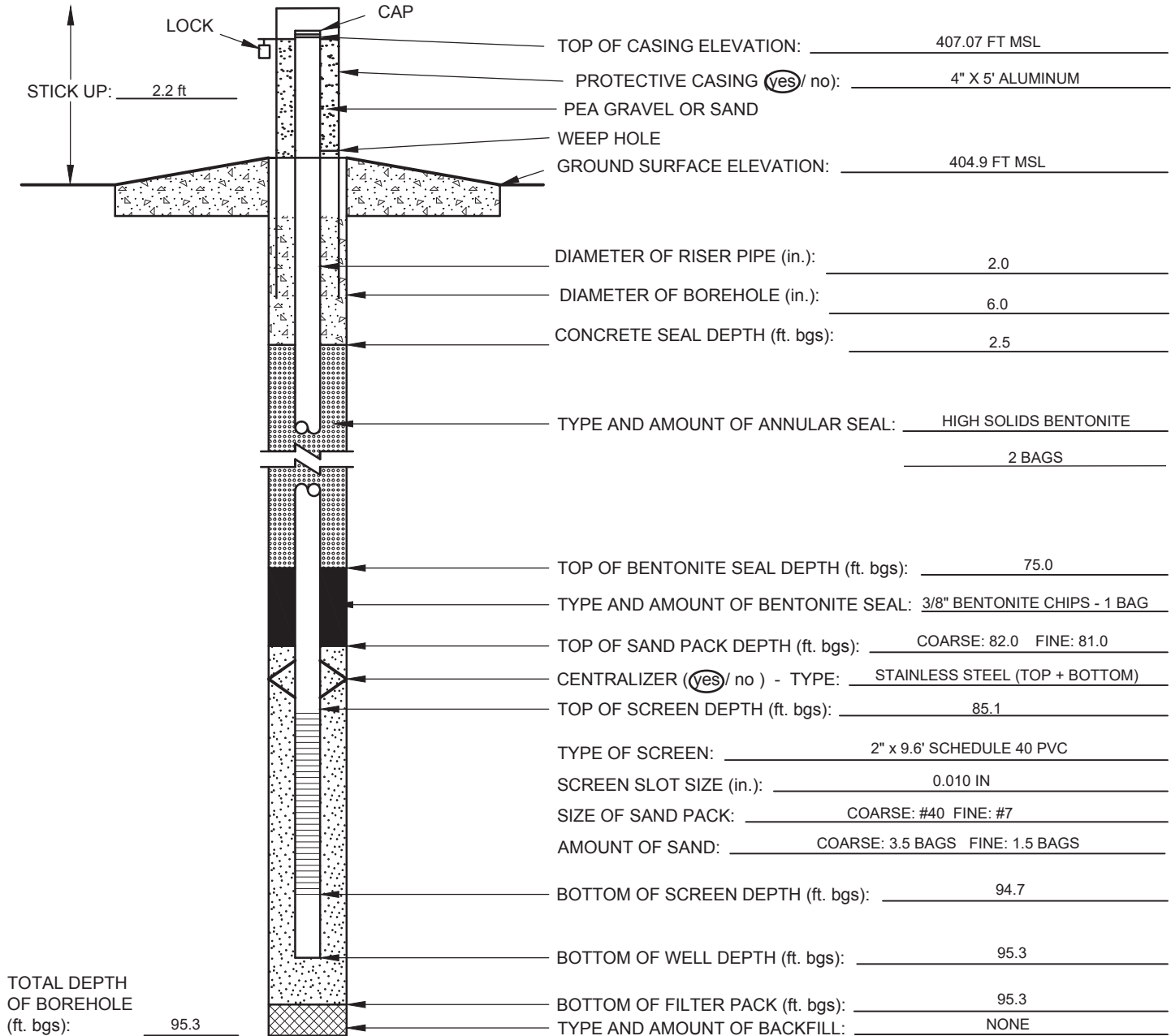


ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. IN = INCHES.
 250 GALLONS OF WATER USED DURING DRILLING. HORIZONTAL DATUM: STATE PLANE COORDINATES NAD83 US SURVEY FEET (2000) MISSOURI EAST ZONE. VERTICAL DATUM: NAVD88. WELL SURVEYED BY ZAHNER AND ASSOCIATES, INC ON APRIL 27, 2020.
 SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

CHECKED BY: R. Feldmann
 DATE CHECKED: 1/14/2021

PREPARED BY: B. Talbert

PROJECT NAME: AMEREN CCR GW MONITORING		PROJECT NUMBER: 153-140602.0004A
SITE NAME: MERAMEC ENERGY CENTER		LOCATION: MW-11D
CLIENT: AMEREN MISSOURI		SURFACE ELEVATION: 404.9 FT MSL
GEOLOGIST: B. TALBERT	NORTHING: 933036.7	EASTING: 865914.3
DRILLER: T. SCHMALFELDT	STATIC WATER LEVEL: 10.86 FT BTOC	COMPLETION DATE: 4/22/2020
DRILLING COMPANY: CASCADE		DRILLING METHODS: SONIC



ADDITIONAL NOTES: FT BGS = FEET BELOW GROUND SURFACE. FT MSL = FEET ABOVE MEAN SEA LEVEL. IN = INCHES.
 250 GALLONS OF WATER USED DURING DRILLING. HORIZONTAL DATUM: STATE PLANE COORDINATES NAD83 US SURVEY FEET (2000)
 MISSOURI EAST ZONE. VERTICAL DATUM: NAVD88. WELL SURVEYED BY ZAHNER AND ASSOCIATES, INC ON APRIL 27, 2020.
 SAND AND BENTONITE BAGS WEIGH 50 LBS EACH.

CHECKED BY: R. Feldmann
 DATE CHECKED: 1/14/2021

PREPARED BY: B. Talbert

APPENDIX B

Laboratory Analytical Data

January 13, 2020

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

RE: Project: AMEREN MERAMEC ENERGY CENTER
Pace Project No.: 60324976

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on December 21, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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
Tommy Goodwin, Golder Associates
Mark Haddock, Golder Associates
Eric Schneider, 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 MERAMEC ENERGY CENTER

Pace Project No.: 60324976

Pace Analytical Services Pennsylvania

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

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Florida: Cert E871149 SEKS WET

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 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 #: 19-016-0

Arkansas Drinking Water

Illinois Certification #: 004455

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 #: KS000212018-8

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 MERAMEC ENERGY CENTER

Pace Project No.: 60324976

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60324976001	M-MW-9	Water	12/20/19 09:50	12/21/19 03:25

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 MERAMEC ENERGY CENTER

Pace Project No.: 60324976

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60324976001	M-MW-9	EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	AJS2	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CNB	3	PASI-K

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

Sample: M-MW-9 **Lab ID: 60324976001** Collected: 12/20/19 09:50 Received: 12/21/19 03:25 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							
Barium	192	ug/L	5.0	1.4	1	12/23/19 15:15	12/24/19 11:46	7440-39-3	
Beryllium	<0.25	ug/L	1.0	0.25	1	12/23/19 15:15	12/24/19 11:46	7440-41-7	
Boron	3440	ug/L	100	10.7	1	12/23/19 15:15	12/24/19 11:46	7440-42-8	
Calcium	106000	ug/L	200	50.0	1	12/23/19 15:15	12/24/19 11:46	7440-70-2	
Cobalt	<0.84	ug/L	5.0	0.84	1	12/23/19 15:15	12/24/19 11:46	7440-48-4	
Iron	11000	ug/L	50.0	14.0	1	12/23/19 15:15	12/24/19 11:46	7439-89-6	
Lead	<3.4	ug/L	10.0	3.4	1	12/23/19 15:15	12/24/19 11:46	7439-92-1	
Lithium	16.1	ug/L	10.0	5.9	1	12/23/19 15:15	12/24/19 11:46	7439-93-2	
Magnesium	37300	ug/L	50.0	13.0	1	12/23/19 15:15	12/24/19 11:46	7439-95-4	
Manganese	277	ug/L	5.0	2.1	1	12/23/19 15:15	12/24/19 11:46	7439-96-5	
Molybdenum	34.2	ug/L	20.0	2.6	1	12/23/19 15:15	12/24/19 11:46	7439-98-7	
Potassium	4270	ug/L	500	79.0	1	12/23/19 15:15	12/24/19 11:46	7440-09-7	
Sodium	37600	ug/L	500	144	1	12/23/19 15:15	12/24/19 11:46	7440-23-5	
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Antimony	<0.097	ug/L	1.0	0.097	1	12/26/19 12:42	12/30/19 16:38	7440-36-0	
Arsenic	18.6	ug/L	1.0	0.086	1	12/26/19 12:42	12/30/19 16:38	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	12/26/19 12:42	12/30/19 16:38	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	12/26/19 12:42	12/30/19 16:38	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	12/26/19 12:42	12/30/19 16:38	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	12/26/19 12:42	12/30/19 16:38	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.085	ug/L	0.20	0.085	1	12/30/19 10:23	12/31/19 10:51	7439-97-6	
2320B Alkalinity		Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	358	mg/L	20.0	8.4	1		12/27/19 10:57		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	634	mg/L	10.0	10.0	1		12/23/19 14:15		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	33.1	mg/L	10.0	2.2	10		12/26/19 23:16	16887-00-6	
Fluoride	0.21	mg/L	0.20	0.085	1		12/26/19 23:00	16984-48-8	
Sulfate	127	mg/L	10.0	2.3	10		12/26/19 23:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

QC Batch: 630876

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 60324976001

METHOD BLANK: 2570066

Matrix: Water

Associated Lab Samples: 60324976001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.085	0.20	0.085	12/31/19 10:40	

LABORATORY CONTROL SAMPLE: 2570067

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2570068 2570069

Parameter	Units	60325171001		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec							
Mercury	ug/L	<0.085	5	5	5.0	5.0	100	100	75-125	0	20				

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

QC Batch: 630016 Analysis Method: EPA 200.7
 QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
 Associated Lab Samples: 60324976001

METHOD BLANK: 2567679 Matrix: Water

Associated Lab Samples: 60324976001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	12/24/19 11:19	
Beryllium	ug/L	<0.49	1.0	0.49	12/24/19 11:19	
Boron	ug/L	<11.7	100	11.7	12/24/19 11:19	
Calcium	ug/L	<32.4	200	32.4	12/24/19 11:19	
Cobalt	ug/L	<1.5	5.0	1.5	12/24/19 11:19	
Iron	ug/L	<26.8	50.0	26.8	12/24/19 11:19	
Lead	ug/L	<4.6	10.0	4.6	12/24/19 11:19	
Lithium	ug/L	<4.6	10.0	4.6	12/24/19 11:19	
Magnesium	ug/L	<19.7	50.0	19.7	12/24/19 11:19	
Manganese	ug/L	<0.97	5.0	0.97	12/24/19 11:19	
Molybdenum	ug/L	<1.7	20.0	1.7	12/24/19 11:19	
Potassium	ug/L	<189	500	189	12/24/19 11:19	
Sodium	ug/L	<107	500	107	12/24/19 11:19	

LABORATORY CONTROL SAMPLE: 2567680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	883	88	85-115	
Beryllium	ug/L	1000	886	89	85-115	
Boron	ug/L	1000	875	88	85-115	
Calcium	ug/L	10000	8800	88	85-115	
Cobalt	ug/L	1000	891	89	85-115	
Iron	ug/L	10000	8830	88	85-115	
Lead	ug/L	1000	924	92	85-115	
Lithium	ug/L	1000	867	87	85-115	
Magnesium	ug/L	10000	8960	90	85-115	
Manganese	ug/L	1000	881	88	85-115	
Molybdenum	ug/L	1000	896	90	85-115	
Potassium	ug/L	10000	8690	87	85-115	
Sodium	ug/L	10000	8900	89	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2567681 2567682

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2627103003 Result	Spike Conc.	Spike Conc.	Result							Result
Barium	ug/L	ND	1000	1000	941	933	94	93	70-130	1	20	
Beryllium	ug/L	ND	1000	1000	942	934	94	93	70-130	1	20	
Boron	ug/L	ND	1000	1000	902	902	90	90	70-130	0	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

Parameter	Units	2567681		2567682		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2627103003 Result	MS Spike Conc.	MSD Spike Conc.									
Calcium	ug/L	ND	10000	10000	9330	9300	91	91	70-130	0	20		
Cobalt	ug/L	ND	1000	1000	940	934	94	93	70-130	1	20		
Iron	ug/L	ND	10000	10000	9210	9120	92	91	70-130	1	20		
Lead	ug/L	ND	1000	1000	975	971	97	97	70-130	0	20		
Lithium	ug/L	ND	1000	1000	914	908	91	91	70-130	1	20		
Magnesium	ug/L	102	10000	10000	9530	9510	94	94	70-130	0	20		
Manganese	ug/L	ND	1000	1000	952	953	95	95	70-130	0	20		
Molybdenum	ug/L	ND	1000	1000	951	948	95	95	70-130	0	20		
Potassium	ug/L	ND	10000	10000	9270	9140	90	89	70-130	1	20		
Sodium	ug/L	1900	10000	10000	11100	11000	92	91	70-130	1	20		

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

QC Batch: 630507 Analysis Method: EPA 200.8
 QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
 Associated Lab Samples: 60324976001

METHOD BLANK: 2569008 Matrix: Water

Associated Lab Samples: 60324976001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.097	1.0	0.097	12/30/19 16:08	
Arsenic	ug/L	<0.086	1.0	0.086	12/30/19 16:08	
Cadmium	ug/L	<0.056	0.50	0.056	12/30/19 16:08	
Chromium	ug/L	<0.22	1.0	0.22	12/30/19 16:08	
Selenium	ug/L	<0.18	1.0	0.18	12/30/19 16:08	
Thallium	ug/L	<0.093	1.0	0.093	12/30/19 16:08	

LABORATORY CONTROL SAMPLE: 2569009

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.7	97	85-115	
Arsenic	ug/L	40	40.9	102	85-115	
Cadmium	ug/L	40	40.1	100	85-115	
Chromium	ug/L	40	41.1	103	85-115	
Selenium	ug/L	40	41.0	102	85-115	
Thallium	ug/L	40	38.0	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2569010 2569011

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60325167001 Result	Spike Conc.	Spike Conc.	Conc.								
Antimony	ug/L	<0.097	40	40	40	36.0	39.5	90	99	70-130	9	20	
Arsenic	ug/L	0.50J	40	40	40	41.6	45.5	103	113	70-130	9	20	
Cadmium	ug/L	0.37J	40	40	40	36.5	40.0	90	99	70-130	9	20	
Chromium	ug/L	0.75J	40	40	40	51.5	57.3	127	141	70-130	11	20	M1
Selenium	ug/L	<0.18	40	40	40	41.0	45.2	102	113	70-130	10	20	
Thallium	ug/L	3.5	40	40	40	43.3	48.7	100	113	70-130	12	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

QC Batch:	630622	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
Associated Lab Samples:	60324976001		

METHOD BLANK: 2569347 Matrix: Water

Associated Lab Samples: 60324976001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<8.4	20.0	8.4	12/27/19 10:17	

LABORATORY CONTROL SAMPLE: 2569348

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	470	94	90-110	

SAMPLE DUPLICATE: 2569349

Parameter	Units	60325105001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	267	270	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

QC Batch: 630031

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60324976001

METHOD BLANK: 2567691

Matrix: Water

Associated Lab Samples: 60324976001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	12/23/19 14:13	

LABORATORY CONTROL SAMPLE: 2567692

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

SAMPLE DUPLICATE: 2567693

Parameter	Units	60324810002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	430	426	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Project No.: 60324976

QC Batch: 630399

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 60324976001

METHOD BLANK: 2568812

Matrix: Water

Associated Lab Samples: 60324976001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.22	1.0	0.22	12/26/19 14:48	
Fluoride	mg/L	<0.085	0.20	0.085	12/26/19 14:48	
Sulfate	mg/L	<0.23	1.0	0.23	12/26/19 14:48	

METHOD BLANK: 2569447

Matrix: Water

Associated Lab Samples: 60324976001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.22	1.0	0.22	12/27/19 15:13	
Fluoride	mg/L	<0.085	0.20	0.085	12/27/19 15:13	
Sulfate	mg/L	<0.23	1.0	0.23	12/27/19 15:13	

METHOD BLANK: 2570116

Matrix: Water

Associated Lab Samples: 60324976001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.22	1.0	0.22	12/31/19 14:59	
Fluoride	mg/L	<0.085	0.20	0.085	12/31/19 14:59	
Sulfate	mg/L	<0.23	1.0	0.23	12/31/19 14:59	

LABORATORY CONTROL SAMPLE: 2568813

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	5.1	101	90-110	

LABORATORY CONTROL SAMPLE: 2569448

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	2.4	96	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

LABORATORY CONTROL SAMPLE: 2570117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Fluoride	mg/L	2.5	2.3	92	90-110	
Sulfate	mg/L	5	4.5	90	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2568814 2568815

Parameter	Units	60325171001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chloride	mg/L	124	50	50	179	183	110	119	80-120	2	15		
Fluoride	mg/L	<0.85	25	25	29.9	29.6	116	115	80-120	1	15		
Sulfate	mg/L	154	50	50	209	213	110	118	80-120	2	15	E	

MATRIX SPIKE SAMPLE: 2568816

Parameter	Units	60325161001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	124	250	385	104	80-120	
Fluoride	mg/L	ND	125	139	112	80-120	
Sulfate	mg/L	104	250	382	111	80-120	

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

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

Sample: M-MW-9 **Lab ID: 60324976001** Collected: 12/20/19 09:50 Received: 12/21/19 03:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.322 ± 0.632 (1.14) C:NA T:76%	pCi/L	01/09/20 12:35	13982-63-3	
Radium-228	EPA 904.0	0.263 ± 0.274 (0.564) C:82% T:85%	pCi/L	01/10/20 10:52	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

QC Batch: 377186

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Associated Lab Samples: 60324976001

METHOD BLANK: 1829503

Matrix: Water

Associated Lab Samples: 60324976001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.121 ± 0.335 (0.651) C:NA T:75%	pCi/L	01/09/20 12:35	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

QC Batch: 377187

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Associated Lab Samples: 60324976001

METHOD BLANK: 1829504

Matrix: Water

Associated Lab Samples: 60324976001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.474 ± 0.327 (0.619) C:85% T:71%	pCi/L	01/10/20 10:51	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

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.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

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

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60324976

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60324976001	M-MW-9	EPA 200.7	630016	EPA 200.7	630089
60324976001	M-MW-9	EPA 200.8	630507	EPA 200.8	630549
60324976001	M-MW-9	EPA 7470	630876	EPA 7470	630900
60324976001	M-MW-9	EPA 903.1	377186		
60324976001	M-MW-9	EPA 904.0	377187		
60324976001	M-MW-9	SM 2320B	630622		
60324976001	M-MW-9	SM 2540C	630031		
60324976001	M-MW-9	EPA 300.0	630399		

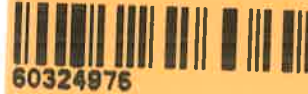
REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60324976



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

Thermometer Used: 1298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 0.1 Corr. Factor 10.1 Corrected 0.1

Date and initials of person examining contents: VB 12/21/19

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 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 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: Janae Chandra Date: 12/23/19

Project Manager Review: _____ Date: _____



MEMORANDUM

DATE January 13, 2020

Project No. 153140601

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Tommy Goodwin

EMAIL Tommy_Goodwin@golder.com

DATA VALIDATION SUMMARY, MERAMEC ENERGY CENTER – DATA PACKAGE 60324976

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 - Meramec - MEC
 Reviewer: T Goodwin

Project Manager: J Ingram
 Project Number: 153140601
 Validation Date: 1/13/2020

Laboratory: Pace Analytical - KS

SDG #: 60324976

Analytical Method (type and no.): EPA 200.7/200.8 (Metals); EPA 903.1/904.0 (Rads); EPA 7470 (Hg); SM 2320B (Alk); SM 2540C (TDS); EPA 300.0 (Anions)

Matrix: Air Soil/Sed. Water Waste

Sample Names M-MW-9

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>12/20/2019</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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 (<u>grab</u> composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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"/>	_____

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

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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

Comments/Notes:

Dilution: Chloride and Sulfate were diluted in several samples; no qualification necessary.

January 17, 2020

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

RE: Project: AMEREN MERAMEC ENERGY CTR
Pace Project No.: 60326295

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on January 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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
Tommy Goodwin, Golder Associates
Mark Haddock, Golder Associates
Eric Schneider, 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 MERAMEC ENERGY CTR

Pace Project No.: 60326295

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 19-016-0

Arkansas Drinking Water

Illinois Certification #: 004455

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 #: KS000212018-8

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 MERAMEC ENERGY CTR

Pace Project No.: 60326295

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60326295001	M-MW-9	Water	01/08/20 12:00	01/10/20 03:14
60326295002	M-MW-10	Water	01/08/20 13:45	01/10/20 03:14
60326295003	M-FB-1	Water	01/08/20 13:30	01/10/20 03:14
60326295004	M-DUP-1	Water	01/08/20 08:00	01/10/20 03:14

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 MERAMEC ENERGY CTR

Pace Project No.: 60326295

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60326295001	M-MW-9	EPA 200.7	LRS	2	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CNB	3	PASI-K
60326295002	M-MW-10	EPA 200.7	LRS	2	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CNB	3	PASI-K
60326295003	M-FB-1	EPA 200.7	LRS	2	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CNB	3	PASI-K
60326295004	M-DUP-1	EPA 200.7	LRS	2	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CNB	3	PASI-K

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR

Pace Project No.: 60326295

Sample: M-MW-9 **Lab ID: 60326295001** Collected: 01/08/20 12:00 Received: 01/10/20 03:14 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							
Boron	3620	ug/L	100	11.7	1	01/13/20 09:51	01/14/20 15:08	7440-42-8	
Calcium	115000	ug/L	200	32.4	1	01/13/20 09:51	01/14/20 15:08	7440-70-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	578	mg/L	10.0	10.0	1		01/14/20 10:08		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	33.4	mg/L	5.0	1.9	5		01/13/20 17:31	16887-00-6	
Fluoride	0.21	mg/L	0.20	0.075	1		01/13/20 17:15	16984-48-8	
Sulfate	126	mg/L	10.0	2.8	10		01/14/20 17:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR

Pace Project No.: 60326295

Sample: M-MW-10 **Lab ID: 60326295002** Collected: 01/08/20 13:45 Received: 01/10/20 03:14 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							
Boron	1900	ug/L	100	11.7	1	01/13/20 09:51	01/14/20 15:10	7440-42-8	
Calcium	203000	ug/L	200	32.4	1	01/13/20 09:51	01/14/20 15:10	7440-70-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	1140	mg/L	13.3	13.3	1		01/15/20 10:03		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	83.7	mg/L	10.0	3.9	10		01/13/20 18:19	16887-00-6	
Fluoride	0.16J	mg/L	0.20	0.075	1		01/13/20 18:03	16984-48-8	
Sulfate	233	mg/L	20.0	5.6	20		01/14/20 18:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR

Pace Project No.: 60326295

Sample: M-FB-1 **Lab ID: 60326295003** Collected: 01/08/20 13:30 Received: 01/10/20 03:14 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							
Boron	<11.7	ug/L	100	11.7	1	01/13/20 09:51	01/14/20 15:13	7440-42-8	
Calcium	<32.4	ug/L	200	32.4	1	01/13/20 09:51	01/14/20 15:13	7440-70-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	34.5	mg/L	5.0	5.0	1		01/15/20 10:03		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	<0.39	mg/L	1.0	0.39	1		01/14/20 18:29	16887-00-6	
Fluoride	<0.075	mg/L	0.20	0.075	1		01/14/20 18:29	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		01/14/20 18:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR

Pace Project No.: 60326295

Sample: M-DUP-1 **Lab ID: 60326295004** Collected: 01/08/20 08:00 Received: 01/10/20 03:14 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							
Boron	3600	ug/L	100	11.7	1	01/13/20 09:51	01/14/20 15:16	7440-42-8	
Calcium	113000	ug/L	200	32.4	1	01/13/20 09:51	01/14/20 15:16	7440-70-2	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	664	mg/L	10.0	10.0	1		01/15/20 10:03		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	32.9	mg/L	5.0	1.9	5		01/13/20 20:12	16887-00-6	
Fluoride	0.20	mg/L	0.20	0.075	1		01/13/20 19:56	16984-48-8	
Sulfate	125	mg/L	10.0	2.8	10		01/14/20 18:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR
Pace Project No.: 60326295

QC Batch: 632714 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60326295001, 60326295002, 60326295003, 60326295004

METHOD BLANK: 2576847 Matrix: Water
Associated Lab Samples: 60326295001, 60326295002, 60326295003, 60326295004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<11.7	100	11.7	01/14/20 14:55	
Calcium	ug/L	<32.4	200	32.4	01/14/20 14:55	

LABORATORY CONTROL SAMPLE: 2576848

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	975	97	85-115	
Calcium	ug/L	10000	9770	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2576849 2576850

Parameter	Units	60326269001		2576850		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Boron	ug/L	ND	1000	951	992	93	97	70-130	4	20	
Calcium	ug/L	79700	10000	87400	87100	77	74	70-130	0	20	

MATRIX SPIKE SAMPLE: 2576851

Parameter	Units	60326111008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	95.2J	1000	1060	97	70-130	
Calcium	ug/L	166000	10000	175000	92	70-130	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR

Pace Project No.: 60326295

QC Batch: 632925

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60326295001

METHOD BLANK: 2577337

Matrix: Water

Associated Lab Samples: 60326295001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	01/14/20 10:06	

LABORATORY CONTROL SAMPLE: 2577338

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

SAMPLE DUPLICATE: 2577339

Parameter	Units	60326112003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4840	4600	5	10	

SAMPLE DUPLICATE: 2577340

Parameter	Units	60326248002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	235	230	2	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR

Pace Project No.: 60326295

QC Batch: 633115

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60326295002, 60326295003, 60326295004

METHOD BLANK: 2578053

Matrix: Water

Associated Lab Samples: 60326295002, 60326295003, 60326295004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	01/15/20 10:02	

LABORATORY CONTROL SAMPLE: 2578054

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

SAMPLE DUPLICATE: 2578055

Parameter	Units	60326266004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1020	1010	0	10	

SAMPLE DUPLICATE: 2578056

Parameter	Units	60326262001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5060	4600	10	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR

Pace Project No.: 60326295

QC Batch: 632763 Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions

Associated Lab Samples: 60326295001, 60326295002, 60326295003, 60326295004

METHOD BLANK: 2577002 Matrix: Water

Associated Lab Samples: 60326295001, 60326295002, 60326295003, 60326295004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	01/13/20 10:45	
Fluoride	mg/L	<0.075	0.20	0.075	01/13/20 10:45	
Sulfate	mg/L	<0.28	1.0	0.28	01/13/20 10:45	

METHOD BLANK: 2577515 Matrix: Water

Associated Lab Samples: 60326295001, 60326295002, 60326295003, 60326295004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	01/14/20 09:36	
Fluoride	mg/L	<0.075	0.20	0.075	01/14/20 09:36	
Sulfate	mg/L	<0.28	1.0	0.28	01/14/20 09:36	

METHOD BLANK: 2579424 Matrix: Water

Associated Lab Samples: 60326295001, 60326295002, 60326295003, 60326295004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	01/15/20 13:37	
Fluoride	mg/L	<0.075	0.20	0.075	01/15/20 13:37	
Sulfate	mg/L	<0.28	1.0	0.28	01/15/20 13:37	

LABORATORY CONTROL SAMPLE: 2577003

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Fluoride	mg/L	2.5	2.3	93	90-110	

LABORATORY CONTROL SAMPLE: 2577516

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	100	90-110	
Sulfate	mg/L	5	4.9	99	90-110	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR

Pace Project No.: 60326295

LABORATORY CONTROL SAMPLE: 2579425

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	2.3	92	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2577004 2577005

Parameter	Units	60326237001		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec							
Chloride	mg/L	689	250	250	994	979	122	116	80-120	2	15	M1			
Fluoride	mg/L	25.6	125	125	162	160	109	108	80-120	1	15				
Sulfate	mg/L	63.9	250	250	327	325	105	104	80-120	1	15				

MATRIX SPIKE SAMPLE: 2577006

Parameter	Units	60326296001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	<77.5	1000	1050	98	80-120	
Fluoride	mg/L	<15.0	500	545	109	80-120	
Sulfate	mg/L	2120	1000	3260	114	80-120	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: AMEREN MERAMEC ENERGY CTR

Pace Project No.: 60326295

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.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MERAMEC ENERGY CTR

Pace Project No.: 60326295

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60326295001	M-MW-9	EPA 200.7	632714	EPA 200.7	632903
60326295002	M-MW-10	EPA 200.7	632714	EPA 200.7	632903
60326295003	M-FB-1	EPA 200.7	632714	EPA 200.7	632903
60326295004	M-DUP-1	EPA 200.7	632714	EPA 200.7	632903
60326295001	M-MW-9	SM 2540C	632925		
60326295002	M-MW-10	SM 2540C	633115		
60326295003	M-FB-1	SM 2540C	633115		
60326295004	M-DUP-1	SM 2540C	633115		
60326295001	M-MW-9	EPA 300.0	632763		
60326295002	M-MW-10	EPA 300.0	632763		
60326295003	M-FB-1	EPA 300.0	632763		
60326295004	M-DUP-1	EPA 300.0	632763		

REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60326295



Client Name: Goldco

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: 2-299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.7 Corr. Factor 0.2 Corrected 1.9

Date and initials of person examining contents: 1/10/20

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>WAT</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: Jamie Church Date: 1/10/20



MEMORANDUM

DATE January 31, 2020

Project No. 153140601

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Tommy Goodwin

EMAIL Tommy_Goodwin@golder.com

DATA VALIDATION SUMMARY, MERAMEC ENERGY CENTER – DATA PACKAGE 60326295

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 - Meramec - MEC
 Reviewer: T Goodwin

Project Manager: J Ingram
 Project Number: 153140601
 Validation Date: 1/31/2020

Laboratory: Pace Analytical - KS SDG #: 60326295
 Analytical Method (type and no.): EPA 200.7 (Metals); SM 2540C (TDS); EPA 300.0 (Anions)
 Matrix: Air Soil/Sed. Water Waste
 Sample Names M-MW-9, M-MW-10, M-FB-1, M-DUP-1

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

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>1/8/2020</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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 (<u>grab</u> /composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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"/>	

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

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 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unrelated Sample
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Unrelated Sample
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 type="checkbox"/>	<input checked="" type="checkbox"/>	Unrelated Sample
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 type="checkbox"/>	<input checked="" type="checkbox"/>	Unrelated Sample

Comments/Notes:

DUP-1 @ M-MW-9; FB-1 @ M-MW-10

Dilution: Chloride and Sulfate were diluted in several samples; no qualification is necessary.

FB-1: TDS (34.5)

Max Field Duplicate RPD: 14% (Limit 20%)

June 03, 2020

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

RE: Project: AMEREN MERAMEC ENERGY CTR MEC
Pace Project No.: 60336229

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between May 06, 2020 and May 12, 2020. 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



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 MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

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

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

SAMPLE SUMMARY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60336229001	M-MW-1	Water	05/05/20 13:30	05/06/20 02:20
60336229002	M-MW-7	Water	05/05/20 14:45	05/06/20 02:20
60336229003	M-MW-8	Water	05/05/20 11:30	05/06/20 02:20
60336229004	M-BMW-1	Water	05/05/20 14:30	05/06/20 02:20
60336229005	M-BMW-2	Water	05/05/20 13:50	05/06/20 02:20
60336229006	M-DUP-1	Water	05/05/20 08:00	05/06/20 02:20
60336229007	M-FB-1	Water	05/05/20 15:10	05/06/20 02:20
60336229008	M-MW-8 MS-1	Water	05/05/20 11:30	05/06/20 02:20
60336229009	M-MW-8 MSD-1	Water	05/05/20 11:30	05/06/20 02:20
60336229010	M-MW-2	Water	05/06/20 11:05	05/07/20 02:35
60336229012	M-MW-4	Water	05/06/20 14:02	05/07/20 02:35
60336229013	M-MW-5	Water	05/06/20 12:10	05/07/20 02:35
60336229014	M-MW-6	Water	05/06/20 13:40	05/07/20 02:35
60336229015	M-MW-3	Water	05/11/20 12:01	05/12/20 01:50

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 MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60336229001	M-MW-1	EPA 200.7	HKC	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JLH	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	CNB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	LDB	3	PASI-K		
		60336229002	M-MW-7	EPA 200.7	HKC	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	JLH			1	PASI-K		
EPA 903.1	MK1			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	MGS			1	PASI-K		
SM 2540C	CNB			1	PASI-K		
SM 3500-Fe B#4	LDB			1	PASI-K		
SM 3500-Fe B#4	CNB			1	PASI-K		
SM 4500-S-2 D	CNB			1	PASI-K		
EPA 300.0	LDB			3	PASI-K		
60336229003	M-MW-8			EPA 200.7	HKC	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	CNB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	LDB	3	PASI-K		
		60336229004	M-BMW-1	EPA 200.7	HKC	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	JLH			1	PASI-K		
EPA 903.1	MK1			1	PASI-PA		
EPA 300.0	LDB			3	PASI-K		

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60336229005	M-BMW-2	EPA 200.7	HKC, JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60336229006	M-DUP-1	EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60336229007	M-FB-1	EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60336229008	M-MW-8 MS-1	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60336229009	M-MW-8 MSD-1	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60336229010	M-MW-2	EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60336229012	M-MW-4	EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60336229013	M-MW-5	EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60336229014	M-MW-6	SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	HKC, JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60336229015	M-MW-3	EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR, LDB	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-1 Lab ID: 60336229001 Collected: 05/05/20 13:30 Received: 05/06/20 02:20 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	369	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 14:07	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 14:07	7440-41-7	
Boron	44.3J	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:07	7440-42-8	
Calcium	135000	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 14:07	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:07	7440-48-4	
Iron	15500	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 14:07	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:07	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:07	7439-93-2	
Magnesium	42700	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:07	7439-95-4	
Manganese	1830	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:07	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:07	7439-98-7	
Potassium	1560	ug/L	500	189	1	05/07/20 11:15	05/08/20 14:07	7440-09-7	
Sodium	28700	ug/L	500	107	1	05/07/20 11:15	05/08/20 14:07	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 14:59	7440-36-0	
Arsenic	0.69J	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 14:59	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 14:59	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 14:59	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 14:59	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 14:59	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/14/20 16:45	05/15/20 14:21	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	414	mg/L	20.0	8.4	1		05/15/20 10:47		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	685	mg/L	10.0	10.0	1		05/07/20 08:37		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	9.6	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	5.9	mg/L	0.20	0.035	1		05/06/20 13:57		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-1 **Lab ID: 60336229001** Collected: 05/05/20 13:30 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:33	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	42.3	mg/L	10.0	3.9	10		05/21/20 12:49	16887-00-6	
Fluoride	0.40	mg/L	0.20	0.075	1		05/20/20 23:30	16984-48-8	
Sulfate	111	mg/L	10.0	2.8	10		05/21/20 12:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-7 Lab ID: 60336229002 Collected: 05/05/20 14:45 Received: 05/06/20 02:20 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	38.7	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 14:10	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 14:10	7440-41-7	
Boron	27000	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:10	7440-42-8	
Calcium	409000	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 14:10	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:10	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 14:10	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:10	7439-92-1	
Lithium	55.1	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:10	7439-93-2	
Magnesium	44000	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:10	7439-95-4	
Manganese	<0.97	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:10	7439-96-5	
Molybdenum	351	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:10	7439-98-7	
Potassium	16600	ug/L	500	189	1	05/07/20 11:15	05/08/20 14:10	7440-09-7	
Sodium	76400	ug/L	500	107	1	05/07/20 11:15	05/08/20 14:10	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.37J	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:01	7440-36-0	
Arsenic	2.3	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:01	7440-38-2	
Cadmium	0.38J	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:01	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:01	7440-47-3	
Selenium	3.4	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:01	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:01	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/14/20 16:45	05/15/20 14:23	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	297	mg/L	20.0	8.4	1		05/15/20 10:52		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	2010	mg/L	20.0	20.0	1		05/07/20 08:37		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0000000 0010J	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		05/06/20 13:58		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-7 **Lab ID: 60336229002** Collected: 05/05/20 14:45 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:34	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	76.2	mg/L	5.0	1.9	5		05/21/20 13:05	16887-00-6	
Fluoride	0.33	mg/L	0.20	0.075	1		05/20/20 23:46	16984-48-8	
Sulfate	971	mg/L	100	27.8	100		05/21/20 13:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-8 Lab ID: 60336229003 Collected: 05/05/20 11:30 Received: 05/06/20 02:20 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	124	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 14:12	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 14:12	7440-41-7	
Boron	9690	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:12	7440-42-8	
Calcium	193000	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 14:12	7440-70-2	M1
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:12	7440-48-4	
Iron	10600	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 14:12	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:12	7439-92-1	
Lithium	29.9	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:12	7439-93-2	
Magnesium	39400	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:12	7439-95-4	
Manganese	1920	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:12	7439-96-5	
Molybdenum	219	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:12	7439-98-7	
Potassium	6830	ug/L	500	189	1	05/07/20 11:15	05/08/20 14:12	7440-09-7	
Sodium	34600	ug/L	500	107	1	05/07/20 11:15	05/08/20 14:12	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:02	7440-36-0	
Arsenic	7.9	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:02	7440-38-2	
Cadmium	0.11J	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:02	7440-43-9	
Chromium	0.35J	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:02	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:02	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:02	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/14/20 16:45	05/15/20 14:26	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	195	mg/L	20.0	8.4	1		05/15/20 10:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1000	mg/L	10.0	10.0	1		05/07/20 08:37		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	4.6	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	6.0	mg/L	0.40	0.070	2		05/06/20 13:32		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-8 **Lab ID: 60336229003** Collected: 05/05/20 11:30 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:34	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	28.9	mg/L	10.0	3.9	10		05/21/20 01:21	16887-00-6	B
Fluoride	0.42	mg/L	0.20	0.075	1		05/21/20 00:02	16984-48-8	
Sulfate	495	mg/L	50.0	13.9	50		05/21/20 02:08	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-BMW-1 **Lab ID: 60336229004** Collected: 05/05/20 14:30 Received: 05/06/20 02:20 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	337	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 14:18	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 14:18	7440-41-7	
Boron	337	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:18	7440-42-8	
Calcium	128000	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 14:18	7440-70-2	
Cobalt	1.7J	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:18	7440-48-4	
Iron	5180	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 14:18	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:18	7439-92-1	
Lithium	13.1	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:18	7439-93-2	
Magnesium	30200	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:18	7439-95-4	
Manganese	1970	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:18	7439-96-5	
Molybdenum	5.2J	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:18	7439-98-7	
Potassium	9830	ug/L	500	189	1	05/07/20 11:15	05/08/20 14:18	7440-09-7	
Sodium	55800	ug/L	500	107	1	05/07/20 11:15	05/08/20 14:18	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.10J	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:08	7440-36-0	
Arsenic	9.6	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:08	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:08	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:08	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:08	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:08	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/14/20 16:45	05/15/20 14:33	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	380	mg/L	20.0	8.4	1		05/15/20 11:07		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	677	mg/L	10.0	10.0	1		05/07/20 08:40		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	4.1	mg/L	0.050		1		05/12/20 13:10	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	0.035	1		05/06/20 13:57		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-BMW-1 **Lab ID: 60336229004** Collected: 05/05/20 14:30 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:35	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	84.8	mg/L	10.0	3.9	10		05/21/20 13:37	16887-00-6	
Fluoride	0.36	mg/L	0.20	0.075	1		05/21/20 02:56	16984-48-8	
Sulfate	246	mg/L	50.0	13.9	50		05/21/20 13:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-BMW-2 Lab ID: 60336229005 Collected: 05/05/20 13:50 Received: 05/06/20 02:20 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	578	ug/L	5.0	1.8	1	05/07/20 11:15	05/11/20 12:14	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/11/20 12:14	7440-41-7	
Boron	73.7J	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:21	7440-42-8	
Calcium	112000	ug/L	200	32.4	1	05/07/20 11:15	05/11/20 12:14	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:21	7440-48-4	
Iron	16100	ug/L	50.0	26.8	1	05/07/20 11:15	05/11/20 12:14	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:21	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/11/20 12:14	7439-93-2	
Magnesium	34600	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:21	7439-95-4	
Manganese	4270	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:21	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:21	7439-98-7	
Potassium	1510	ug/L	500	189	1	05/07/20 11:15	05/11/20 12:14	7440-09-7	
Sodium	22000	ug/L	500	107	1	05/07/20 11:15	05/11/20 12:14	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:09	7440-36-0	
Arsenic	1.1	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:09	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:09	7440-43-9	
Chromium	0.39J	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:09	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:09	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:09	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/14/20 16:45	05/15/20 14:35	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	408	mg/L	20.0	8.4	1		05/15/20 11:12		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	452	mg/L	10.0	10.0	1		05/07/20 08:40		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	14.6	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	1.4	mg/L	0.20	0.035	1		05/06/20 13:57		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-BMW-2 **Lab ID: 60336229005** Collected: 05/05/20 13:50 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:35	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	13.2	mg/L	1.0	0.39	1		05/21/20 03:12	16887-00-6	
Fluoride	0.42	mg/L	0.20	0.075	1		05/21/20 03:12	16984-48-8	
Sulfate	23.4	mg/L	2.0	0.56	2		05/21/20 14:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-DUP-1 Lab ID: 60336229006 Collected: 05/05/20 08:00 Received: 05/06/20 02:20 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	366	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 14:23	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 14:23	7440-41-7	
Boron	54.4J	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:23	7440-42-8	
Calcium	134000	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 14:23	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:23	7440-48-4	
Iron	15400	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 14:23	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:23	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:23	7439-93-2	
Magnesium	42600	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:23	7439-95-4	
Manganese	1820	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:23	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:23	7439-98-7	
Potassium	1580	ug/L	500	189	1	05/07/20 11:15	05/08/20 14:23	7440-09-7	
Sodium	28700	ug/L	500	107	1	05/07/20 11:15	05/08/20 14:23	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:11	7440-36-0	
Arsenic	0.70J	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:11	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:11	7440-43-9	
Chromium	0.23J	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:11	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:11	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:11	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/14/20 16:45	05/15/20 14:37	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	420	mg/L	20.0	8.4	1		05/15/20 11:19		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	648	mg/L	10.0	10.0	1		05/07/20 08:40		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	10.0	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	5.3	mg/L	0.40	0.070	2		05/06/20 13:31		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-DUP-1 **Lab ID: 60336229006** Collected: 05/05/20 08:00 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:35	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	42.5	mg/L	5.0	1.9	5		05/21/20 14:56	16887-00-6	
Fluoride	0.40	mg/L	0.20	0.075	1		05/21/20 03:28	16984-48-8	
Sulfate	108	mg/L	20.0	5.6	20		05/21/20 15:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-FB-1 Lab ID: 60336229007 Collected: 05/05/20 15:10 Received: 05/06/20 02:20 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	05/07/20 11:15	05/08/20 14:25	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 14:25	7440-41-7	
Boron	<11.7	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:25	7440-42-8	
Calcium	54.3J	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 14:25	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:25	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 14:25	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:25	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:25	7439-93-2	
Magnesium	<19.7	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:25	7439-95-4	
Manganese	<0.97	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:25	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:25	7439-98-7	
Potassium	<189	ug/L	500	189	1	05/07/20 11:15	05/08/20 14:25	7440-09-7	
Sodium	<107	ug/L	500	107	1	05/07/20 11:15	05/08/20 14:25	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:16	7440-36-0	
Arsenic	<0.086	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:16	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:16	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:16	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:16	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:16	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/14/20 16:45	05/15/20 14:44	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		05/15/20 11:30		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	6.0	mg/L	5.0	5.0	1		05/07/20 08:40		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0000000 0010J	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		05/06/20 13:58		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-FB-1 **Lab ID: 60336229007** Collected: 05/05/20 15:10 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:36	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		05/21/20 03:44	16887-00-6	
Fluoride	<0.075	mg/L	0.20	0.075	1		05/21/20 03:44	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		05/21/20 03:44	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-2 Lab ID: 60336229010 Collected: 05/06/20 11:05 Received: 05/07/20 02:35 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	308	ug/L	5.0	1.8	1	05/08/20 10:10	05/08/20 18:42	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/08/20 10:10	05/08/20 18:42	7440-41-7	
Boron	5940	ug/L	100	11.7	1	05/08/20 10:10	05/08/20 18:42	7440-42-8	M1
Calcium	137000	ug/L	200	32.4	1	05/08/20 10:10	05/08/20 18:42	7440-70-2	M1
Cobalt	<1.5	ug/L	5.0	1.5	1	05/08/20 10:10	05/08/20 18:42	7440-48-4	
Iron	48200	ug/L	50.0	26.8	1	05/08/20 10:10	05/08/20 18:42	7439-89-6	M1
Lead	<4.6	ug/L	10.0	4.6	1	05/08/20 10:10	05/08/20 18:42	7439-92-1	
Lithium	6.3J	ug/L	10.0	4.6	1	05/08/20 10:10	05/08/20 18:42	7439-93-2	
Magnesium	43200	ug/L	50.0	19.7	1	05/08/20 10:10	05/08/20 18:42	7439-95-4	M1
Manganese	5890	ug/L	5.0	0.97	1	05/08/20 10:10	05/08/20 18:42	7439-96-5	M1
Molybdenum	<1.7	ug/L	20.0	1.7	1	05/08/20 10:10	05/08/20 18:42	7439-98-7	
Potassium	2500	ug/L	500	189	1	05/08/20 10:10	05/08/20 18:42	7440-09-7	
Sodium	41100	ug/L	500	107	1	05/08/20 10:10	05/08/20 18:42	7440-23-5	M1
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:30	7440-36-0	
Arsenic	1.9	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:30	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:30	7440-43-9	
Chromium	0.30J	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:30	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:30	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:30	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/14/20 16:45	05/15/20 15:02	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	267	mg/L	20.0	8.4	1		05/15/20 13:04		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	767	mg/L	10.0	10.0	1		05/08/20 09:43		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	15.7	mg/L	0.050		1		05/26/20 09:18	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	32.5	mg/L	2.0	0.35	10		05/07/20 14:55		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-2 **Lab ID: 60336229010** Collected: 05/06/20 11:05 Received: 05/07/20 02:35 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	<0.039	mg/L	0.050	0.039	1		05/07/20 14:09	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	27.5	mg/L	2.0	0.78	2		05/26/20 22:07	16887-00-6	M1
Fluoride	0.25	mg/L	0.20	0.075	1		05/26/20 20:32	16984-48-8	
Sulfate	313	mg/L	50.0	13.9	50		05/26/20 21:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-4 Lab ID: 60336229012 Collected: 05/06/20 14:02 Received: 05/07/20 02:35 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	206	ug/L	5.0	1.8	1	05/08/20 10:10	05/08/20 18:49	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/08/20 10:10	05/08/20 18:49	7440-41-7	
Boron	10100	ug/L	100	11.7	1	05/08/20 10:10	05/08/20 18:49	7440-42-8	
Calcium	200000	ug/L	200	32.4	1	05/08/20 10:10	05/08/20 18:49	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/08/20 10:10	05/08/20 18:49	7440-48-4	
Iron	28600	ug/L	50.0	26.8	1	05/08/20 10:10	05/08/20 18:49	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/08/20 10:10	05/08/20 18:49	7439-92-1	
Lithium	22.9	ug/L	10.0	4.6	1	05/08/20 10:10	05/08/20 18:49	7439-93-2	
Magnesium	58500	ug/L	50.0	19.7	1	05/08/20 10:10	05/08/20 18:49	7439-95-4	
Manganese	770	ug/L	5.0	0.97	1	05/08/20 10:10	05/08/20 18:49	7439-96-5	
Molybdenum	56.2	ug/L	20.0	1.7	1	05/08/20 10:10	05/08/20 18:49	7439-98-7	
Potassium	6660	ug/L	500	189	1	05/08/20 10:10	05/08/20 18:49	7440-09-7	
Sodium	48300	ug/L	500	107	1	05/08/20 10:10	05/08/20 18:49	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:32	7440-36-0	
Arsenic	17.3	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:32	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:32	7440-43-9	
Chromium	0.29J	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:32	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:32	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:32	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/14/20 16:45	05/15/20 15:05	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	317	mg/L	20.0	8.4	1		05/15/20 13:10		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1070	mg/L	13.3	13.3	1		05/11/20 10:20		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	15.7	mg/L	0.050		1		05/26/20 09:18	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	12.9	mg/L	1.0	0.18	5		05/07/20 14:55		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-4 **Lab ID: 60336229012** Collected: 05/06/20 14:02 Received: 05/07/20 02:35 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	<0.039	mg/L	0.050	0.039	1		05/07/20 14:20	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	49.0	mg/L	5.0	1.9	5		05/26/20 22:55	16887-00-6	
Fluoride	0.34	mg/L	0.20	0.075	1		05/26/20 22:39	16984-48-8	
Sulfate	451	mg/L	50.0	13.9	50		05/26/20 23:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-5 **Lab ID: 60336229013** Collected: 05/06/20 12:10 Received: 05/07/20 02:35 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	252	ug/L	5.0	1.8	1	05/08/20 10:10	05/08/20 18:51	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/08/20 10:10	05/08/20 18:51	7440-41-7	
Boron	8210	ug/L	100	11.7	1	05/08/20 10:10	05/08/20 18:51	7440-42-8	
Calcium	183000	ug/L	200	32.4	1	05/08/20 10:10	05/08/20 18:51	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/08/20 10:10	05/08/20 18:51	7440-48-4	
Iron	18400	ug/L	50.0	26.8	1	05/08/20 10:10	05/08/20 18:51	7439-89-6	
Lead	4.8J	ug/L	10.0	4.6	1	05/08/20 10:10	05/08/20 18:51	7439-92-1	
Lithium	21.0	ug/L	10.0	4.6	1	05/08/20 10:10	05/08/20 18:51	7439-93-2	
Magnesium	59600	ug/L	50.0	19.7	1	05/08/20 10:10	05/08/20 18:51	7439-95-4	
Manganese	463	ug/L	5.0	0.97	1	05/08/20 10:10	05/08/20 18:51	7439-96-5	
Molybdenum	99.0	ug/L	20.0	1.7	1	05/08/20 10:10	05/08/20 18:51	7439-98-7	
Potassium	5720	ug/L	500	189	1	05/08/20 10:10	05/08/20 18:51	7440-09-7	
Sodium	45600	ug/L	500	107	1	05/08/20 10:10	05/08/20 18:51	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:38	7440-36-0	
Arsenic	24.1	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:38	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:38	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:38	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:38	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:38	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/14/20 16:45	05/15/20 15:12	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	362	mg/L	20.0	8.4	1		05/15/20 13:58		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1030	mg/L	13.3	13.3	1		05/11/20 10:20		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	13.4	mg/L	0.050		1		05/26/20 09:18	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	5.0	mg/L	0.20	0.035	1		05/07/20 14:55		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-5 **Lab ID: 60336229013** Collected: 05/06/20 12:10 Received: 05/07/20 02:35 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	<0.039	mg/L	0.050	0.039	1		05/07/20 14:24	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	37.7	mg/L	5.0	1.9	5		05/26/20 23:42	16887-00-6	
Fluoride	0.37	mg/L	0.20	0.075	1		05/26/20 23:27	16984-48-8	
Sulfate	361	mg/L	50.0	13.9	50		05/26/20 23:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-6 Lab ID: 60336229014 Collected: 05/06/20 13:40 Received: 05/07/20 02:35 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	50.6	ug/L	5.0	1.8	1	05/08/20 10:10	05/08/20 18:53	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/08/20 10:10	05/08/20 18:53	7440-41-7	
Boron	6500	ug/L	100	11.7	1	05/08/20 10:10	05/08/20 18:53	7440-42-8	
Calcium	384000	ug/L	200	32.4	1	05/08/20 10:10	05/11/20 12:17	7440-70-2	
Cobalt	7.8	ug/L	5.0	1.5	1	05/08/20 10:10	05/08/20 18:53	7440-48-4	
Iron	3390	ug/L	50.0	26.8	1	05/08/20 10:10	05/08/20 18:53	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/08/20 10:10	05/08/20 18:53	7439-92-1	
Lithium	114	ug/L	10.0	4.6	1	05/08/20 10:10	05/08/20 18:53	7439-93-2	
Magnesium	30800	ug/L	50.0	19.7	1	05/08/20 10:10	05/08/20 18:53	7439-95-4	
Manganese	1060	ug/L	5.0	0.97	1	05/08/20 10:10	05/08/20 18:53	7439-96-5	
Molybdenum	120	ug/L	20.0	1.7	1	05/08/20 10:10	05/08/20 18:53	7439-98-7	
Potassium	14200	ug/L	500	189	1	05/08/20 10:10	05/08/20 18:53	7440-09-7	
Sodium	16300	ug/L	500	107	1	05/08/20 10:10	05/11/20 12:17	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:40	7440-36-0	
Arsenic	2.3	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:40	7440-38-2	
Cadmium	0.15J	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:40	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:40	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:40	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:40	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/14/20 16:45	05/15/20 15:14	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	541	mg/L	20.0	8.4	1		05/15/20 14:10		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1370	mg/L	13.3	13.3	1		05/11/20 10:20		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	1.5	mg/L	0.050		1		05/26/20 09:18	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	1.9	mg/L	0.20	0.035	1		05/07/20 14:55		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-6 **Lab ID: 60336229014** Collected: 05/06/20 13:40 Received: 05/07/20 02:35 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	<0.039	mg/L	0.050	0.039	1		05/07/20 14:25	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	11.1	mg/L	1.0	0.39	1		05/27/20 01:02	16887-00-6	
Fluoride	0.32	mg/L	0.20	0.075	1		05/27/20 01:02	16984-48-8	
Sulfate	524	mg/L	50.0	13.9	50		05/27/20 00:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: **M-MW-3** Lab ID: **60336229015** Collected: 05/11/20 12:01 Received: 05/12/20 01:50 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	152	ug/L	5.0	1.8	1	05/14/20 09:35	05/14/20 20:35	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/14/20 09:35	05/14/20 20:35	7440-41-7	
Boron	8460	ug/L	100	11.7	1	05/14/20 09:35	05/14/20 20:35	7440-42-8	M1
Calcium	175000	ug/L	200	32.4	1	05/14/20 09:35	05/14/20 20:35	7440-70-2	M1
Cobalt	<1.5	ug/L	5.0	1.5	1	05/14/20 09:35	05/14/20 20:35	7440-48-4	
Iron	17400	ug/L	50.0	26.8	1	05/14/20 09:35	05/14/20 20:35	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/14/20 09:35	05/14/20 20:35	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	05/14/20 09:35	05/14/20 20:35	7439-93-2	
Magnesium	45400	ug/L	50.0	19.7	1	05/14/20 09:35	05/14/20 20:35	7439-95-4	
Manganese	1600	ug/L	5.0	0.97	1	05/14/20 09:35	05/14/20 20:35	7439-96-5	
Molybdenum	10.1J	ug/L	20.0	1.7	1	05/14/20 09:35	05/14/20 20:35	7439-98-7	
Potassium	2740	ug/L	500	189	1	05/14/20 09:35	05/14/20 20:35	7440-09-7	
Sodium	35800	ug/L	500	107	1	05/14/20 09:35	05/17/20 18:35	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/13/20 15:15	05/22/20 13:36	7440-36-0	
Arsenic	5.1	ug/L	1.0	0.086	1	05/13/20 15:15	05/22/20 13:36	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/13/20 15:15	05/22/20 13:36	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/13/20 15:15	05/22/20 13:36	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/13/20 15:15	05/22/20 13:36	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/13/20 15:15	05/22/20 13:36	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/14/20 16:45	05/15/20 15:21	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	330	mg/L	20.0	8.4	1		05/18/20 17:39		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	820	mg/L	10.0	10.0	1		05/14/20 13:23		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	13.3	mg/L	0.050		1		05/26/20 09:18	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	4.2	mg/L	0.40	0.070	2		05/13/20 10:01		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-3 **Lab ID: 60336229015** Collected: 05/11/20 12:01 Received: 05/12/20 01:50 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	<0.039	mg/L	0.050	0.039	1		05/14/20 11:09	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	19.0	mg/L	2.0	0.78	2		05/22/20 22:15	16887-00-6	
Fluoride	0.092J	mg/L	0.20	0.075	1		05/21/20 13:21	16984-48-8	
Sulfate	299	mg/L	20.0	5.6	20		05/21/20 13:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	654811	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007, 60336229010, 60336229012, 60336229013, 60336229014, 60336229015

METHOD BLANK: 2655972 Matrix: Water

Associated Lab Samples: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007, 60336229010, 60336229012, 60336229013, 60336229014, 60336229015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.058	0.20	0.058	05/15/20 14:17	

LABORATORY CONTROL SAMPLE: 2655973

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2655974 2655975

Parameter	Units	60336229003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.058	5	5	4.7	4.8	93	96	75-125	3	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC
Pace Project No.: 60336229

QC Batch: 653354 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: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007

METHOD BLANK: 2650432 Matrix: Water
Associated Lab Samples: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/11/20 12:10	
Beryllium	ug/L	<0.49	1.0	0.49	05/11/20 12:10	
Boron	ug/L	<11.7	100	11.7	05/08/20 13:49	
Calcium	ug/L	<32.4	200	32.4	05/11/20 12:10	
Cobalt	ug/L	<1.5	5.0	1.5	05/08/20 13:49	
Iron	ug/L	<26.8	50.0	26.8	05/11/20 12:10	
Lead	ug/L	<4.6	10.0	4.6	05/08/20 13:49	
Lithium	ug/L	<4.6	10.0	4.6	05/11/20 12:10	
Magnesium	ug/L	<19.7	50.0	19.7	05/08/20 13:49	
Manganese	ug/L	<0.97	5.0	0.97	05/08/20 13:49	
Molybdenum	ug/L	<1.7	20.0	1.7	05/08/20 13:49	
Potassium	ug/L	<189	500	189	05/11/20 12:10	
Sodium	ug/L	196J	500	107	05/11/20 12:10	

LABORATORY CONTROL SAMPLE: 2650433

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	978	98	85-115	
Beryllium	ug/L	1000	973	97	85-115	
Boron	ug/L	1000	931	93	85-115	
Calcium	ug/L	10000	9900	99	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	9950	99	85-115	
Lead	ug/L	1000	1030	103	85-115	
Lithium	ug/L	1000	952	95	85-115	
Magnesium	ug/L	10000	9430	94	85-115	
Manganese	ug/L	1000	934	93	85-115	
Molybdenum	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	9880	99	85-115	
Sodium	ug/L	10000	9690	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650434 2650435

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60336229003	Result	Spike Conc.	Spike Conc.						
Barium	ug/L	124	1000	1000	1130	1140	101	101	70-130	1	20
Beryllium	ug/L	<0.49	1000	1000	1010	1020	101	102	70-130	0	20

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650434												2650435	
Parameter	Units	60336229003		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD		
Boron	ug/L	9690	1000	1000	10700	10600	99	92	70-130	1	20		
Calcium	ug/L	193000	10000	10000	207000	205000	143	119	70-130	1	20	M1	
Cobalt	ug/L	<1.5	1000	1000	1030	1020	103	102	70-130	0	20		
Iron	ug/L	10600	10000	10000	21100	21000	105	104	70-130	0	20		
Lead	ug/L	<4.6	1000	1000	1010	1000	101	100	70-130	1	20		
Lithium	ug/L	29.9	1000	1000	1030	1040	100	101	70-130	1	20		
Magnesium	ug/L	39400	10000	10000	50400	49000	111	97	70-130	3	20		
Manganese	ug/L	1920	1000	1000	2930	2890	101	97	70-130	1	20		
Molybdenum	ug/L	219	1000	1000	1270	1260	105	104	70-130	1	20		
Potassium	ug/L	6830	10000	10000	17400	17500	106	107	70-130	1	20		
Sodium	ug/L	34600	10000	10000	45400	44800	107	102	70-130	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650436												2650437	
Parameter	Units	60336232002		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD		
Barium	ug/L	211	1000	1000	1210	1220	100	101	70-130	1	20		
Beryllium	ug/L	<0.49	1000	1000	1000	1010	100	101	70-130	1	20		
Boron	ug/L	8120	1000	1000	8980	9130	86	101	70-130	2	20		
Calcium	ug/L	228000	10000	10000	235000	240000	79	121	70-130	2	20		
Cobalt	ug/L	<1.5	1000	1000	1020	1020	102	102	70-130	0	20		
Iron	ug/L	15700	10000	10000	25700	26000	100	103	70-130	1	20		
Lead	ug/L	<4.6	1000	1000	1010	1020	101	101	70-130	1	20		
Lithium	ug/L	43.9	1000	1000	1050	1060	101	102	70-130	0	20		
Magnesium	ug/L	66000	10000	10000	76500	78200	106	122	70-130	2	20		
Manganese	ug/L	1160	1000	1000	2150	2180	98	102	70-130	1	20		
Molybdenum	ug/L	208	1000	1000	1250	1260	104	106	70-130	1	20		
Potassium	ug/L	7770	10000	10000	18100	18300	104	106	70-130	1	20		
Sodium	ug/L	39700	10000	10000	49300	50200	96	105	70-130	2	20		

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch: 653565 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: 60336229010, 60336229012, 60336229013, 60336229014

METHOD BLANK: 2651315 Matrix: Water
 Associated Lab Samples: 60336229010, 60336229012, 60336229013, 60336229014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/08/20 18:06	
Beryllium	ug/L	<0.49	1.0	0.49	05/08/20 18:06	
Boron	ug/L	<11.7	100	11.7	05/08/20 18:06	
Calcium	ug/L	<32.4	200	32.4	05/08/20 18:06	
Cobalt	ug/L	<1.5	5.0	1.5	05/08/20 18:06	
Iron	ug/L	<26.8	50.0	26.8	05/08/20 18:06	
Lead	ug/L	<4.6	10.0	4.6	05/08/20 18:06	
Lithium	ug/L	<4.6	10.0	4.6	05/08/20 18:06	
Magnesium	ug/L	<19.7	50.0	19.7	05/08/20 18:06	
Manganese	ug/L	<0.97	5.0	0.97	05/08/20 18:06	
Molybdenum	ug/L	<1.7	20.0	1.7	05/08/20 18:06	
Potassium	ug/L	<189	500	189	05/08/20 18:06	
Sodium	ug/L	287J	500	107	05/08/20 18:06	

LABORATORY CONTROL SAMPLE: 2651316

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1010	101	85-115	
Boron	ug/L	1000	973	97	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1070	107	85-115	
Iron	ug/L	10000	10400	104	85-115	
Lead	ug/L	1000	1060	106	85-115	
Lithium	ug/L	1000	997	100	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	980	98	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	
Potassium	ug/L	10000	10400	104	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE SAMPLE: 2651317

Parameter	Units	60336384001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	79.1	1000	1080	100	70-130	
Beryllium	ug/L	<1.0	1000	1000	100	70-130	
Boron	ug/L	124	1000	1100	98	70-130	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

MATRIX SPIKE SAMPLE: 2651317		60336384001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Calcium	ug/L	98200	10000	110000	118	70-130	
Cobalt	ug/L	<5.0	1000	1040	104	70-130	
Iron	ug/L	59.0	10000	10300	102	70-130	
Lead	ug/L	<10.0	1000	1020	102	70-130	
Lithium	ug/L	20.7	1000	1020	100	70-130	
Magnesium	ug/L	10500	10000	20400	99	70-130	
Manganese	ug/L	15.1	1000	971	96	70-130	
Molybdenum	ug/L	<20.0	1000	1040	104	70-130	
Potassium	ug/L	9040	10000	19800	108	70-130	
Sodium	ug/L	61400	10000	72300	110	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2651318		2651319									
Parameter	Units	60336229010	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	
Barium	ug/L	308	1000	1000	1220	1310	92	100	70-130	7	20
Beryllium	ug/L	<0.49	1000	1000	947	1010	95	101	70-130	6	20
Boron	ug/L	5940	1000	1000	6410	6870	46	93	70-130	7	20 M1
Calcium	ug/L	137000	10000	10000	136000	144000	-11	71	70-130	6	20 M1
Cobalt	ug/L	<1.5	1000	1000	984	1050	98	105	70-130	6	20
Iron	ug/L	48200	10000	10000	53900	57200	57	90	70-130	6	20 M1
Lead	ug/L	<4.6	1000	1000	978	1040	97	103	70-130	6	20
Lithium	ug/L	6.3J	1000	1000	947	1010	94	100	70-130	6	20
Magnesium	ug/L	43200	10000	10000	49400	52400	63	93	70-130	6	20 M1
Manganese	ug/L	5890	1000	1000	6370	6780	49	90	70-130	6	20 M1
Molybdenum	ug/L	<1.7	1000	1000	988	1060	99	106	70-130	7	20
Potassium	ug/L	2500	10000	10000	12300	13000	98	105	70-130	6	20
Sodium	ug/L	41100	10000	10000	47300	50700	62	96	70-130	7	20 M1

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	654620	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: 60336229015

METHOD BLANK: 2655280 Matrix: Water

Associated Lab Samples: 60336229015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/14/20 20:15	
Beryllium	ug/L	<0.49	1.0	0.49	05/14/20 20:15	
Boron	ug/L	<11.7	100	11.7	05/14/20 20:15	
Calcium	ug/L	<32.4	200	32.4	05/14/20 20:15	
Cobalt	ug/L	<1.5	5.0	1.5	05/14/20 20:15	
Iron	ug/L	<26.8	50.0	26.8	05/14/20 20:15	
Lead	ug/L	<4.6	10.0	4.6	05/14/20 20:15	
Lithium	ug/L	<4.6	10.0	4.6	05/14/20 20:15	
Magnesium	ug/L	<19.7	50.0	19.7	05/14/20 20:15	
Manganese	ug/L	<0.97	5.0	0.97	05/14/20 20:15	
Molybdenum	ug/L	<1.7	20.0	1.7	05/14/20 20:15	
Potassium	ug/L	<189	500	189	05/14/20 20:15	
Sodium	ug/L	<107	500	107	05/14/20 20:15	

LABORATORY CONTROL SAMPLE: 2655281

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1060	106	85-115	
Beryllium	ug/L	1000	1060	106	85-115	
Boron	ug/L	1000	1050	105	85-115	
Calcium	ug/L	10000	11000	110	85-115	
Cobalt	ug/L	1000	1070	107	85-115	
Iron	ug/L	10000	10800	108	85-115	
Lead	ug/L	1000	1080	108	85-115	
Lithium	ug/L	1000	1110	111	85-115	
Magnesium	ug/L	10000	10900	109	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Molybdenum	ug/L	1000	1080	108	85-115	
Potassium	ug/L	10000	10900	109	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE SAMPLE: 2655282

Parameter	Units	60336980002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L		34.8	1000	1080	105	70-130
Beryllium	ug/L		ND	1000	1040	104	70-130
Boron	ug/L		ND	1000	1020	101	70-130

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

MATRIX SPIKE SAMPLE: 2655282		60336980002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Calcium	ug/L	29200	10000	41000	117	70-130	
Cobalt	ug/L	61.0	1000	1100	104	70-130	
Iron	ug/L	ND	10000	10500	105	70-130	
Lead	ug/L	ND	1000	1030	103	70-130	
Lithium	ug/L	ND	1000	1020	102	70-130	
Magnesium	ug/L	4210	10000	14600	104	70-130	
Manganese	ug/L	ND	1000	985	98	70-130	
Molybdenum	ug/L	ND	1000	1040	104	70-130	
Potassium	ug/L	5520	10000	16200	106	70-130	
Sodium	ug/L	20700	10000	32700	120	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2655283		2655284									
Parameter	Units	60336229015	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	
Barium	ug/L	152	1000	1000	1170	1140	102	99	70-130	3	20
Beryllium	ug/L	<0.49	1000	1000	1010	981	101	98	70-130	3	20
Boron	ug/L	8460	1000	1000	9260	9050	80	59	70-130	2	20 M1
Calcium	ug/L	175000	10000	10000	181000	179000	63	44	70-130	1	20 M1
Cobalt	ug/L	<1.5	1000	1000	998	965	100	96	70-130	3	20
Iron	ug/L	17400	10000	10000	27300	26600	98	92	70-130	2	20
Lead	ug/L	<4.6	1000	1000	989	956	99	95	70-130	3	20
Lithium	ug/L	<4.6	1000	1000	1000	971	100	97	70-130	3	20
Magnesium	ug/L	45400	10000	10000	54800	53300	94	79	70-130	3	20
Manganese	ug/L	1600	1000	1000	2530	2460	93	86	70-130	3	20
Molybdenum	ug/L	10.1J	1000	1000	1040	1000	102	99	70-130	3	20
Potassium	ug/L	2740	10000	10000	12800	12600	101	98	70-130	2	20
Sodium	ug/L	35800	10000	10000	45200	45600	94	98	70-130	1	20

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	653625	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:	60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007, 60336229010, 60336229012, 60336229013, 60336229014		

METHOD BLANK:	2651687	Matrix:	Water
Associated Lab Samples:	60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007, 60336229010, 60336229012, 60336229013, 60336229014		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.097	1.0	0.097	05/22/20 14:56	
Arsenic	ug/L	<0.086	1.0	0.086	05/22/20 14:56	
Cadmium	ug/L	<0.056	0.50	0.056	05/22/20 14:56	
Chromium	ug/L	<0.22	1.0	0.22	05/22/20 14:56	
Selenium	ug/L	<0.18	1.0	0.18	05/22/20 14:56	
Thallium	ug/L	<0.093	1.0	0.093	05/22/20 14:56	

LABORATORY CONTROL SAMPLE: 2651688

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.0	102	85-115	
Arsenic	ug/L	40	39.7	99	85-115	
Cadmium	ug/L	40	38.7	97	85-115	
Chromium	ug/L	40	39.3	98	85-115	
Selenium	ug/L	40	37.7	94	85-115	
Thallium	ug/L	40	36.1	90	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2651689 2651690

Parameter	Units	60336229003		60336229004		60336229005		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Antimony	ug/L	<0.097	40	40	41.3	40.9	103	102	70-130	1	20
Arsenic	ug/L	7.9	40	40	49.1	48.9	103	103	70-130	0	20
Cadmium	ug/L	0.11J	40	40	38.1	38.0	95	95	70-130	0	20
Chromium	ug/L	0.35J	40	40	38.9	38.6	96	96	70-130	1	20
Selenium	ug/L	<0.18	40	40	36.7	36.5	92	91	70-130	1	20
Thallium	ug/L	<0.093	40	40	35.3	34.7	88	87	70-130	2	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2651691 2651692

Parameter	Units	60336232002		60336232003		60336232004		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Antimony	ug/L	<0.097	40	40	41.7	42.2	104	105	70-130	1	20
Arsenic	ug/L	4.1	40	40	45.1	45.4	103	103	70-130	1	20

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Parameter	Units	60336232002		2651691		2651692		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Cadmium	ug/L	0.12J	40	40	37.9	38.3	94	95	70-130	1	20			
Chromium	ug/L	0.26J	40	40	38.4	38.8	95	96	70-130	1	20			
Selenium	ug/L	<0.18	40	40	36.7	36.4	91	91	70-130	1	20			
Thallium	ug/L	<0.093	40	40	35.3	35.2	88	88	70-130	0	20			

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch: 654449	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: 60336229015

METHOD BLANK: 2654728 Matrix: Water

Associated Lab Samples: 60336229015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.097	1.0	0.097	05/22/20 13:11	
Arsenic	ug/L	<0.086	1.0	0.086	05/22/20 13:11	
Cadmium	ug/L	<0.056	0.50	0.056	05/22/20 13:11	
Chromium	ug/L	<0.22	1.0	0.22	05/22/20 13:11	
Selenium	ug/L	<0.18	1.0	0.18	05/22/20 13:11	
Thallium	ug/L	<0.093	1.0	0.093	05/22/20 13:11	

LABORATORY CONTROL SAMPLE: 2654729

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.2	98	85-115	
Arsenic	ug/L	40	40.0	100	85-115	
Cadmium	ug/L	40	38.5	96	85-115	
Chromium	ug/L	40	38.5	96	85-115	
Selenium	ug/L	40	40.7	102	85-115	
Thallium	ug/L	40	37.4	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2654730 2654731

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		60336928001	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Antimony	ug/L	<1.0	40	40	37.3	37.6	93	93	70-130	1	20		
Arsenic	ug/L	<1.0	40	40	37.7	38.1	93	94	70-130	1	20		
Cadmium	ug/L	0.0043	40	40	41.3	41.0	92	92	70-130	1	20		
		mg/L											
Chromium	ug/L	3.4	40	40	39.4	39.3	90	90	70-130	0	20		
Selenium	ug/L	<1.0	40	40	35.0	35.4	86	87	70-130	1	20		
Thallium	ug/L	<1.0	40	40	35.9	35.8	90	89	70-130	0	20		

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	654894	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007, 60336229010, 60336229012

METHOD BLANK: 2656508 Matrix: Water

Associated Lab Samples: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007, 60336229010, 60336229012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	05/15/20 10:29	

LABORATORY CONTROL SAMPLE: 2656509

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	491	98	90-110	

SAMPLE DUPLICATE: 2656510

Parameter	Units	60336229003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	195	201	4	10	

SAMPLE DUPLICATE: 2656511

Parameter	Units	60336232002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	557	567	2	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch: 655007

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60336229013, 60336229014

METHOD BLANK: 2656910

Matrix: Water

Associated Lab Samples: 60336229013, 60336229014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	05/15/20 13:46	

LABORATORY CONTROL SAMPLE: 2656911

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	529	106	90-110	

SAMPLE DUPLICATE: 2656912

Parameter	Units	60336229013 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	362	373	3	10	

SAMPLE DUPLICATE: 2656913

Parameter	Units	60336662001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	323	340	5	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch: 655298	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60336229015

METHOD BLANK: 2658336 Matrix: Water

Associated Lab Samples: 60336229015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	05/18/20 15:23	

LABORATORY CONTROL SAMPLE: 2658337

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	501	100	90-110	

SAMPLE DUPLICATE: 2658338

Parameter	Units	60337291004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	576	603	5	10	

SAMPLE DUPLICATE: 2658339

Parameter	Units	60337235005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	332	325	2	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	653307	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007

METHOD BLANK: 2650223 Matrix: Water

Associated Lab Samples: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/07/20 08:36	

LABORATORY CONTROL SAMPLE: 2650224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	999	100	80-120	

SAMPLE DUPLICATE: 2650225

Parameter	Units	60336229003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	0	10	

SAMPLE DUPLICATE: 2650226

Parameter	Units	60336232002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1100	1110	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch: 653525	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60336229010

METHOD BLANK: 2651199 Matrix: Water

Associated Lab Samples: 60336229010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/08/20 09:39	

LABORATORY CONTROL SAMPLE: 2651200

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	995	100	80-120	

SAMPLE DUPLICATE: 2651201

Parameter	Units	60336232006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	15.5	8.0	64	10	D6

SAMPLE DUPLICATE: 2651202

Parameter	Units	60336333001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	589	608	3	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	653753	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60336229012, 60336229013, 60336229014

METHOD BLANK: 2652608 Matrix: Water

Associated Lab Samples: 60336229012, 60336229013, 60336229014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/11/20 10:19	

LABORATORY CONTROL SAMPLE: 2652609

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	500	498	100	80-120	

SAMPLE DUPLICATE: 2652610

Parameter	Units	60336444009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	402	404	0	10	

SAMPLE DUPLICATE: 2652611

Parameter	Units	60336444002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	393	398	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch: 654595

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60336229015

METHOD BLANK: 2655200

Matrix: Water

Associated Lab Samples: 60336229015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/14/20 13:22	

LABORATORY CONTROL SAMPLE: 2655201

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	999	100	80-120	

SAMPLE DUPLICATE: 2655202

Parameter	Units	60336839001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1050	1040	1	10	

SAMPLE DUPLICATE: 2655203

Parameter	Units	60336897002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	561	577	3	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch: 653047 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: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007

METHOD BLANK: 2649221 Matrix: Water
 Associated Lab Samples: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	05/06/20 13:30	H6

LABORATORY CONTROL SAMPLE: 2649222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.2	108	90-110	H6

SAMPLE DUPLICATE: 2649223

Parameter	Units	60336232002 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	3.3	3.3	0	20	H6

SAMPLE DUPLICATE: 2649224

Parameter	Units	60336229003 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	6.0	6.0	0	20	H6

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch: 653424

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: 60336229010, 60336229012, 60336229013, 60336229014

METHOD BLANK: 2650763

Matrix: Water

Associated Lab Samples: 60336229010, 60336229012, 60336229013, 60336229014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	05/07/20 14:35	H6

LABORATORY CONTROL SAMPLE: 2650764

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	106	90-110	H6

SAMPLE DUPLICATE: 2650765

Parameter	Units	60336229011 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L		14.6			H6

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch: 654279	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: 60336229015

METHOD BLANK: 2654104 Matrix: Water

Associated Lab Samples: 60336229015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	05/13/20 10:00	H6

LABORATORY CONTROL SAMPLE: 2654105

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.2	110	90-110	H6

SAMPLE DUPLICATE: 2654106

Parameter	Units	60336229015 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	4.2	4.2	0	20	H6

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	653350	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:	60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007		

METHOD BLANK:	2650410	Matrix:	Water
Associated Lab Samples:	60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.039	0.050	0.039	05/07/20 13:29	

LABORATORY CONTROL SAMPLE: 2650411						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.51	101	80-120	

MATRIX SPIKE SAMPLE: 2650412							
Parameter	Units	60335923001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L		ND	0.5	0.48	96	75-125

SAMPLE DUPLICATE: 2650413						
Parameter	Units	60336229003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.039	<0.039		20	

SAMPLE DUPLICATE: 2650414						
Parameter	Units	60336232002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.039	<0.039		20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch: 653427	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: 60336229010, 60336229012, 60336229013, 60336229014

METHOD BLANK: 2650769 Matrix: Water
Associated Lab Samples: 60336229010, 60336229012, 60336229013, 60336229014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.039	0.050	0.039	05/07/20 13:49	

LABORATORY CONTROL SAMPLE: 2650770

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.50	100	80-120	

MATRIX SPIKE SAMPLE: 2650771

Parameter	Units	60336229011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L			0.31			M1

SAMPLE DUPLICATE: 2650772

Parameter	Units	60336229012 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.039	<0.039		20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch: 654593	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: 60336229015

METHOD BLANK: 2655192 Matrix: Water

Associated Lab Samples: 60336229015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.039	0.050	0.039	05/14/20 11:03	

LABORATORY CONTROL SAMPLE: 2655193

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.47	95	80-120	

MATRIX SPIKE SAMPLE: 2655194

Parameter	Units	60337054001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.10	0.5	0.53	86	75-125	

SAMPLE DUPLICATE: 2655195

Parameter	Units	60336839002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.039		20	

SAMPLE DUPLICATE: 2655196

Parameter	Units	60336995002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	11.3	11.3	0	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC
Pace Project No.: 60336229

QC Batch: 655900 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: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007

METHOD BLANK: 2660159 Matrix: Water
Associated Lab Samples: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.42J	1.0	0.39	05/20/20 18:13	
Fluoride	mg/L	<0.075	0.20	0.075	05/20/20 18:13	
Sulfate	mg/L	<0.28	1.0	0.28	05/20/20 18:13	

METHOD BLANK: 2660851 Matrix: Water
Associated Lab Samples: 60336229001, 60336229002, 60336229003, 60336229004, 60336229005, 60336229006, 60336229007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/21/20 09:26	
Fluoride	mg/L	<0.075	0.20	0.075	05/21/20 09:26	
Sulfate	mg/L	<0.28	1.0	0.28	05/21/20 09:26	

LABORATORY CONTROL SAMPLE: 2660160

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 2660852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

MATRIX SPIKE SAMPLE: 2660164

Parameter	Units	20154624002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	29.8	5	35.6	116	80-120	
Fluoride	mg/L	0.52	2.5	3.0	98	80-120	
Sulfate	mg/L	2.2	5	7.5	106	80-120	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Parameter	Units	60336229003		2660187		2660188		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Chloride	mg/L	28.9	50	50	78.6	78.4	100	99	80-120	0	15			
Fluoride	mg/L	0.42	2.5	2.5	3.0	3.1	101	106	80-120	4	15			
Sulfate	mg/L	495	250	250	744	748	100	101	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.

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	656053	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: 60336229015

METHOD BLANK: 2660796 Matrix: Water

Associated Lab Samples: 60336229015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/21/20 09:27	
Fluoride	mg/L	<0.075	0.20	0.075	05/21/20 09:27	
Sulfate	mg/L	<0.28	1.0	0.28	05/21/20 09:27	

METHOD BLANK: 2662459 Matrix: Water

Associated Lab Samples: 60336229015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/22/20 22:31	
Fluoride	mg/L	<0.075	0.20	0.075	05/22/20 22:31	
Sulfate	mg/L	<0.28	1.0	0.28	05/22/20 22:31	

METHOD BLANK: 2663227 Matrix: Water

Associated Lab Samples: 60336229015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/23/20 09:31	
Fluoride	mg/L	<0.075	0.20	0.075	05/23/20 09:31	
Sulfate	mg/L	<0.28	1.0	0.28	05/23/20 09:31	

LABORATORY CONTROL SAMPLE: 2660797

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	2.3	92	90-110	
Sulfate	mg/L	5	4.8	95	90-110	

LABORATORY CONTROL SAMPLE: 2662460

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Fluoride	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	5	4.7	95	90-110	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

LABORATORY CONTROL SAMPLE: 2663228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE SAMPLE: 2660798

Parameter	Units	60337288004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4280	2000	6540	113	80-120	
Fluoride	mg/L	ND	500	467	93	80-120	
Sulfate	mg/L	5800	2000	8050	112	80-120 E	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2660799 2660800

Parameter	Units	60336232002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	30.8	25	25	57.0	56.1	105	101	80-120	2	15	
Fluoride	mg/L	0.24	2.5	2.5	2.6	2.6	93	96	80-120	3	15	
Sulfate	mg/L	348	250	250	642	605	118	103	80-120	6	15	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	656597	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: 60336229010, 60336229012, 60336229013, 60336229014

METHOD BLANK: 2663400 Matrix: Water
Associated Lab Samples: 60336229010, 60336229012, 60336229013, 60336229014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.44J	1.0	0.39	05/26/20 09:16	
Fluoride	mg/L	<0.075	0.20	0.075	05/26/20 09:16	
Sulfate	mg/L	<0.28	1.0	0.28	05/26/20 09:16	

METHOD BLANK: 2664832 Matrix: Water
Associated Lab Samples: 60336229010, 60336229012, 60336229013, 60336229014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/27/20 09:17	
Fluoride	mg/L	<0.075	0.20	0.075	05/27/20 09:17	
Sulfate	mg/L	<0.28	1.0	0.28	05/27/20 09:17	

LABORATORY CONTROL SAMPLE: 2663401

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 2664833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2663402 2663403

Parameter	Units	2663402		2663403		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	357	250	250	625	621	107	106	80-120	1	15
Fluoride	mg/L	0.30	2.5	2.5	1.4	1.4	42	45	80-120	6	15 M1
Sulfate	mg/L	1.2	5	5	6.1	6.4	99	104	80-120	4	15

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

MATRIX SPIKE SAMPLE:		2663404					
Parameter	Units	60336229010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	27.5	10	39.6	121	80-120	M1
Fluoride	mg/L	0.25	2.5	2.9	106	80-120	
Sulfate	mg/L	313	250	574	104	80-120	

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

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-1 **Lab ID: 60336229001** Collected: 05/05/20 13:30 Received: 05/06/20 02:20 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	0.696 ± 0.433 (0.427) C:NA T:89%	pCi/L	05/29/20 12:47	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.275 ± 0.317 (0.667) C:81% T:86%	pCi/L	05/28/20 11:00	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-7 **Lab ID: 60336229002** Collected: 05/05/20 14:45 Received: 05/06/20 02:20 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	0.127 ± 0.289 (0.466) C:NA T:84%	pCi/L	05/29/20 12:47	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.636 ± 0.425 (0.825) C:81% T:81%	pCi/L	05/28/20 11:00	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-8 **Lab ID: 60336229003** Collected: 05/05/20 11:30 Received: 05/06/20 02:20 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 ± 0.341 (0.689) C:NA T:92%	pCi/L	05/29/20 12:47	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.498 ± 0.340 (0.651) C:78% T:88%	pCi/L	05/28/20 11:00	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-BMW-1 **Lab ID: 60336229004** Collected: 05/05/20 14:30 Received: 05/06/20 02:20 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	0.488 ± 0.362 (0.453) C:NA T:98%	pCi/L	05/29/20 12:47	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.468 ± 0.401 (0.816) C:77% T:90%	pCi/L	05/28/20 11:00	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-BMW-2 **Lab ID: 60336229005** Collected: 05/05/20 13:50 Received: 05/06/20 02:20 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	0.388 ± 0.364 (0.515) C:NA T:89%	pCi/L	05/29/20 12:47	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.02 ± 0.455 (0.774) C:79% T:85%	pCi/L	05/28/20 11:00	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-DUP-1 **Lab ID: 60336229006** Collected: 05/05/20 08:00 Received: 05/06/20 02:20 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	0.361 ± 0.411 (0.648) C:NA T:84%	pCi/L	05/29/20 13:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.569 ± 0.429 (0.855) C:80% T:84%	pCi/L	05/28/20 11:00	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-FB-1 **Lab ID: 60336229007** Collected: 05/05/20 15:10 Received: 05/06/20 02:20 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 ± 0.270 (0.550) C:NA T:91%	pCi/L	05/29/20 13:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.521 ± 0.450 (0.917) C:72% T:85%	pCi/L	05/28/20 11:01	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: M-MW-8 MS-1 Lab ID: 60336229008 Collected: 05/05/20 11:30 Received: 05/06/20 02:20 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	113.86 %REC ± NA (NA) C:NA T:NA	pCi/L	05/29/20 13:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	86.48 %REC ± NA (NA) C:NA T:NA	pCi/L	05/28/20 11:01	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-8 MSD-1 **Lab ID: 60336229009** Collected: 05/05/20 11:30 Received: 05/06/20 02:20 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	93.36 %REC 19.79 RPD ± NA (NA) C:NA T:NA	pCi/L	05/29/20 13:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	85.28 %REC 1.40 RPD ± NA (NA) C:NA T:NA	pCi/L	05/28/20 11:01	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-2 **Lab ID: 60336229010** Collected: 05/06/20 11:05 Received: 05/07/20 02:35 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	0.234 ± 0.269 (0.159) C:NA T:88%	pCi/L	05/29/20 13:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.205 ± 0.343 (0.746) C:78% T:87%	pCi/L	05/28/20 11:01	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-4 **Lab ID: 60336229012** Collected: 05/06/20 14:02 Received: 05/07/20 02:35 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	0.383 ± 0.358 (0.508) C:NA T:94%	pCi/L	05/29/20 13:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.828 ± 0.391 (0.667) C:78% T:89%	pCi/L	05/28/20 11:01	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-5 **Lab ID: 60336229013** Collected: 05/06/20 12:10 Received: 05/07/20 02:35 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 ± 0.362 (0.784) C:NA T:91%	pCi/L	06/01/20 13:17	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.734 ± 0.525 (1.02) C:67% T:86%	pCi/L	05/29/20 17:11	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-6 **Lab ID: 60336229014** Collected: 05/06/20 13:40 Received: 05/07/20 02:35 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 ± 0.356 (0.841) C:NA T:93%	pCi/L	06/01/20 13:33	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.954 ± 0.551 (1.01) C:67% T:84%	pCi/L	05/29/20 17:11	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Sample: M-MW-3 **Lab ID: 60336229015** Collected: 05/11/20 12:01 Received: 05/12/20 01:50 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 ± 0.519 (0.846) C:NA T:87%	pCi/L	06/03/20 11:25	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.360 ± 0.432 (0.915) C:75% T:75%	pCi/L	06/02/20 11:18	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	395976	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: 60336229013, 60336229014

METHOD BLANK: 1918037 Matrix: Water

Associated Lab Samples: 60336229013, 60336229014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.315 (0.666) C:NA T:83%	pCi/L	06/01/20 13:03	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	395975	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: 60336229013, 60336229014

METHOD BLANK:	1918035	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60336229013, 60336229014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0927 ± 0.344 (0.782) C:68% T:87%	pCi/L	05/29/20 12:46	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	397204	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: 60336229015

METHOD BLANK: 1923909 Matrix: Water

Associated Lab Samples: 60336229015

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.279 ± 0.329 (0.837) C:NA T:87%	pCi/L	06/03/20 11:25	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

QC Batch:	397205	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: 60336229015

METHOD BLANK:	1923910	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60336229015

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0299 ± 0.316 (0.747) C:77% T:82%	pCi/L	06/02/20 11:19	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

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.

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

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60336229001	M-MW-1	EPA 200.7	653354	EPA 200.7	653397
60336229002	M-MW-7	EPA 200.7	653354	EPA 200.7	653397
60336229003	M-MW-8	EPA 200.7	653354	EPA 200.7	653397
60336229004	M-BMW-1	EPA 200.7	653354	EPA 200.7	653397
60336229005	M-BMW-2	EPA 200.7	653354	EPA 200.7	653397
60336229006	M-DUP-1	EPA 200.7	653354	EPA 200.7	653397
60336229007	M-FB-1	EPA 200.7	653354	EPA 200.7	653397
60336229010	M-MW-2	EPA 200.7	653565	EPA 200.7	653594
60336229012	M-MW-4	EPA 200.7	653565	EPA 200.7	653594
60336229013	M-MW-5	EPA 200.7	653565	EPA 200.7	653594
60336229014	M-MW-6	EPA 200.7	653565	EPA 200.7	653594
60336229015	M-MW-3	EPA 200.7	654620	EPA 200.7	654757
60336229001	M-MW-1	EPA 200.8	653625	EPA 200.8	653679
60336229002	M-MW-7	EPA 200.8	653625	EPA 200.8	653679
60336229003	M-MW-8	EPA 200.8	653625	EPA 200.8	653679
60336229004	M-BMW-1	EPA 200.8	653625	EPA 200.8	653679
60336229005	M-BMW-2	EPA 200.8	653625	EPA 200.8	653679
60336229006	M-DUP-1	EPA 200.8	653625	EPA 200.8	653679
60336229007	M-FB-1	EPA 200.8	653625	EPA 200.8	653679
60336229010	M-MW-2	EPA 200.8	653625	EPA 200.8	653679
60336229012	M-MW-4	EPA 200.8	653625	EPA 200.8	653679
60336229013	M-MW-5	EPA 200.8	653625	EPA 200.8	653679
60336229014	M-MW-6	EPA 200.8	653625	EPA 200.8	653679
60336229015	M-MW-3	EPA 200.8	654449	EPA 200.8	654527
60336229001	M-MW-1	EPA 7470	654811	EPA 7470	654912
60336229002	M-MW-7	EPA 7470	654811	EPA 7470	654912
60336229003	M-MW-8	EPA 7470	654811	EPA 7470	654912
60336229004	M-BMW-1	EPA 7470	654811	EPA 7470	654912
60336229005	M-BMW-2	EPA 7470	654811	EPA 7470	654912
60336229006	M-DUP-1	EPA 7470	654811	EPA 7470	654912
60336229007	M-FB-1	EPA 7470	654811	EPA 7470	654912
60336229010	M-MW-2	EPA 7470	654811	EPA 7470	654912
60336229012	M-MW-4	EPA 7470	654811	EPA 7470	654912
60336229013	M-MW-5	EPA 7470	654811	EPA 7470	654912
60336229014	M-MW-6	EPA 7470	654811	EPA 7470	654912
60336229015	M-MW-3	EPA 7470	654811	EPA 7470	654912
60336229001	M-MW-1	EPA 903.1	395941		
60336229002	M-MW-7	EPA 903.1	395941		
60336229003	M-MW-8	EPA 903.1	395941		
60336229004	M-BMW-1	EPA 903.1	395941		
60336229005	M-BMW-2	EPA 903.1	395941		
60336229006	M-DUP-1	EPA 903.1	395941		
60336229007	M-FB-1	EPA 903.1	395941		
60336229008	M-MW-8 MS-1	EPA 903.1	395941		
60336229009	M-MW-8 MSD-1	EPA 903.1	395941		
60336229010	M-MW-2	EPA 903.1	395941		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60336229012	M-MW-4	EPA 903.1	395941		
60336229013	M-MW-5	EPA 903.1	395976		
60336229014	M-MW-6	EPA 903.1	395976		
60336229015	M-MW-3	EPA 903.1	397204		
60336229001	M-MW-1	EPA 904.0	395942		
60336229002	M-MW-7	EPA 904.0	395942		
60336229003	M-MW-8	EPA 904.0	395942		
60336229004	M-BMW-1	EPA 904.0	395942		
60336229005	M-BMW-2	EPA 904.0	395942		
60336229006	M-DUP-1	EPA 904.0	395942		
60336229007	M-FB-1	EPA 904.0	395942		
60336229008	M-MW-8 MS-1	EPA 904.0	395942		
60336229009	M-MW-8 MSD-1	EPA 904.0	395942		
60336229010	M-MW-2	EPA 904.0	395942		
60336229012	M-MW-4	EPA 904.0	395942		
60336229013	M-MW-5	EPA 904.0	395975		
60336229014	M-MW-6	EPA 904.0	395975		
60336229015	M-MW-3	EPA 904.0	397205		
60336229001	M-MW-1	SM 2320B	654894		
60336229002	M-MW-7	SM 2320B	654894		
60336229003	M-MW-8	SM 2320B	654894		
60336229004	M-BMW-1	SM 2320B	654894		
60336229005	M-BMW-2	SM 2320B	654894		
60336229006	M-DUP-1	SM 2320B	654894		
60336229007	M-FB-1	SM 2320B	654894		
60336229010	M-MW-2	SM 2320B	654894		
60336229012	M-MW-4	SM 2320B	654894		
60336229013	M-MW-5	SM 2320B	655007		
60336229014	M-MW-6	SM 2320B	655007		
60336229015	M-MW-3	SM 2320B	655298		
60336229001	M-MW-1	SM 2540C	653307		
60336229002	M-MW-7	SM 2540C	653307		
60336229003	M-MW-8	SM 2540C	653307		
60336229004	M-BMW-1	SM 2540C	653307		
60336229005	M-BMW-2	SM 2540C	653307		
60336229006	M-DUP-1	SM 2540C	653307		
60336229007	M-FB-1	SM 2540C	653307		
60336229010	M-MW-2	SM 2540C	653525		
60336229012	M-MW-4	SM 2540C	653753		
60336229013	M-MW-5	SM 2540C	653753		
60336229014	M-MW-6	SM 2540C	653753		
60336229015	M-MW-3	SM 2540C	654595		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60336229001	M-MW-1	SM 3500-Fe B#4	654157		
60336229002	M-MW-7	SM 3500-Fe B#4	654157		
60336229003	M-MW-8	SM 3500-Fe B#4	654157		
60336229004	M-BMW-1	SM 3500-Fe B#4	654157		
60336229005	M-BMW-2	SM 3500-Fe B#4	654157		
60336229006	M-DUP-1	SM 3500-Fe B#4	654157		
60336229007	M-FB-1	SM 3500-Fe B#4	654157		
60336229010	M-MW-2	SM 3500-Fe B#4	656533		
60336229012	M-MW-4	SM 3500-Fe B#4	656533		
60336229013	M-MW-5	SM 3500-Fe B#4	656533		
60336229014	M-MW-6	SM 3500-Fe B#4	656533		
60336229015	M-MW-3	SM 3500-Fe B#4	656533		
60336229001	M-MW-1	SM 3500-Fe B#4	653047		
60336229002	M-MW-7	SM 3500-Fe B#4	653047		
60336229003	M-MW-8	SM 3500-Fe B#4	653047		
60336229004	M-BMW-1	SM 3500-Fe B#4	653047		
60336229005	M-BMW-2	SM 3500-Fe B#4	653047		
60336229006	M-DUP-1	SM 3500-Fe B#4	653047		
60336229007	M-FB-1	SM 3500-Fe B#4	653047		
60336229010	M-MW-2	SM 3500-Fe B#4	653424		
60336229012	M-MW-4	SM 3500-Fe B#4	653424		
60336229013	M-MW-5	SM 3500-Fe B#4	653424		
60336229014	M-MW-6	SM 3500-Fe B#4	653424		
60336229015	M-MW-3	SM 3500-Fe B#4	654279		
60336229001	M-MW-1	SM 4500-S-2 D	653350		
60336229002	M-MW-7	SM 4500-S-2 D	653350		
60336229003	M-MW-8	SM 4500-S-2 D	653350		
60336229004	M-BMW-1	SM 4500-S-2 D	653350		
60336229005	M-BMW-2	SM 4500-S-2 D	653350		
60336229006	M-DUP-1	SM 4500-S-2 D	653350		
60336229007	M-FB-1	SM 4500-S-2 D	653350		
60336229010	M-MW-2	SM 4500-S-2 D	653427		
60336229012	M-MW-4	SM 4500-S-2 D	653427		
60336229013	M-MW-5	SM 4500-S-2 D	653427		
60336229014	M-MW-6	SM 4500-S-2 D	653427		
60336229015	M-MW-3	SM 4500-S-2 D	654593		
60336229001	M-MW-1	EPA 300.0	655900		
60336229002	M-MW-7	EPA 300.0	655900		
60336229003	M-MW-8	EPA 300.0	655900		
60336229004	M-BMW-1	EPA 300.0	655900		
60336229005	M-BMW-2	EPA 300.0	655900		
60336229006	M-DUP-1	EPA 300.0	655900		
60336229007	M-FB-1	EPA 300.0	655900		
60336229010	M-MW-2	EPA 300.0	656597		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MERAMEC ENERGY CTR MEC

Pace Project No.: 60336229

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60336229012	M-MW-4	EPA 300.0	656597		
60336229013	M-MW-5	EPA 300.0	656597		
60336229014	M-MW-6	EPA 300.0	656597		
60336229015	M-MW-3	EPA 300.0	656053		

REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60336229
60336229

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 X2y/c

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 15.0 Corr. Factor 10.1 Corrected 15.1 Date and initials of person examining contents: 5-6-2020 col
Temperature should be above freezing to 6°C 16.2, 1.3, 2.0, 1.2 16.3, 1.4, 2.1, 1.3

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	coolers out of temp had
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	only Radion
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Fe+2
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, 603022</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 checked="" type="checkbox"/> No	<u>5-6-20</u>
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: Jamie Chubb Date: 5/6/20



Sample Condition Upon Receipt

WO#: 60336229



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 zpc

Thermometer Used: 1296 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 16.0 Corr. Factor -0.7 Corrected 15.3
Temperature should be above freezing to 6°C 1.0 0.3

Date and initials of person examining contents: 5-7-2020

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>cooler out of temp had only</u>
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>Radon samples</u>
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>Fe²⁺</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	<u>Extremely low volume</u>
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>for unpreserved M-M-3</u>
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>received BPO, ^{full} BPIU with</u>
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>about a tablespoon of liquid</u>
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: Per Jeff Ingram, M-MW-3 will be recollected due to low volume upon arrival at lab.

Project Manager Review: Jamie Church Date: 5/7/20



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 7

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Golder Associates	Report To: Jeffrey Ingram	Company Name: Golder Associates Inc	Attention:	Company Name: Golder Associates Inc	Address:
Address: 13515 Barrett Parkway Dr., Ste 260	Copy To: Eric Schneider, Ryan Feldman	Address:		Address:	
Email To: jeffrey_ingram@golder.com	Purchase Order No.: COC #13	Pace Quote Reference:		Pace Quote Reference:	
Phone: 636-724-9191	Project Name: Ameren Meramec Energy Center MEC	Pace Project Manager:	Jamie Church	Pace Project Manager:	Jamie Church
Requested Due Date/TAT: Standard	Project Number: 153140602.0004A	Pace Profile #:	9285, line 1	Pace Profile #:	9285, line 1

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location: MO

STATE: MO

ITEM #	Section D Required Client Information	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)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES		Analysis Test ↑	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB				DATE	TIME			
1	M-MW-1				G	WT	6	Unpreserved		↑	Y	
2	M-MW-2		5/16/20	1105	G	WT	3	H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Chloride/Fluoride/Sulfate	Y		
3	M-MW-3			1020	G	WT			Alkalinity	N		
4	M-MW-4			1402	G	WT			App III and Cat/An Metals	N		
5	M-MW-5			1210	G	WT			TDS	N		
6	M-MW-6			1340	G	WT			Appendix IV Metals *	N		
7	M-MW-7				G	WT			Mercury	N		
8	M-MW-8				G	WT			Radium 226	N		
9	M-BMW-1				G	WT			Radium 226	N		
10	M-BMW-2				G	WT			Ferrous/Ferric Iron	N		
11	M-DUP-1				G	WT			SM4500-S2D Sulfide	N		
12	M-FB-1				G	WT			Residual Chlorine (Y/N)			60336229

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	<i>Eric Schneider</i>	5/16/20	1555	<i>Eric Schneider</i>	5/16/20	1555	Temp in °C
	<i>Jamie Church</i>	5/16/20	1700	<i>Jamie Church</i>	5/16/20	1700	Received on Ice (Y/N)
							Cooler (Y/N)
							Custom Sealed (Y/N)
							Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Eric Schneider

SIGNATURE of SAMPLER: *Eric Schneider*

DATE Signed (MM/DD/YY): 05/06/20



Sample Condition Upon Receipt

WO#: 60336229
60336229

Client Name: Goldier 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 ZPLC

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

Cooler Temperature (°C): As-read 0.0, 10.0 Corr. Factor +0.1 Corrected 0.7, 10.1 Date and initials of person examining contents: CS/22/MLV

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	Both spin containers received in cooler two
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	Fe ²⁺
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input 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>1003173, 1003202</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Jessie Clark Date 5/12/20



GOLDER

MEMORANDUM

DATE June 8, 2020

Project No. 153140602

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

DATA VALIDATION SUMMARY, MERAMEC ENERGY CENTER – MEC – DETECTION MONITORING AND ASSESSMENT MONITORING - DATA PACKAGE 60336229

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 blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as 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).
- When a compound was analyzed outside of hold time, sample results were qualified as estimates (J for detects, UJ for non-detects).
- 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 Inc.
 Project Name: Ameren - MEC
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140602
 Validation Date: 06/08/2020

Laboratory: Pace Analytical

SDG #: 60336229

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); EPA 7470 (Mercury); SM2320B (Alkalinity); SM2540C (TDS); SM3500-Fe B#4 (Ferric, Ferrous Iron); SM4500-S-2 D (Total Sulfide); EPA 300.0 (Anions); EPA 903.1/904.0 (Radium 226/228)

Matrix: Air Soil/Sed. Water Waste _____

Sample Names M-MW-1, M-MW-7, M-MW-8, M-BMW-1, M-BMW-2, M-DUP-1 M-FB-1, M-MW-8 MS-1, M-MW-8 MSD-1, M-MW-2, M-MW-4, M-MW-5, M-MW-6, M-MW-3

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>05/05 - 05/11/2020</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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 type="checkbox"/>	<input checked="" 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"/>	
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"/>	M-DUP-1 @ M-MW-1
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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 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:

M-MW-3 was received by the lab with an extremely low volume (~1 tablespoon). The sample was recollected 05/11/2020.

Some coolers wer out of temp, those out of temp had only radium samples.

Ferrous Iron analyzed outside of hold time in all samples.

Chloride, Ferrous Iron, and Sulfate were diluted in several samples, no qualification necessary.

MB: 2651315: Sodium (287 J), associated samples -29010, and -29012 through -29014, detections in sample > reporting limit, no qualification necessary.

2660159: Chloride (0.42 J), associated with samples -29001 through -29007, detections in sample > reporting limit or non-detect (-29007), no qualification necessary.

2663400: Chloride (0.44 J), associated with samples -29010, and -29012 through -29014, detections in sample > reporting limit, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

MB: 2650432 Sodium (196 J), associated with samples -29001 through 29007, detections in sample > reporting limit or non-detect (-29007), no qualification necessary.

FB: M-FB-1 @ M-MW-7: Calcium (54.3 J), TDS (6.0), Ferric Iron (0.0000000010 J)

DUP: Chromium non-detect in sample, detect in DUP, Radium-226 detected in sample, non-detect in DUP,
RPD exceeds limit (20%) for Boron

Laboratory Dup: 2651201: RPD exceeds limit (10%) for TDS, associated sample -32006 (unrelated sample)

MS/MSD: 2650434/2650435: MS % Rec high for Calcium, associated sample 60336229003

2651318: % Rec low for Boron, Calcium, Iron, Magnesium, Manganese, Sodium, associated sample 60336229010

2655283/2655284: MSD % Rec low for Boron, MS/MSD % rec low for Calcium, associated sample 60336229015

2663402/2663403: MS/MSD % Rec low for Fluoride, associated sample 60337357011 (unrelated sample)

2663404: MS % Rec high for Chloride, associated sample 60336229010

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
M-MW-1	Ferrous Iron	5.9	J	Analyzed outside of hold time
M-MW-8	"	6.0	J	"
M-BMW-1	"	1.1	J	"
M-BMW-2	"	1.4	J	"
M-DUP-1	"	5.3	J	"
M-MW-2	"	32.5	J	"
M-MW-4	"	12.9	J	"
M-MW-5	"	5.0	J	"
M-MW-6	"	1.9	J	"
M-MW-3	"	4.2	J	"
M-MW-7	"	0.035	UJ	Analyzed outside of hold time, non-detect
M-FB-1	"	0.035	UJ	"
M-MW-7	Ferric Iron	0.050	U	Detected in FB
M-MW-1	Chromium	0.22	UJ	Detected in sample, non-detect in DUP
"	Boron	44.3	J	DUP RPD exceeds limit
M-DUP-1	Chromium	0.23	J	Detected in sample, non-detect in DUP
"	Boron	54.4	J	DUP RPD exceeds limit
M-MW-8	Calcium	193000	J	MS % rec high
M-MW-2	Chloride	27.5	J	"
"	Boron	5940	J	MS/MSD % rec low
"	Calcium	137000	J	"
"	Iron	48200	J	"
"	Magnesium	43200	J	"
"	Manganese	5890	J	"
"	Sodium	41100	J	"
M-MW-3	Boron	8460	J	"
"	Calcium	175000	J	"
M-MW-1	Radium-226	0.696 ± 0.433	J	Detected in sample, non-detect in DUP
M-DUP-1	"	0.361 ± 0.411	UJ	"

Signature: _____ *Ann Mulhally* _____

Date: 6/08/2020

June 01, 2020

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

RE: Project: AMEREN MERAMEC ENERGY MEC-CA
Pace Project No.: 60336232

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on May 06, 2020. 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



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 MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

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

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

SAMPLE SUMMARY

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60336232001	M-MW-11S	Water	05/05/20 11:39	05/06/20 02:20
60336232002	M-MW-11D	Water	05/05/20 10:07	05/06/20 02:20
60336232003	M-TP-2	Water	05/05/20 13:23	05/06/20 02:20
60336232004	M-MW-10	Water	05/05/20 14:42	05/06/20 02:20
60336232005	M-CA-DUP-1	Water	05/05/20 08:00	05/06/20 02:20
60336232006	M-CA-FB-1	Water	05/05/20 15:20	05/06/20 02:20
60336232007	M-MW-11D MS	Water	05/05/20 10:07	05/06/20 02:20
60336232008	M-MW-11D MSD	Water	05/05/20 10:07	05/06/20 02:22

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 MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60336232001	M-MW-11S	EPA 200.7	HKC	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JLH	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	CNB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	LDB	3	PASI-K		
		60336232002	M-MW-11D	EPA 200.7	HKC	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	JLH			1	PASI-K		
EPA 903.1	MK1			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	MGS			1	PASI-K		
SM 2540C	CNB			1	PASI-K		
SM 3500-Fe B#4	LDB			1	PASI-K		
SM 3500-Fe B#4	CNB			1	PASI-K		
SM 4500-S-2 D	CNB			1	PASI-K		
EPA 300.0	JWR, LDB			3	PASI-K		
60336232003	M-TP-2			EPA 200.7	HKC	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	CNB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	LDB	3	PASI-K		
		60336232004	M-MW-10	EPA 200.7	HKC	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	JLH			1	PASI-K		
EPA 903.1	MK1			1	PASI-PA		

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR, LDB	3	PASI-K
60336232005	M-CA-DUP-1	EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60336232006	M-CA-FB-1	EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60336232007	M-MW-11D MS	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60336232008	M-MW-11D MSD	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City
PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-MW-11S Lab ID: 60336232001 Collected: 05/05/20 11:39 Received: 05/06/20 02:20 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	664	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 14:35	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 14:35	7440-41-7	
Boron	227	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:35	7440-42-8	
Calcium	294000	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 14:35	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:35	7440-48-4	
Iron	40000	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 14:35	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:35	7439-92-1	
Lithium	13.4	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:35	7439-93-2	
Magnesium	60700	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:35	7439-95-4	
Manganese	2650	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:35	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:35	7439-98-7	
Potassium	7450	ug/L	500	189	1	05/07/20 11:15	05/08/20 14:35	7440-09-7	
Sodium	17500	ug/L	500	107	1	05/07/20 11:15	05/08/20 14:35	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:18	7440-36-0	
Arsenic	3.8	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:18	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:18	7440-43-9	
Chromium	0.28J	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:18	7440-47-3	
Selenium	0.20J	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:18	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:18	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 17:04	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	1060	mg/L	20.0	8.4	1		05/15/20 11:41		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1020	mg/L	13.3	13.3	1		05/07/20 08:40		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	25.8	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	14.2	mg/L	1.0	0.18	5		05/06/20 13:33		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-MW-11S **Lab ID: 60336232001** Collected: 05/05/20 11:39 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:36	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	15.5	mg/L	1.0	0.39	1		05/21/20 17:03	16887-00-6	
Fluoride	0.13J	mg/L	0.20	0.075	1		05/21/20 17:03	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		05/21/20 17:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-MW-11D Lab ID: 60336232002 Collected: 05/05/20 10:07 Received: 05/06/20 02:20 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	211	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 14:37	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 14:37	7440-41-7	
Boron	8120	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:37	7440-42-8	
Calcium	228000	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 14:37	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:37	7440-48-4	
Iron	15700	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 14:37	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:37	7439-92-1	
Lithium	43.9	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:37	7439-93-2	
Magnesium	66000	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:37	7439-95-4	
Manganese	1160	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:37	7439-96-5	
Molybdenum	208	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:37	7439-98-7	
Potassium	7770	ug/L	500	189	1	05/07/20 11:15	05/08/20 14:37	7440-09-7	
Sodium	39700	ug/L	500	107	1	05/07/20 11:15	05/08/20 14:37	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:20	7440-36-0	
Arsenic	4.1	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:20	7440-38-2	
Cadmium	0.12J	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:20	7440-43-9	
Chromium	0.26J	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:20	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:20	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:20	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 17:06	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	557	mg/L	20.0	8.4	1		05/15/20 11:47		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1100	mg/L	13.3	13.3	1		05/07/20 08:41		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	12.4	mg/L	0.050		1		05/26/20 09:18	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	3.3	mg/L	0.20	0.035	1		05/06/20 13:32		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-MW-11D **Lab ID: 60336232002** Collected: 05/05/20 10:07 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	30.8	mg/L	5.0	1.9	5		05/23/20 00:06	16887-00-6	
Fluoride	0.24	mg/L	0.20	0.075	1		05/21/20 18:07	16984-48-8	
Sulfate	348	mg/L	50.0	13.9	50		05/21/20 18:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-TP-2 Lab ID: 60336232003 Collected: 05/05/20 13:23 Received: 05/06/20 02:20 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	72.8	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 14:43	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 14:43	7440-41-7	
Boron	2750	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:43	7440-42-8	
Calcium	243000	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 14:43	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:43	7440-48-4	
Iron	17300	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 14:43	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:43	7439-92-1	
Lithium	47.1	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:43	7439-93-2	
Magnesium	66800	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:43	7439-95-4	
Manganese	621	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:43	7439-96-5	
Molybdenum	7.3J	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:43	7439-98-7	
Potassium	9160	ug/L	500	189	1	05/07/20 11:15	05/08/20 14:43	7440-09-7	
Sodium	218000	ug/L	500	107	1	05/07/20 11:15	05/08/20 14:43	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.73J	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:25	7440-36-0	
Arsenic	4.5	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:25	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:25	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:25	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:25	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:25	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 17:13	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	406	mg/L	20.0	8.4	1		05/15/20 11:59		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1600	mg/L	13.3	13.3	1		05/07/20 08:41		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	11.8	mg/L	0.050		1		05/26/20 09:18	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	5.5	mg/L	0.20	0.035	1		05/06/20 13:33		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-TP-2 **Lab ID: 60336232003** Collected: 05/05/20 13:23 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	292	mg/L	50.0	19.4	50		05/21/20 19:58	16887-00-6	
Fluoride	0.24	mg/L	0.20	0.075	1		05/21/20 19:42	16984-48-8	
Sulfate	518	mg/L	50.0	13.9	50		05/21/20 19:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-MW-10 Lab ID: 60336232004 Collected: 05/05/20 14:42 Received: 05/06/20 02:20 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	156	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 14:46	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 14:46	7440-41-7	
Boron	1950	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:46	7440-42-8	
Calcium	247000	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 14:46	7440-70-2	
Cobalt	4.4J	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:46	7440-48-4	
Iron	15500	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 14:46	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:46	7439-92-1	
Lithium	42.7	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:46	7439-93-2	
Magnesium	62800	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:46	7439-95-4	
Manganese	837	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:46	7439-96-5	
Molybdenum	3.7J	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:46	7439-98-7	
Potassium	9820	ug/L	500	189	1	05/07/20 11:15	05/08/20 14:46	7440-09-7	
Sodium	65200	ug/L	500	107	1	05/07/20 11:15	05/08/20 14:46	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:26	7440-36-0	
Arsenic	11.5	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:26	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:26	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:26	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:26	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:26	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 17:16	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	587	mg/L	20.0	8.4	1		05/15/20 12:07		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1120	mg/L	13.3	13.3	1		05/07/20 08:41		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	11.7	mg/L	0.050		1		05/26/20 09:18	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	3.8	mg/L	0.20	0.035	1		05/06/20 13:57		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-MW-10 **Lab ID: 60336232004** Collected: 05/05/20 14:42 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:38	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	87.2	mg/L	20.0	7.8	20		05/21/20 20:29	16887-00-6	
Fluoride	0.20	mg/L	0.20	0.075	1		05/21/20 20:13	16984-48-8	
Sulfate	255	mg/L	20.0	5.6	20		05/21/20 20:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-CA-DUP-1 Lab ID: 60336232005 Collected: 05/05/20 08:00 Received: 05/06/20 02:20 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	644	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 14:48	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 14:48	7440-41-7	
Boron	229	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:48	7440-42-8	
Calcium	287000	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 14:48	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:48	7440-48-4	
Iron	38400	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 14:48	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:48	7439-92-1	
Lithium	12.7	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:48	7439-93-2	
Magnesium	60600	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:48	7439-95-4	
Manganese	2660	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:48	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:48	7439-98-7	
Potassium	7230	ug/L	500	189	1	05/07/20 11:15	05/08/20 14:48	7440-09-7	
Sodium	17100	ug/L	500	107	1	05/07/20 11:15	05/08/20 14:48	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:28	7440-36-0	
Arsenic	3.7	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:28	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:28	7440-43-9	
Chromium	0.26J	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:28	7440-47-3	
Selenium	0.19J	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:28	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:28	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 17:18	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	1040	mg/L	20.0	8.4	1		05/15/20 12:16		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1050	mg/L	13.3	13.3	1		05/07/20 08:41		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	26.0	mg/L	0.050		1		05/26/20 09:18	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	12.4	mg/L	1.0	0.18	5		05/06/20 13:32		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-CA-DUP-1 **Lab ID: 60336232005** Collected: 05/05/20 08:00 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:38	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	15.5	mg/L	1.0	0.39	1		05/21/20 21:17	16887-00-6	
Fluoride	0.13J	mg/L	0.20	0.075	1		05/21/20 21:17	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		05/21/20 21:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-CA-FB-1 Lab ID: 60336232006 Collected: 05/05/20 15:20 Received: 05/06/20 02:20 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	05/07/20 11:15	05/08/20 14:50	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 14:50	7440-41-7	
Boron	<11.7	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 14:50	7440-42-8	
Calcium	105J	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 14:50	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 14:50	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 14:50	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:50	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 14:50	7439-93-2	
Magnesium	<19.7	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 14:50	7439-95-4	
Manganese	<0.97	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 14:50	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 14:50	7439-98-7	
Potassium	<189	ug/L	500	189	1	05/07/20 11:15	05/08/20 14:50	7440-09-7	
Sodium	<107	ug/L	500	107	1	05/07/20 11:15	05/08/20 14:50	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/08/20 13:20	05/22/20 15:37	7440-36-0	
Arsenic	<0.086	ug/L	1.0	0.086	1	05/08/20 13:20	05/22/20 15:37	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/08/20 13:20	05/22/20 15:37	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/08/20 13:20	05/22/20 15:37	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/08/20 13:20	05/22/20 15:37	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/08/20 13:20	05/22/20 15:37	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 17:20	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		05/15/20 12:20		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	15.5	mg/L	5.0	5.0	1		05/08/20 09:39		D6
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0056J	mg/L	0.050		1		05/26/20 09:18	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		05/06/20 13:58		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-CA-FB-1 **Lab ID: 60336232006** Collected: 05/05/20 15:20 Received: 05/06/20 02:20 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	<0.039	mg/L	0.050	0.039	1		05/07/20 13:38	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		05/21/20 21:49	16887-00-6	
Fluoride	<0.075	mg/L	0.20	0.075	1		05/21/20 21:49	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		05/21/20 21:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

QC Batch: 654729

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

METHOD BLANK: 2655668

Matrix: Water

Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.085	0.20	0.085	05/15/20 15:04	

LABORATORY CONTROL SAMPLE: 2655669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2655670 2655671

Parameter	Units	60336232002		2655671		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	<0.085	5	5	4.7	4.3	94	86	75-125	8	20

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

QC Batch: 653354 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: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

METHOD BLANK: 2650432 Matrix: Water
 Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/11/20 12:10	
Beryllium	ug/L	<0.49	1.0	0.49	05/11/20 12:10	
Boron	ug/L	<11.7	100	11.7	05/08/20 13:49	
Calcium	ug/L	<32.4	200	32.4	05/11/20 12:10	
Cobalt	ug/L	<1.5	5.0	1.5	05/08/20 13:49	
Iron	ug/L	<26.8	50.0	26.8	05/11/20 12:10	
Lead	ug/L	<4.6	10.0	4.6	05/08/20 13:49	
Lithium	ug/L	<4.6	10.0	4.6	05/11/20 12:10	
Magnesium	ug/L	<19.7	50.0	19.7	05/08/20 13:49	
Manganese	ug/L	<0.97	5.0	0.97	05/08/20 13:49	
Molybdenum	ug/L	<1.7	20.0	1.7	05/08/20 13:49	
Potassium	ug/L	<189	500	189	05/11/20 12:10	
Sodium	ug/L	196J	500	107	05/11/20 12:10	

LABORATORY CONTROL SAMPLE: 2650433

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	978	98	85-115	
Beryllium	ug/L	1000	973	97	85-115	
Boron	ug/L	1000	931	93	85-115	
Calcium	ug/L	10000	9900	99	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	9950	99	85-115	
Lead	ug/L	1000	1030	103	85-115	
Lithium	ug/L	1000	952	95	85-115	
Magnesium	ug/L	10000	9430	94	85-115	
Manganese	ug/L	1000	934	93	85-115	
Molybdenum	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	9880	99	85-115	
Sodium	ug/L	10000	9690	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650434 2650435

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Result	Conc.						
Barium	ug/L	124	1000	1130	1140	101	101	70-130	1	20	
Beryllium	ug/L	<0.49	1000	1010	1020	101	102	70-130	0	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650434												2650435	
Parameter	Units	60336229003 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Boron	ug/L	9690	1000	1000	10700	10600	99	92	70-130	1	20		
Calcium	ug/L	193000	10000	10000	207000	205000	143	119	70-130	1	20	M1	
Cobalt	ug/L	<1.5	1000	1000	1030	1020	103	102	70-130	0	20		
Iron	ug/L	10600	10000	10000	21100	21000	105	104	70-130	0	20		
Lead	ug/L	<4.6	1000	1000	1010	1000	101	100	70-130	1	20		
Lithium	ug/L	29.9	1000	1000	1030	1040	100	101	70-130	1	20		
Magnesium	ug/L	39400	10000	10000	50400	49000	111	97	70-130	3	20		
Manganese	ug/L	1920	1000	1000	2930	2890	101	97	70-130	1	20		
Molybdenum	ug/L	219	1000	1000	1270	1260	105	104	70-130	1	20		
Potassium	ug/L	6830	10000	10000	17400	17500	106	107	70-130	1	20		
Sodium	ug/L	34600	10000	10000	45400	44800	107	102	70-130	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650436												2650437	
Parameter	Units	60336232002 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Barium	ug/L	211	1000	1000	1210	1220	100	101	70-130	1	20		
Beryllium	ug/L	<0.49	1000	1000	1000	1010	100	101	70-130	1	20		
Boron	ug/L	8120	1000	1000	8980	9130	86	101	70-130	2	20		
Calcium	ug/L	228000	10000	10000	235000	240000	79	121	70-130	2	20		
Cobalt	ug/L	<1.5	1000	1000	1020	1020	102	102	70-130	0	20		
Iron	ug/L	15700	10000	10000	25700	26000	100	103	70-130	1	20		
Lead	ug/L	<4.6	1000	1000	1010	1020	101	101	70-130	1	20		
Lithium	ug/L	43.9	1000	1000	1050	1060	101	102	70-130	0	20		
Magnesium	ug/L	66000	10000	10000	76500	78200	106	122	70-130	2	20		
Manganese	ug/L	1160	1000	1000	2150	2180	98	102	70-130	1	20		
Molybdenum	ug/L	208	1000	1000	1250	1260	104	106	70-130	1	20		
Potassium	ug/L	7770	10000	10000	18100	18300	104	106	70-130	1	20		
Sodium	ug/L	39700	10000	10000	49300	50200	96	105	70-130	2	20		

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

QC Batch:	653625	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: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

METHOD BLANK: 2651687 Matrix: Water
Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.097	1.0	0.097	05/22/20 14:56	
Arsenic	ug/L	<0.086	1.0	0.086	05/22/20 14:56	
Cadmium	ug/L	<0.056	0.50	0.056	05/22/20 14:56	
Chromium	ug/L	<0.22	1.0	0.22	05/22/20 14:56	
Selenium	ug/L	<0.18	1.0	0.18	05/22/20 14:56	
Thallium	ug/L	<0.093	1.0	0.093	05/22/20 14:56	

LABORATORY CONTROL SAMPLE: 2651688

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.0	102	85-115	
Arsenic	ug/L	40	39.7	99	85-115	
Cadmium	ug/L	40	38.7	97	85-115	
Chromium	ug/L	40	39.3	98	85-115	
Selenium	ug/L	40	37.7	94	85-115	
Thallium	ug/L	40	36.1	90	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2651689 2651690

Parameter	Units	60336229003		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Antimony	ug/L	<0.097	40	40	41.3	40.9	103	102	70-130	1	20		
Arsenic	ug/L	7.9	40	40	49.1	48.9	103	103	70-130	0	20		
Cadmium	ug/L	0.11J	40	40	38.1	38.0	95	95	70-130	0	20		
Chromium	ug/L	0.35J	40	40	38.9	38.6	96	96	70-130	1	20		
Selenium	ug/L	<0.18	40	40	36.7	36.5	92	91	70-130	1	20		
Thallium	ug/L	<0.093	40	40	35.3	34.7	88	87	70-130	2	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2651691 2651692

Parameter	Units	60336232002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Antimony	ug/L	<0.097	40	40	41.7	42.2	104	105	70-130	1	20		
Arsenic	ug/L	4.1	40	40	45.1	45.4	103	103	70-130	1	20		
Cadmium	ug/L	0.12J	40	40	37.9	38.3	94	95	70-130	1	20		
Chromium	ug/L	0.26J	40	40	38.4	38.8	95	96	70-130	1	20		

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Parameter	Units	60336232002		2651691		2651692		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Selenium	ug/L	<0.18	40	40	36.7	36.4	91	91	70-130	1	20			
Thallium	ug/L	<0.093	40	40	35.3	35.2	88	88	70-130	0	20			

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

QC Batch: 654894

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

METHOD BLANK: 2656508

Matrix: Water

Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<8.4	20.0	8.4	05/15/20 10:29	

LABORATORY CONTROL SAMPLE: 2656509

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	491	98	90-110	

SAMPLE DUPLICATE: 2656510

Parameter	Units	60336229003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	195	201	4	10	

SAMPLE DUPLICATE: 2656511

Parameter	Units	60336232002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	557	567	2	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

QC Batch:	653307	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005

METHOD BLANK: 2650223 Matrix: Water

Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/07/20 08:36	

LABORATORY CONTROL SAMPLE: 2650224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	999	100	80-120	

SAMPLE DUPLICATE: 2650225

Parameter	Units	60336229003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	0	10	

SAMPLE DUPLICATE: 2650226

Parameter	Units	60336232002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1100	1110	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

QC Batch: 653525

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60336232006

METHOD BLANK: 2651199

Matrix: Water

Associated Lab Samples: 60336232006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/08/20 09:39	

LABORATORY CONTROL SAMPLE: 2651200

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	995	100	80-120	

SAMPLE DUPLICATE: 2651201

Parameter	Units	60336232006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	15.5	8.0	64	10	D6

SAMPLE DUPLICATE: 2651202

Parameter	Units	60336333001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	589	608	3	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

QC Batch: 653047

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: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

METHOD BLANK: 2649221

Matrix: Water

Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	05/06/20 13:30	H6

LABORATORY CONTROL SAMPLE: 2649222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.2	108	90-110	H6

SAMPLE DUPLICATE: 2649223

Parameter	Units	60336232002 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	3.3	3.3	0	20	H6

SAMPLE DUPLICATE: 2649224

Parameter	Units	60336229003 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	6.0	6.0	0	20	H6

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

QC Batch: 653350

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: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

METHOD BLANK: 2650410

Matrix: Water

Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.039	0.050	0.039	05/07/20 13:29	

LABORATORY CONTROL SAMPLE: 2650411

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.51	101	80-120	

MATRIX SPIKE SAMPLE: 2650412

Parameter	Units	60335923001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.48	96	75-125	

SAMPLE DUPLICATE: 2650413

Parameter	Units	60336229003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.039	<0.039		20	

SAMPLE DUPLICATE: 2650414

Parameter	Units	60336232002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.039	<0.039		20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

QC Batch: 656053 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: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

METHOD BLANK: 2660796 Matrix: Water
 Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/21/20 09:27	
Fluoride	mg/L	<0.075	0.20	0.075	05/21/20 09:27	
Sulfate	mg/L	<0.28	1.0	0.28	05/21/20 09:27	

METHOD BLANK: 2662459 Matrix: Water
 Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/22/20 22:31	
Fluoride	mg/L	<0.075	0.20	0.075	05/22/20 22:31	
Sulfate	mg/L	<0.28	1.0	0.28	05/22/20 22:31	

METHOD BLANK: 2663227 Matrix: Water
 Associated Lab Samples: 60336232001, 60336232002, 60336232003, 60336232004, 60336232005, 60336232006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/23/20 09:31	
Fluoride	mg/L	<0.075	0.20	0.075	05/23/20 09:31	
Sulfate	mg/L	<0.28	1.0	0.28	05/23/20 09:31	

LABORATORY CONTROL SAMPLE: 2660797

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	2.3	92	90-110	
Sulfate	mg/L	5	4.8	95	90-110	

LABORATORY CONTROL SAMPLE: 2662460

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Fluoride	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	5	4.7	95	90-110	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

LABORATORY CONTROL SAMPLE: 2663228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.3	94	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE SAMPLE: 2660798

Parameter	Units	60337288004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4280	2000	6540	113	80-120	
Fluoride	mg/L	ND	500	467	93	80-120	
Sulfate	mg/L	5800	2000	8050	112	80-120 E	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2660799 2660800

Parameter	Units	60336232002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	30.8	25	25	57.0	56.1	105	101	80-120	2	15	
Fluoride	mg/L	0.24	2.5	2.5	2.6	2.6	93	96	80-120	3	15	
Sulfate	mg/L	348	250	250	642	605	118	103	80-120	6	15	

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

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-MW-11S **Lab ID: 60336232001** Collected: 05/05/20 11:39 Received: 05/06/20 02:20 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	0.474 ± 0.398 (0.570) C:NA T:100%	pCi/L	05/29/20 12:33	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.814 ± 0.411 (0.721) C:74% T:90%	pCi/L	05/28/20 11:02	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: M-MW-11D Lab ID: 60336232002 Collected: 05/05/20 10:07 Received: 05/06/20 02:20 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.312 ± 0.434 (0.734) C:NA T:89%	pCi/L	05/29/20 12:33	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.11 ± 0.433 (0.658) C:75% T:88%	pCi/L	05/28/20 10:59	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-TP-2 **Lab ID: 60336232003** Collected: 05/05/20 13:23 Received: 05/06/20 02:20 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	0.578 ± 0.398 (0.425) C:NA T:92%	pCi/L	05/29/20 12:33	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.963 ± 0.394 (0.606) C:76% T:87%	pCi/L	05/28/20 10:59	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-MW-10 **Lab ID: 60336232004** Collected: 05/05/20 14:42 Received: 05/06/20 02:20 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	0.280 ± 0.292 (0.412) C:NA T:90%	pCi/L	05/29/20 12:33	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.31 ± 0.459 (0.644) C:78% T:84%	pCi/L	05/28/20 10:59	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: M-CA-DUP-1 Lab ID: 60336232005 Collected: 05/05/20 08:00 Received: 05/06/20 02:20 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.498 ± 0.424 (0.595) C:NA T:92%	pCi/L	05/29/20 12:33	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.07 ± 0.365 (0.468) C:79% T:95%	pCi/L	05/28/20 10:59	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: M-CA-FB-1 Lab ID: 60336232006 Collected: 05/05/20 15:20 Received: 05/06/20 02:20 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.0539 ± 0.279 (0.580) C:NA T:97%	pCi/L	05/29/20 12:33	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.560 ± 0.333 (0.597) C:74% T:82%	pCi/L	05/28/20 10:59	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-MW-11D MS **Lab ID: 60336232007** Collected: 05/05/20 10:07 Received: 05/06/20 02:20 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • Sample collection time on containers does not match Pace Analytical COC; client was notified.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	92.82 %REC ± NA (NA) C:NA T:NA	pCi/L	05/29/20 12:47	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	107.69 %REC ± NA (NA) C:NA T:NA	pCi/L	05/28/20 10:59	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Sample: M-MW-11D MSD **Lab ID: 60336232008** Collected: 05/05/20 10:07 Received: 05/06/20 02:22 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	101.83 %REC 9.25 RPD ± NA (NA) C:NA T:NA	pCi/L	05/29/20 12:47	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	105.97 %REC 1.61 RPD ± NA (NA) C:NA T:NA	pCi/L	05/28/20 11:00	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

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

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.

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

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60336232001	M-MW-11S	EPA 200.7	653354	EPA 200.7	653397
60336232002	M-MW-11D	EPA 200.7	653354	EPA 200.7	653397
60336232003	M-TP-2	EPA 200.7	653354	EPA 200.7	653397
60336232004	M-MW-10	EPA 200.7	653354	EPA 200.7	653397
60336232005	M-CA-DUP-1	EPA 200.7	653354	EPA 200.7	653397
60336232006	M-CA-FB-1	EPA 200.7	653354	EPA 200.7	653397
60336232001	M-MW-11S	EPA 200.8	653625	EPA 200.8	653679
60336232002	M-MW-11D	EPA 200.8	653625	EPA 200.8	653679
60336232003	M-TP-2	EPA 200.8	653625	EPA 200.8	653679
60336232004	M-MW-10	EPA 200.8	653625	EPA 200.8	653679
60336232005	M-CA-DUP-1	EPA 200.8	653625	EPA 200.8	653679
60336232006	M-CA-FB-1	EPA 200.8	653625	EPA 200.8	653679
60336232001	M-MW-11S	EPA 7470	654729	EPA 7470	654919
60336232002	M-MW-11D	EPA 7470	654729	EPA 7470	654919
60336232003	M-TP-2	EPA 7470	654729	EPA 7470	654919
60336232004	M-MW-10	EPA 7470	654729	EPA 7470	654919
60336232005	M-CA-DUP-1	EPA 7470	654729	EPA 7470	654919
60336232006	M-CA-FB-1	EPA 7470	654729	EPA 7470	654919
60336232001	M-MW-11S	EPA 903.1	395941		
60336232002	M-MW-11D	EPA 903.1	395941		
60336232003	M-TP-2	EPA 903.1	395941		
60336232004	M-MW-10	EPA 903.1	395941		
60336232005	M-CA-DUP-1	EPA 903.1	395941		
60336232006	M-CA-FB-1	EPA 903.1	395941		
60336232007	M-MW-11D MS	EPA 903.1	395941		
60336232008	M-MW-11D MSD	EPA 903.1	395941		
60336232001	M-MW-11S	EPA 904.0	395942		
60336232002	M-MW-11D	EPA 904.0	395942		
60336232003	M-TP-2	EPA 904.0	395942		
60336232004	M-MW-10	EPA 904.0	395942		
60336232005	M-CA-DUP-1	EPA 904.0	395942		
60336232006	M-CA-FB-1	EPA 904.0	395942		
60336232007	M-MW-11D MS	EPA 904.0	395942		
60336232008	M-MW-11D MSD	EPA 904.0	395942		
60336232001	M-MW-11S	SM 2320B	654894		
60336232002	M-MW-11D	SM 2320B	654894		
60336232003	M-TP-2	SM 2320B	654894		
60336232004	M-MW-10	SM 2320B	654894		
60336232005	M-CA-DUP-1	SM 2320B	654894		
60336232006	M-CA-FB-1	SM 2320B	654894		
60336232001	M-MW-11S	SM 2540C	653307		
60336232002	M-MW-11D	SM 2540C	653307		
60336232003	M-TP-2	SM 2540C	653307		
60336232004	M-MW-10	SM 2540C	653307		
60336232005	M-CA-DUP-1	SM 2540C	653307		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MERAMEC ENERGY MEC-CA

Pace Project No.: 60336232

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60336232006	M-CA-FB-1	SM 2540C	653525		
60336232001	M-MW-11S	SM 3500-Fe B#4	654157		
60336232002	M-MW-11D	SM 3500-Fe B#4	656533		
60336232003	M-TP-2	SM 3500-Fe B#4	656533		
60336232004	M-MW-10	SM 3500-Fe B#4	656533		
60336232005	M-CA-DUP-1	SM 3500-Fe B#4	656533		
60336232006	M-CA-FB-1	SM 3500-Fe B#4	656533		
60336232001	M-MW-11S	SM 3500-Fe B#4	653047		
60336232002	M-MW-11D	SM 3500-Fe B#4	653047		
60336232003	M-TP-2	SM 3500-Fe B#4	653047		
60336232004	M-MW-10	SM 3500-Fe B#4	653047		
60336232005	M-CA-DUP-1	SM 3500-Fe B#4	653047		
60336232006	M-CA-FB-1	SM 3500-Fe B#4	653047		
60336232001	M-MW-11S	SM 4500-S-2 D	653350		
60336232002	M-MW-11D	SM 4500-S-2 D	653350		
60336232003	M-TP-2	SM 4500-S-2 D	653350		
60336232004	M-MW-10	SM 4500-S-2 D	653350		
60336232005	M-CA-DUP-1	SM 4500-S-2 D	653350		
60336232006	M-CA-FB-1	SM 4500-S-2 D	653350		
60336232001	M-MW-11S	EPA 300.0	656053		
60336232002	M-MW-11D	EPA 300.0	656053		
60336232003	M-TP-2	EPA 300.0	656053		
60336232004	M-MW-10	EPA 300.0	656053		
60336232005	M-CA-DUP-1	EPA 300.0	656053		
60336232006	M-CA-FB-1	EPA 300.0	656053		

REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60336232



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 X2ylc

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 15.0 Corr. Factor 70.1 Corrected 15.1

Date and initials of person examining contents: 5-6-2020 for

Temperature should be above freezing to 6°C 16.2, 1.3, 2.0, 1.2 16.3, 1.4, 2.1, 1.3

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>coolers out of temp had</u>
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>only Radium</u>
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<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) <u>Lot # 603173, 603022</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 checked="" type="checkbox"/> No <u>5.620</u>	
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: Jamie Church _____ Date: 5/6/20



GOLDER

MEMORANDUM

DATE June 3, 2020

Project No. 153140602

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

**DATA VALIDATION SUMMARY, MERAMEC ENERGY CENTER – MEC-CA – CORRECTIVE ACTION
SAMPLING - DATA PACKAGE 60336232**

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

- When duplicate criterion was not met, the associated sample result was qualified as an estimate (J).
- When a compound was analyzed outside of hold time, sample results were qualified as estimates (J for detects, UJ for non-detects).
- 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 Inc.
 Project Name: Ameren - MEC - MEC-CA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140602
 Validation Date: 06/03/2020

Laboratory: Pace Analytical

SDG #: 60336232

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); EPA 7470 (Mercury); SM2320B (Alkalinity); SM2540C (TDS); SM3500-Fe B#4 (Ferric, Ferrous Iron); SM4500-S-2 D (Total Sulfide); EPA 300.0 (Anions); EPA 903.1/904.0 (Radium 226/228)

Matrix: Air Soil/Sed. Water Waste _____

Sample Names M-MW-11S, M-MW-11D, M-TP-2, M-MW-10, M-CA-DUP-1, M-CA-FB-1, M-MW-11D MS, M-MW-11D MSD

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>05/05/2020</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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"/>	<u>Coolers out of temp for Radium</u>
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"/>	_____

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 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"/>	M-CA-DUP-1 @ M-MW-11S
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 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:

Ferrous Iron analyzed outside of hold time in all samples.

Chloride, Ferrous Iron, and Sulfate were diluted in several samples, no qualification necessary.

MB: 2650432: Sodium (196 J), associated samples -32001 through -32006, detections in sample > reporting limit or non-detect (-32006), no qualification necessary.

FB: M-CA-FB-1 @ M-MW-10: Calcium (105 J), TDS (15.5), Ferric Iron (0.0056 J), results > 10x blank results, no qualification necessary.

July 20, 2020

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

RE: Project: AMEREN MERAMEC CTR MEC-CA
Pace Project No.: 60340838

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on June 24, 2020. 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



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 MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Pace Analytical Services Pennsylvania

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

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Florida: Cert E871149 SEKS WET

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 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

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

SAMPLE SUMMARY

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60340838001	M-MW-11S	Water	06/22/20 16:30	06/24/20 04:45
60340838002	M-MW-11D	Water	06/22/20 16:50	06/24/20 04:45
60340838003	M-TP-2	Water	06/22/20 14:45	06/24/20 04:45
60340838004	M-MW-10	Water	06/22/20 14:25	06/24/20 04:45
60340838005	M-CA-DUP-1	Water	06/22/20 08:00	06/24/20 04:45
60340838006	M-CA-FB-1	Water	06/22/20 17:05	06/24/20 04:45
60340838007	M-CA-MS-1	Water	06/22/20 16:30	06/24/20 04:45
60340838008	M-CA-MSD-1	Water	06/22/20 16:30	06/24/20 04:45

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 MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60340838001	M-MW-11S	EPA 200.7	JDE	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340838002	M-MW-11D	EPA 200.7	JDE	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340838003	M-TP-2	EPA 200.7	JDE	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340838004	M-MW-10	EPA 200.7	JDE	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340838005	M-CA-DUP-1	EPA 200.7	JDE	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340838006	M-CA-FB-1	EPA 200.7	JDE	11	PASI-K
		EPA 200.8	JGP	2	PASI-K

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

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	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340838007	M-CA-MS-1	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60340838008	M-CA-MSD-1	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Sample: M-MW-11S **Lab ID: 60340838001** Collected: 06/22/20 16:30 Received: 06/24/20 04:45 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	628	ug/L	5.0	1.8	1	07/10/20 07:29	07/15/20 17:12	7440-39-3	
Boron	218	ug/L	100	11.7	1	07/10/20 07:29	07/15/20 17:12	7440-42-8	
Calcium	287000	ug/L	200	32.4	1	07/10/20 07:29	07/15/20 17:12	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/10/20 07:29	07/15/20 17:12	7440-48-4	
Iron	39000	ug/L	50.0	26.8	1	07/10/20 07:29	07/15/20 17:12	7439-89-6	
Lithium	6.5J	ug/L	10.0	4.6	1	07/10/20 07:29	07/15/20 17:12	7439-93-2	
Magnesium	63400	ug/L	50.0	19.7	1	07/10/20 07:29	07/15/20 17:12	7439-95-4	
Manganese	2800	ug/L	5.0	0.97	1	07/10/20 07:29	07/15/20 17:12	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	07/10/20 07:29	07/15/20 17:12	7439-98-7	
Potassium	6930	ug/L	500	189	1	07/10/20 07:29	07/15/20 17:12	7440-09-7	
Sodium	17500	ug/L	500	107	1	07/10/20 07:29	07/15/20 17:12	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	4.2	ug/L	1.0	0.086	1	07/09/20 13:50	07/10/20 13:52	7440-38-2	
Selenium	0.23J	ug/L	1.0	0.18	1	07/09/20 13:50	07/10/20 13:52	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	971	mg/L	40.0	16.8	1		06/26/20 14:58		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1010	mg/L	13.3	13.3	1		06/29/20 14:24		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	15.3	mg/L	1.0	0.39	1		06/26/20 17:30	16887-00-6	
Fluoride	0.20J	mg/L	0.20	0.075	1		06/26/20 17:30	16984-48-8	
Sulfate	0.38J	mg/L	1.0	0.28	1		06/26/20 17:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Sample: M-MW-11D **Lab ID: 60340838002** Collected: 06/22/20 16:50 Received: 06/24/20 04:45 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	07/10/20 07:29	07/15/20 17:20	7440-39-3	
Boron	8660	ug/L	100	11.7	1	07/10/20 07:29	07/15/20 17:20	7440-42-8	
Calcium	228000	ug/L	200	32.4	1	07/10/20 07:29	07/15/20 17:20	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/10/20 07:29	07/15/20 17:20	7440-48-4	
Iron	21100	ug/L	50.0	26.8	1	07/10/20 07:29	07/15/20 17:20	7439-89-6	
Lithium	40.5	ug/L	10.0	4.6	1	07/10/20 07:29	07/15/20 17:20	7439-93-2	
Magnesium	68400	ug/L	50.0	19.7	1	07/10/20 07:29	07/15/20 17:20	7439-95-4	
Manganese	1120	ug/L	5.0	0.97	1	07/10/20 07:29	07/15/20 17:20	7439-96-5	
Molybdenum	204	ug/L	20.0	1.7	1	07/10/20 07:29	07/15/20 17:20	7439-98-7	
Potassium	7350	ug/L	500	189	1	07/10/20 07:29	07/15/20 17:20	7440-09-7	
Sodium	39400	ug/L	500	107	1	07/10/20 07:29	07/15/20 17:20	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	7.2	ug/L	1.0	0.086	1	07/09/20 13:50	07/10/20 13:57	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	07/09/20 13:50	07/10/20 13:57	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	541	mg/L	20.0	8.4	1		06/26/20 15:11		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1150	mg/L	13.3	13.3	1		06/29/20 14:24		
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		06/26/20 18:34	16887-00-6	
Fluoride	0.27	mg/L	0.20	0.075	1		06/26/20 18:18	16984-48-8	
Sulfate	331	mg/L	50.0	13.9	50		06/26/20 18:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Sample: M-TP-2 **Lab ID: 60340838003** Collected: 06/22/20 14:45 Received: 06/24/20 04:45 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	70.6	ug/L	5.0	1.8	1	07/10/20 07:29	07/15/20 17:22	7440-39-3	
Boron	2880	ug/L	100	11.7	1	07/10/20 07:29	07/15/20 17:22	7440-42-8	
Calcium	234000	ug/L	200	32.4	1	07/10/20 07:29	07/15/20 17:22	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/10/20 07:29	07/15/20 17:22	7440-48-4	
Iron	16500	ug/L	50.0	26.8	1	07/10/20 07:29	07/15/20 17:22	7439-89-6	
Lithium	42.8	ug/L	10.0	4.6	1	07/10/20 07:29	07/15/20 17:22	7439-93-2	
Magnesium	66200	ug/L	50.0	19.7	1	07/10/20 07:29	07/15/20 17:22	7439-95-4	
Manganese	622	ug/L	5.0	0.97	1	07/10/20 07:29	07/15/20 17:22	7439-96-5	
Molybdenum	7.3J	ug/L	20.0	1.7	1	07/10/20 07:29	07/15/20 17:22	7439-98-7	
Potassium	8840	ug/L	500	189	1	07/10/20 07:29	07/15/20 17:22	7440-09-7	
Sodium	213000	ug/L	500	107	1	07/10/20 07:29	07/15/20 17:22	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	4.4	ug/L	1.0	0.086	1	07/09/20 13:50	07/10/20 13:58	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	07/09/20 13:50	07/10/20 13:58	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	380	mg/L	20.0	8.4	1		06/26/20 15:16		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1660	mg/L	20.0	20.0	1		06/29/20 14:25		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	278	mg/L	50.0	19.4	50		06/26/20 20:09	16887-00-6	
Fluoride	0.31	mg/L	0.20	0.075	1		06/26/20 19:05	16984-48-8	
Sulfate	509	mg/L	50.0	13.9	50		06/26/20 20:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Sample: M-MW-10 **Lab ID: 60340838004** Collected: 06/22/20 14:25 Received: 06/24/20 04:45 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	132	ug/L	5.0	1.8	1	07/10/20 07:29	07/15/20 17:24	7440-39-3	
Boron	2050	ug/L	100	11.7	1	07/10/20 07:29	07/15/20 17:24	7440-42-8	
Calcium	222000	ug/L	200	32.4	1	07/10/20 07:29	07/15/20 17:24	7440-70-2	M1
Cobalt	4.6J	ug/L	5.0	1.5	1	07/10/20 07:29	07/15/20 17:24	7440-48-4	
Iron	12400	ug/L	50.0	26.8	1	07/10/20 07:29	07/15/20 17:24	7439-89-6	
Lithium	35.1	ug/L	10.0	4.6	1	07/10/20 07:29	07/15/20 17:24	7439-93-2	
Magnesium	60000	ug/L	50.0	19.7	1	07/10/20 07:29	07/15/20 17:24	7439-95-4	
Manganese	786	ug/L	5.0	0.97	1	07/10/20 07:29	07/15/20 17:24	7439-96-5	
Molybdenum	4.3J	ug/L	20.0	1.7	1	07/10/20 07:29	07/15/20 17:24	7439-98-7	
Potassium	9180	ug/L	500	189	1	07/10/20 07:29	07/15/20 17:24	7440-09-7	
Sodium	68100	ug/L	500	107	1	07/10/20 07:29	07/15/20 17:24	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	11.2	ug/L	1.0	0.086	1	07/09/20 13:50	07/10/20 14:00	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	07/09/20 13:50	07/10/20 14:00	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	534	mg/L	20.0	8.4	1		06/26/20 15:23		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1080	mg/L	13.3	13.3	1		06/29/20 14:25		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	88.2	mg/L	20.0	7.8	20		06/26/20 20:56	16887-00-6	
Fluoride	0.27	mg/L	0.20	0.075	1		06/26/20 20:41	16984-48-8	
Sulfate	246	mg/L	20.0	5.6	20		06/26/20 20:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Sample: M-CA-DUP-1 **Lab ID: 60340838005** Collected: 06/22/20 08:00 Received: 06/24/20 04:45 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	07/10/20 07:29	07/15/20 17:27	7440-39-3	
Boron	1960	ug/L	100	11.7	1	07/10/20 07:29	07/15/20 17:27	7440-42-8	
Calcium	213000	ug/L	200	32.4	1	07/10/20 07:29	07/15/20 17:27	7440-70-2	
Cobalt	4.0J	ug/L	5.0	1.5	1	07/10/20 07:29	07/15/20 17:27	7440-48-4	
Iron	11900	ug/L	50.0	26.8	1	07/10/20 07:29	07/15/20 17:27	7439-89-6	
Lithium	32.8	ug/L	10.0	4.6	1	07/10/20 07:29	07/15/20 17:27	7439-93-2	
Magnesium	57300	ug/L	50.0	19.7	1	07/10/20 07:29	07/15/20 17:27	7439-95-4	
Manganese	752	ug/L	5.0	0.97	1	07/10/20 07:29	07/15/20 17:27	7439-96-5	
Molybdenum	4.4J	ug/L	20.0	1.7	1	07/10/20 07:29	07/15/20 17:27	7439-98-7	
Potassium	8750	ug/L	500	189	1	07/10/20 07:29	07/15/20 17:27	7440-09-7	
Sodium	65300	ug/L	500	107	1	07/10/20 07:29	07/15/20 17:27	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	11.3	ug/L	1.0	0.086	1	07/09/20 13:50	07/10/20 14:02	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	07/09/20 13:50	07/10/20 14:02	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	569	mg/L	20.0	8.4	1		06/26/20 15:30		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1090	mg/L	13.3	13.3	1		06/29/20 14:25		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	90.6	mg/L	10.0	3.9	10		06/29/20 19:20	16887-00-6	
Fluoride	0.26	mg/L	0.20	0.075	1		06/26/20 21:12	16984-48-8	
Sulfate	239	mg/L	50.0	13.9	50		06/29/20 19:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Sample: M-CA-FB-1 **Lab ID: 60340838006** Collected: 06/22/20 17:05 Received: 06/24/20 04:45 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	07/10/20 07:29	07/15/20 17:30	7440-39-3	
Boron	<11.7	ug/L	100	11.7	1	07/10/20 07:29	07/15/20 17:30	7440-42-8	
Calcium	<32.4	ug/L	200	32.4	1	07/10/20 07:29	07/15/20 17:30	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/10/20 07:29	07/15/20 17:30	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	07/10/20 07:29	07/15/20 17:30	7439-89-6	
Lithium	<4.6	ug/L	10.0	4.6	1	07/10/20 07:29	07/15/20 17:30	7439-93-2	
Magnesium	<19.7	ug/L	50.0	19.7	1	07/10/20 07:29	07/15/20 17:30	7439-95-4	
Manganese	<0.97	ug/L	5.0	0.97	1	07/10/20 07:29	07/15/20 17:30	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	07/10/20 07:29	07/15/20 17:30	7439-98-7	
Potassium	<189	ug/L	500	189	1	07/10/20 07:29	07/15/20 17:30	7440-09-7	
Sodium	132J	ug/L	500	107	1	07/10/20 07:29	07/15/20 17:30	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<0.086	ug/L	1.0	0.086	1	07/09/20 13:50	07/10/20 14:08	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	07/09/20 13:50	07/10/20 14:08	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		06/26/20 15:34		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	8.5	mg/L	5.0	5.0	1		06/29/20 14:25		
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		06/26/20 21:28	16887-00-6	
Fluoride	<0.075	mg/L	0.20	0.075	1		06/26/20 21:28	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		06/26/20 21:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

QC Batch: 664638 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: 60340838001, 60340838002, 60340838003, 60340838004, 60340838005, 60340838006

METHOD BLANK: 2693227 Matrix: Water
 Associated Lab Samples: 60340838001, 60340838002, 60340838003, 60340838004, 60340838005, 60340838006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	07/15/20 17:08	
Boron	ug/L	<11.7	100	11.7	07/15/20 17:08	
Calcium	ug/L	<32.4	200	32.4	07/15/20 17:08	
Cobalt	ug/L	<1.5	5.0	1.5	07/15/20 17:08	
Iron	ug/L	<26.8	50.0	26.8	07/15/20 17:08	
Lithium	ug/L	<4.6	10.0	4.6	07/15/20 17:08	
Magnesium	ug/L	<19.7	50.0	19.7	07/15/20 17:08	
Manganese	ug/L	<0.97	5.0	0.97	07/15/20 17:08	
Molybdenum	ug/L	<1.7	20.0	1.7	07/15/20 17:08	
Potassium	ug/L	<189	500	189	07/15/20 17:08	
Sodium	ug/L	<107	500	107	07/15/20 17:08	

LABORATORY CONTROL SAMPLE: 2693228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	993	99	85-115	
Boron	ug/L	1000	1020	102	85-115	
Calcium	ug/L	10000	10000	100	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lithium	ug/L	1000	996	100	85-115	
Magnesium	ug/L	10000	10300	103	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Molybdenum	ug/L	1000	1060	106	85-115	
Potassium	ug/L	10000	9890	99	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2693229 2693230

Parameter	Units	60340838004		2693229		2693230		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Barium	ug/L	132	1000	1000	1140	1120	101	99	70-130	1	20		
Boron	ug/L	2050	1000	1000	3060	3060	101	101	70-130	0	20		
Calcium	ug/L	222000	10000	10000	230000	228000	70	50	70-130	1	20	M1	
Cobalt	ug/L	4.6J	1000	1000	1040	1030	103	102	70-130	1	20		
Iron	ug/L	12400	10000	10000	22300	22100	99	96	70-130	1	20		
Lithium	ug/L	35.1	1000	1000	1050	1040	102	101	70-130	1	20		

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2693229 2693230												
Parameter	Units	60340838004		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Magnesium	ug/L	60000	10000	10000	69500	69200	95	92	70-130	0	20	
Manganese	ug/L	786	1000	1000	1800	1780	101	100	70-130	1	20	
Molybdenum	ug/L	4.3J	1000	1000	1090	1080	108	107	70-130	1	20	
Potassium	ug/L	9180	10000	10000	19300	19100	101	99	70-130	1	20	
Sodium	ug/L	68100	10000	10000	77900	77200	98	91	70-130	1	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

QC Batch:	664494	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: 60340838001, 60340838002, 60340838003, 60340838004, 60340838005, 60340838006

METHOD BLANK: 2692802 Matrix: Water
Associated Lab Samples: 60340838001, 60340838002, 60340838003, 60340838004, 60340838005, 60340838006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.086	1.0	0.086	07/10/20 13:49	
Selenium	ug/L	<0.18	1.0	0.18	07/10/20 13:49	

LABORATORY CONTROL SAMPLE: 2692803

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	39.5	99	85-115	
Selenium	ug/L	40	38.8	97	85-115	

MATRIX SPIKE SAMPLE: 2692805

Parameter	Units	60341630001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	10.3	40	49.7	98	70-130	
Selenium	ug/L	5.1	40	41.7	91	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2692812 2692813

Parameter	Units	60340838001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	4.2	40	40	46.6	46.0	106	105	70-130	1	20	
Selenium	ug/L	0.23J	40	40	40.7	40.8	101	101	70-130	0	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

QC Batch: 662440	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60340838001, 60340838002, 60340838003, 60340838004, 60340838005, 60340838006

METHOD BLANK: 2685415 Matrix: Water

Associated Lab Samples: 60340838001, 60340838002, 60340838003, 60340838004, 60340838005, 60340838006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	06/26/20 14:39	

LABORATORY CONTROL SAMPLE: 2685416

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	483	97	90-110	

SAMPLE DUPLICATE: 2685417

Parameter	Units	60340838001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	971	988	2	10	

SAMPLE DUPLICATE: 2685418

Parameter	Units	60341023001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	66.4	68.3	3	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

QC Batch: 662618

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60340838001, 60340838002, 60340838003, 60340838004, 60340838005, 60340838006

METHOD BLANK: 2686312

Matrix: Water

Associated Lab Samples: 60340838001, 60340838002, 60340838003, 60340838004, 60340838005, 60340838006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/29/20 14:23	

LABORATORY CONTROL SAMPLE: 2686313

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

SAMPLE DUPLICATE: 2686314

Parameter	Units	60340803001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	985	1030	4	10	

SAMPLE DUPLICATE: 2686315

Parameter	Units	60340838001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1010	973	4	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

QC Batch: 662354 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: 60340838001, 60340838002, 60340838003, 60340838004, 60340838005, 60340838006

METHOD BLANK: 2685064 Matrix: Water
 Associated Lab Samples: 60340838001, 60340838002, 60340838003, 60340838004, 60340838005, 60340838006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	06/26/20 09:26	
Fluoride	mg/L	<0.075	0.20	0.075	06/26/20 09:26	
Sulfate	mg/L	<0.28	1.0	0.28	06/26/20 09:26	

METHOD BLANK: 2687013 Matrix: Water
 Associated Lab Samples: 60340838001, 60340838002, 60340838003, 60340838004, 60340838005, 60340838006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	06/29/20 09:31	
Fluoride	mg/L	<0.075	0.20	0.075	06/29/20 09:31	
Sulfate	mg/L	<0.28	1.0	0.28	06/29/20 09:31	

LABORATORY CONTROL SAMPLE: 2685065

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

LABORATORY CONTROL SAMPLE: 2687014

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	2.4	95	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2685066 2685067

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60340838001 Result	Spike Conc.	Spike Conc.	Spike Conc.								
Chloride	mg/L	15.3	5	5	5	20.3	20.5	101	104	80-120	1	15 E	
Fluoride	mg/L	0.20J	2.5	2.5	2.5	2.5	2.6	92	95	80-120	3	15	
Sulfate	mg/L	0.38J	5	5	5	5.0	5.2	93	96	80-120	2	15	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

MATRIX SPIKE SAMPLE:		2685068					
Parameter	Units	60340838003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	278	250	515	95	80-120	
Fluoride	mg/L	0.31	2.5	2.6	92	80-120	
Sulfate	mg/L	509	250	742	93	80-120	

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

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: M-MW-11S Lab ID: 60340838001 Collected: 06/22/20 16:30 Received: 06/24/20 04:45 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.392 ± 0.387 (0.589) C:NA T:85%	pCi/L	07/15/20 14:55	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.93 ± 0.632 (0.892) C:69% T:89%	pCi/L	07/15/20 10:58	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: M-MW-11D Lab ID: 60340838002 Collected: 06/22/20 16:50 Received: 06/24/20 04:45 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.415 ± 0.453 (0.712) C:NA T:90%	pCi/L	07/15/20 14:55	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.25 ± 0.544 (0.939) C:93% T:79%	pCi/L	07/15/20 14:07	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Sample: M-TP-2 **Lab ID: 60340838003** Collected: 06/22/20 14:45 Received: 06/24/20 04:45 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	0.212 ± 0.389 (0.694) C:NA T:94%	pCi/L	07/15/20 14:55	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.25 ± 0.563 (0.972) C:71% T:90%	pCi/L	07/15/20 14:09	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Sample: M-MW-10 **Lab ID: 60340838004** Collected: 06/22/20 14:25 Received: 06/24/20 04:45 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	0.684 ± 0.590 (0.877) C:NA T:87%	pCi/L	07/15/20 14:55	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.685 ± 0.434 (0.827) C:74% T:93%	pCi/L	07/15/20 14:09	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Sample: M-CA-DUP-1 **Lab ID: 60340838005** Collected: 06/22/20 08:00 Received: 06/24/20 04:45 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	0.585 ± 0.501 (0.679) C:NA T:75%	pCi/L	07/15/20 15:16	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.858 ± 0.559 (1.08) C:66% T:88%	pCi/L	07/15/20 14:09	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Sample: M-CA-FB-1 **Lab ID: 60340838006** Collected: 06/22/20 17:05 Received: 06/24/20 04:45 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	0.172 ± 0.298 (0.533) C:NA T:85%	pCi/L	07/15/20 15:16	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.0453 ± 0.414 (0.964) C:72% T:85%	pCi/L	07/15/20 14:09	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Sample: M-CA-MS-1 **Lab ID: 60340838007** Collected: 06/22/20 16:30 Received: 06/24/20 04:45 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	83.53 %REC ± NA (NA) C:NA T:NA%	pCi/L	07/15/20 15:16	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	105.64 %REC ± NA (NA) C:NA T:NA	pCi/L	07/15/20 10:58	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	104.29 %REC 22.11 RPD ± NA (NA) C:NA T:NA%	pCi/L	07/15/20 15:16	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	113.83 %REC 7.46 RPD ± NA (NA) C:NA T:NA	pCi/L	07/15/20 10:58	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

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

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

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60340838001	M-MW-11S	EPA 200.7	664638	EPA 200.7	664687
60340838002	M-MW-11D	EPA 200.7	664638	EPA 200.7	664687
60340838003	M-TP-2	EPA 200.7	664638	EPA 200.7	664687
60340838004	M-MW-10	EPA 200.7	664638	EPA 200.7	664687
60340838005	M-CA-DUP-1	EPA 200.7	664638	EPA 200.7	664687
60340838006	M-CA-FB-1	EPA 200.7	664638	EPA 200.7	664687
60340838001	M-MW-11S	EPA 200.8	664494	EPA 200.8	664549
60340838002	M-MW-11D	EPA 200.8	664494	EPA 200.8	664549
60340838003	M-TP-2	EPA 200.8	664494	EPA 200.8	664549
60340838004	M-MW-10	EPA 200.8	664494	EPA 200.8	664549
60340838005	M-CA-DUP-1	EPA 200.8	664494	EPA 200.8	664549
60340838006	M-CA-FB-1	EPA 200.8	664494	EPA 200.8	664549
60340838001	M-MW-11S	EPA 903.1	403455		
60340838002	M-MW-11D	EPA 903.1	403455		
60340838003	M-TP-2	EPA 903.1	403455		
60340838004	M-MW-10	EPA 903.1	403455		
60340838005	M-CA-DUP-1	EPA 903.1	403455		
60340838006	M-CA-FB-1	EPA 903.1	403455		
60340838007	M-CA-MS-1	EPA 903.1	403455		
60340838008	M-CA-MSD-1	EPA 903.1	403455		
60340838001	M-MW-11S	EPA 904.0	403553		
60340838002	M-MW-11D	EPA 904.0	403553		
60340838003	M-TP-2	EPA 904.0	403553		
60340838004	M-MW-10	EPA 904.0	403553		
60340838005	M-CA-DUP-1	EPA 904.0	403553		
60340838006	M-CA-FB-1	EPA 904.0	403553		
60340838007	M-CA-MS-1	EPA 904.0	403553		
60340838008	M-CA-MSD-1	EPA 904.0	403553		
60340838001	M-MW-11S	SM 2320B	662440		
60340838002	M-MW-11D	SM 2320B	662440		
60340838003	M-TP-2	SM 2320B	662440		
60340838004	M-MW-10	SM 2320B	662440		
60340838005	M-CA-DUP-1	SM 2320B	662440		
60340838006	M-CA-FB-1	SM 2320B	662440		
60340838001	M-MW-11S	SM 2540C	662618		
60340838002	M-MW-11D	SM 2540C	662618		
60340838003	M-TP-2	SM 2540C	662618		
60340838004	M-MW-10	SM 2540C	662618		
60340838005	M-CA-DUP-1	SM 2540C	662618		
60340838006	M-CA-FB-1	SM 2540C	662618		
60340838001	M-MW-11S	EPA 300.0	662354		
60340838002	M-MW-11D	EPA 300.0	662354		
60340838003	M-TP-2	EPA 300.0	662354		
60340838004	M-MW-10	EPA 300.0	662354		
60340838005	M-CA-DUP-1	EPA 300.0	662354		
60340838006	M-CA-FB-1	EPA 300.0	662354		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MERAMEC CTR MEC-CA

Pace Project No.: 60340838

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
---------------	------------------	------------------------	-----------------	--------------------------	-------------------------

REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60340838



Client Name: Glorder 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 ZPCC

Thermometer Used: 5298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 17.0, 0.0 Corr. Factor -0.5 Corrected 16.5, 0.1

Date and initials of person examining contents: 06/24/20 MLK

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	The label on one of two BP3N for M-CA-FB-1 is not legible due to the marker being rubbed off. Used process of elimination to determine which sample it is.
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>0032910</u>	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added. Added 2.5 ml HNO ₃ (Lot# 200601) to the BP3N for M-MW-115 on 06/24/20 @ 0950. Initial pH was 5.0, final is 0.0.
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: Jamie Clark Date: 6/25/20



GOLDER

MEMORANDUM

DATE July 22, 2020

Project No. 153140602

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

**DATA VALIDATION SUMMARY, MERAMEC ENERGY CENTER – MEC-CA – CORRECTIVE ACTION
SAMPLING - DATA PACKAGE 60340838**

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

- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J).
- 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 Inc.
 Project Name: Ameren - MEC-CA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140602
 Validation Date: 07/22/2020

Laboratory: Pace Analytical

SDG #: 60340838

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 M-MW-11S, M-MW-11D, M-TP-2, M-MW-10, M-CA-DUP-1, M-CA-FB-1, M-CA-MS-1, M-CA-MSD-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>06/22/2020</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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 type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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"/>	M-CA-DUP-1 @ M-MW-10
b) Were field dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD: 13.95% (<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"/>	

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments/Notes:

General: The metals bottle for M-MW-11S arrived with pH of 5.0, 2.5 mL of HNO₃ added.

Dilutions: Chloride and Sulfate diluted in multiple samples, no qualification necessary.

FB: M-CA-FB-1 @ M-MW-11D: Sodium (132J), TDS (8.5), results >10x blank results, no qualification necessary.

MS/MSD: 2693229, 2693230: MSD % Rec low for Calcium, associated with sample 60340838004.

August 20, 2020

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

RE: Project: AMEREN MERAMEC ENERGY CENTER
Pace Project No.: 60343589

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on July 24, 2020. 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

REV-1, 8/20/20: Per client request, Boron reported.

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

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

CERTIFICATIONS

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

Pace Analytical Services Pennsylvania

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

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Florida: Cert E871149 SEKS WET

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 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

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

SAMPLE SUMMARY

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60343589001	M-MW-9	Water	07/23/20 09:30	07/24/20 04:23
60343589002	M-TP-1	Water	07/23/20 10:30	07/24/20 04:23

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 MERAMEC ENERGY CENTER

Pace Project No.: 60343589

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60343589001	M-MW-9	EPA 200.7	JDE	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	HKC	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	MJK	3	PASI-K		
		60343589002	M-TP-1	EPA 200.7	JDE	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	HKC			1	PASI-K		
EPA 903.1	MK1			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	MGS			1	PASI-K		
SM 2540C	CNB			1	PASI-K		
SM 3500-Fe B#4	LDB			1	PASI-K		
SM 3500-Fe B#4	LDB			1	PASI-K		
SM 4500-S-2 D	CNB			1	PASI-K		
EPA 300.0	MJK	3	PASI-K				

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CENTER

Project No.: 60343589

Sample: M-MW-9 Lab ID: 60343589001 Collected: 07/23/20 09:30 Received: 07/24/20 04:23 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	181	ug/L	5.0	1.8	1	07/28/20 11:06	07/30/20 14:28	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	07/28/20 11:06	07/30/20 14:28	7440-41-7	
Boron	2820	ug/L	100	11.7	1	07/28/20 11:06	07/29/20 17:02	7440-42-8	
Calcium	97800	ug/L	200	32.4	1	07/28/20 11:06	07/29/20 17:02	7440-70-2	M1
Cobalt	<1.5	ug/L	5.0	1.5	1	07/28/20 11:06	07/29/20 17:02	7440-48-4	
Iron	9730	ug/L	50.0	26.8	1	07/28/20 11:06	07/29/20 17:02	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	07/28/20 11:06	07/29/20 17:02	7439-92-1	
Lithium	10.5	ug/L	10.0	4.6	1	07/28/20 11:06	07/29/20 17:02	7439-93-2	
Magnesium	35100	ug/L	50.0	19.7	1	07/28/20 11:06	07/29/20 17:02	7439-95-4	
Manganese	264	ug/L	5.0	0.97	1	07/28/20 11:06	07/30/20 14:28	7439-96-5	
Molybdenum	35.9	ug/L	20.0	1.7	1	07/28/20 11:06	07/29/20 17:02	7439-98-7	
Potassium	4140	ug/L	500	189	1	07/28/20 11:06	07/29/20 17:02	7440-09-7	
Sodium	36700	ug/L	500	107	1	07/28/20 11:06	07/29/20 17:02	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	07/29/20 10:40	08/04/20 10:27	7440-36-0	
Arsenic	16.8	ug/L	1.0	0.086	1	07/29/20 10:40	08/04/20 10:27	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	07/29/20 10:40	08/04/20 10:27	7440-43-9	
Chromium	0.31J	ug/L	1.0	0.22	1	07/29/20 10:40	08/04/20 10:27	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	07/29/20 10:40	08/04/20 10:27	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	07/29/20 10:40	08/04/20 10:27	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	07/27/20 14:16	07/28/20 09:13	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	356	mg/L	20.0	8.4	1		07/28/20 16:21		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	528	mg/L	10.0	10.0	1		07/29/20 14:23		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	9.7	mg/L	0.050		1		08/13/20 15:06	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.046J	mg/L	0.20	0.035	1		08/13/20 11:54		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

Sample: M-MW-9 **Lab ID: 60343589001** Collected: 07/23/20 09:30 Received: 07/24/20 04:23 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	<0.039	mg/L	0.050	0.039	1		07/28/20 12:14	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	31.1	mg/L	5.0	1.9	5		07/31/20 09:43	16887-00-6	
Fluoride	0.34	mg/L	0.20	0.075	1		07/30/20 18:50	16984-48-8	
Sulfate	94.1	mg/L	5.0	1.4	5		07/31/20 09:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CENTER

Project No.: 60343589

Sample: M-TP-1 Lab ID: 60343589002 Collected: 07/23/20 10:30 Received: 07/24/20 04:23 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	376	ug/L	5.0	1.8	1	07/28/20 11:06	07/30/20 14:30	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	07/28/20 11:06	07/30/20 14:30	7440-41-7	
Boron	586	ug/L	100	11.7	1	07/28/20 11:06	07/29/20 17:04	7440-42-8	
Calcium	71700	ug/L	200	32.4	1	07/28/20 11:06	07/29/20 17:04	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/28/20 11:06	07/29/20 17:04	7440-48-4	
Iron	6240	ug/L	50.0	26.8	1	07/28/20 11:06	07/29/20 17:04	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	07/28/20 11:06	07/29/20 17:04	7439-92-1	
Lithium	20.0	ug/L	10.0	4.6	1	07/28/20 11:06	07/29/20 17:04	7439-93-2	
Magnesium	31700	ug/L	50.0	19.7	1	07/28/20 11:06	07/29/20 17:04	7439-95-4	
Manganese	80.2	ug/L	5.0	0.97	1	07/28/20 11:06	07/30/20 14:30	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	07/28/20 11:06	07/29/20 17:04	7439-98-7	
Potassium	3020	ug/L	500	189	1	07/28/20 11:06	07/29/20 17:04	7440-09-7	
Sodium	47200	ug/L	500	107	1	07/28/20 11:06	07/29/20 17:04	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.70J	ug/L	1.0	0.097	1	07/29/20 10:40	08/04/20 10:29	7440-36-0	
Arsenic	11.5	ug/L	1.0	0.086	1	07/29/20 10:40	08/04/20 10:29	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	07/29/20 10:40	08/04/20 10:29	7440-43-9	
Chromium	0.38J	ug/L	1.0	0.22	1	07/29/20 10:40	08/04/20 10:29	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	07/29/20 10:40	08/04/20 10:29	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	07/29/20 10:40	08/04/20 10:29	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	07/27/20 14:16	07/28/20 09:16	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	376	mg/L	20.0	8.4	1		07/28/20 16:26		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	403	mg/L	10.0	10.0	1		07/29/20 14:23		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	6.2	mg/L	0.050		1		08/13/20 15:06	7439-89-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		08/13/20 11:54		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

Sample: M-TP-1 **Lab ID: 60343589002** Collected: 07/23/20 10:30 Received: 07/24/20 04:23 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	<0.039	mg/L	0.050	0.039	1		07/28/20 12:14	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	28.6	mg/L	2.0	0.78	2		07/30/20 20:04	16887-00-6	
Fluoride	0.43	mg/L	0.20	0.075	1		07/30/20 19:49	16984-48-8	
Sulfate	0.50J	mg/L	1.0	0.28	1		07/30/20 19:49	14808-79-8	B

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

QC Batch: 667803

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60343589001, 60343589002

METHOD BLANK: 2704434

Matrix: Water

Associated Lab Samples: 60343589001, 60343589002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.085	0.20	0.085	07/28/20 09:00	

LABORATORY CONTROL SAMPLE: 2704435

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2704436 2704437

Parameter	Units	2704436		2704437		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60343718001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Mercury	ug/L	ND	5	5	4.9	5.0	98	99	75-125	0	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

QC Batch: 667947	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: 60343589001, 60343589002

METHOD BLANK: 2704836 Matrix: Water

Associated Lab Samples: 60343589001, 60343589002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	07/30/20 14:09	
Beryllium	ug/L	<0.49	1.0	0.49	07/29/20 16:45	
Boron	ug/L	<11.7	100	11.7	07/29/20 16:45	
Calcium	ug/L	<32.4	200	32.4	07/29/20 16:45	
Cobalt	ug/L	<1.5	5.0	1.5	07/29/20 16:45	
Iron	ug/L	<26.8	50.0	26.8	07/29/20 16:45	
Lead	ug/L	<4.6	10.0	4.6	07/29/20 16:45	
Lithium	ug/L	<4.6	10.0	4.6	07/29/20 16:45	
Magnesium	ug/L	<19.7	50.0	19.7	07/29/20 16:45	
Manganese	ug/L	<0.97	5.0	0.97	07/29/20 16:45	
Molybdenum	ug/L	<1.7	20.0	1.7	07/29/20 16:45	
Potassium	ug/L	<189	500	189	07/29/20 16:45	
Sodium	ug/L	<107	500	107	07/29/20 16:45	

LABORATORY CONTROL SAMPLE: 2704837

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Beryllium	ug/L	1000	916	92	85-115	
Boron	ug/L	1000	983	98	85-115	
Calcium	ug/L	10000	9520	95	85-115	
Cobalt	ug/L	1000	988	99	85-115	
Iron	ug/L	10000	9470	95	85-115	
Lead	ug/L	1000	994	99	85-115	
Lithium	ug/L	1000	917	92	85-115	
Magnesium	ug/L	10000	9970	100	85-115	
Manganese	ug/L	1000	919	92	85-115	
Molybdenum	ug/L	1000	1000	100	85-115	
Potassium	ug/L	10000	9270	93	85-115	
Sodium	ug/L	10000	9520	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2704838 2704839

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60343589001	Result	Spike Conc.	Spike Conc.						
Barium	ug/L	181	1000	1000	1220	1190	104	101	70-130	3	20
Beryllium	ug/L	<0.49	1000	1000	1040	1010	104	101	70-130	2	20

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2704838		2704839		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60343589001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Boron	ug/L	2820	1000	1000	3920	3860	110	104	70-130	2	20		
Calcium	ug/L	97800	10000	10000	112000	109000	138	112	70-130	2	20	M1	
Cobalt	ug/L	<1.5	1000	1000	977	964	98	96	70-130	1	20		
Iron	ug/L	9730	10000	10000	19800	19400	101	96	70-130	2	20		
Lead	ug/L	<4.6	1000	1000	981	970	98	97	70-130	1	20		
Lithium	ug/L	10.5	1000	1000	979	967	97	96	70-130	1	20		
Magnesium	ug/L	35100	10000	10000	46400	45600	113	105	70-130	2	20		
Manganese	ug/L	264	1000	1000	1270	1250	101	98	70-130	2	20		
Molybdenum	ug/L	35.9	1000	1000	1070	1060	104	102	70-130	2	20		
Potassium	ug/L	4140	10000	10000	14100	13800	100	97	70-130	2	20		
Sodium	ug/L	36700	10000	10000	48100	47000	114	104	70-130	2	20		

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

QC Batch: 668265

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: 60343589001, 60343589002

METHOD BLANK: 2705641

Matrix: Water

Associated Lab Samples: 60343589001, 60343589002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.097	1.0	0.097	08/04/20 10:24	
Arsenic	ug/L	<0.086	1.0	0.086	08/04/20 10:24	
Cadmium	ug/L	<0.056	0.50	0.056	08/04/20 10:24	
Chromium	ug/L	<0.22	1.0	0.22	08/04/20 10:24	
Selenium	ug/L	<0.18	1.0	0.18	08/04/20 10:24	
Thallium	ug/L	<0.093	1.0	0.093	08/04/20 10:24	

LABORATORY CONTROL SAMPLE: 2705642

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.0	100	85-115	
Arsenic	ug/L	40	40.0	100	85-115	
Cadmium	ug/L	40	39.2	98	85-115	
Chromium	ug/L	40	41.5	104	85-115	
Selenium	ug/L	40	39.2	98	85-115	
Thallium	ug/L	40	38.3	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2705643 2705644

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Antimony	ug/L	0.70J	40	40	41.3	42.3	102	104	70-130	2	20
Arsenic	ug/L	11.5	40	40	53.0	53.0	104	104	70-130	0	20
Cadmium	ug/L	<0.056	40	40	39.7	40.1	99	100	70-130	1	20
Chromium	ug/L	0.38J	40	40	41.0	41.3	102	102	70-130	1	20
Selenium	ug/L	<0.18	40	40	40.4	40.7	101	102	70-130	1	20
Thallium	ug/L	<0.093	40	40	40.0	40.4	100	101	70-130	1	20

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

QC Batch: 668103	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60343589001, 60343589002

METHOD BLANK: 2705240 Matrix: Water

Associated Lab Samples: 60343589001, 60343589002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<8.4	20.0	8.4	07/28/20 15:13	

LABORATORY CONTROL SAMPLE: 2705241

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	479	96	90-110	

SAMPLE DUPLICATE: 2705242

Parameter	Units	60343458003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	291	290	0	10	

SAMPLE DUPLICATE: 2705243

Parameter	Units	60343609002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	386	395	2	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

QC Batch: 668099	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60343589001, 60343589002

METHOD BLANK: 2705221 Matrix: Water

Associated Lab Samples: 60343589001, 60343589002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	07/29/20 14:22	

LABORATORY CONTROL SAMPLE: 2705222

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

SAMPLE DUPLICATE: 2705223

Parameter	Units	60343569007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	58.5	60.0	3	10	

SAMPLE DUPLICATE: 2705224

Parameter	Units	60343731001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5080	5450	7	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

QC Batch: 670679

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: 60343589001, 60343589002

METHOD BLANK: 2713880

Matrix: Water

Associated Lab Samples: 60343589001, 60343589002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	08/13/20 11:53	H6

LABORATORY CONTROL SAMPLE: 2713881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.0	98	90-110	H6

SAMPLE DUPLICATE: 2713882

Parameter	Units	60343589001 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.046J	0.080J		20	H6

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

QC Batch: 667967	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: 60343589001, 60343589002

METHOD BLANK: 2704894 Matrix: Water

Associated Lab Samples: 60343589001, 60343589002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.039	0.050	0.039	07/28/20 12:04	

LABORATORY CONTROL SAMPLE: 2704895

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.50	100	80-120	

MATRIX SPIKE SAMPLE: 2704896

Parameter	Units	60343161004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	4.27	5	10.5	96	75-125	E,H1

SAMPLE DUPLICATE: 2704897

Parameter	Units	60343775002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.15	0.15	0	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

QC Batch: 668611	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: 60343589001, 60343589002

METHOD BLANK: 2706516 Matrix: Water

Associated Lab Samples: 60343589001, 60343589002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	07/30/20 09:18	
Fluoride	mg/L	<0.075	0.20	0.075	07/30/20 09:18	
Sulfate	mg/L	<0.28	1.0	0.28	07/30/20 09:18	

METHOD BLANK: 2707282 Matrix: Water

Associated Lab Samples: 60343589001, 60343589002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	07/31/20 09:12	
Fluoride	mg/L	<0.075	0.20	0.075	07/31/20 09:12	
Sulfate	mg/L	0.83J	1.0	0.28	07/31/20 09:12	

METHOD BLANK: 2707936 Matrix: Water

Associated Lab Samples: 60343589001, 60343589002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	08/03/20 09:56	
Fluoride	mg/L	<0.075	0.20	0.075	08/03/20 09:56	
Sulfate	mg/L	<0.28	1.0	0.28	08/03/20 09:56	

LABORATORY CONTROL SAMPLE: 2706517

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	100	90-110	
Sulfate	mg/L	5	4.9	99	90-110	

LABORATORY CONTROL SAMPLE: 2707283

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	2.7	109	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

LABORATORY CONTROL SAMPLE: 2707937

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	2.6	104	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2706518 2706519

Parameter	Units	60343161032		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec					
Chloride	mg/L	ND	5	5	4.9	4.9	89	89	80-120	1	15		
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	100	101	80-120	1	15		
Sulfate	mg/L	ND	5	5	5.0	5.1	100	101	80-120	1	15		

MATRIX SPIKE SAMPLE: 2706520

Parameter	Units	60343609002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	418	250	656	95	80-120	
Fluoride	mg/L	ND	125	120	96	80-120	
Sulfate	mg/L	1670	500	2230	112	80-120 E	

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

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

Sample: M-MW-9 **Lab ID: 60343589001** Collected: 07/23/20 09:30 Received: 07/24/20 04:23 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	0.0662 ± 0.430 (0.867) C:NA T:96%	pCi/L	08/13/20 15:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.128 ± 0.365 (0.821) C:69% T:79%	pCi/L	08/12/20 12:10	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

Sample: M-TP-1 **Lab ID: 60343589002** Collected: 07/23/20 10:30 Received: 07/24/20 04:23 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	0.591 ± 0.565 (0.861) C:NA T:91%	pCi/L	08/13/20 15:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.49 ± 0.620 (1.02) C:61% T:87%	pCi/L	08/12/20 12:00	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

QC Batch: 407463	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: 60343589001, 60343589002

METHOD BLANK: 1971644 Matrix: Water

Associated Lab Samples: 60343589001, 60343589002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0457 ± 0.323 (0.645) C:NA T:86%	pCi/L	08/13/20 15:35	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

QC Batch: 407464	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: 60343589001, 60343589002

METHOD BLANK: 1971645 Matrix: Water

Associated Lab Samples: 60343589001, 60343589002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.698 ± 0.414 (0.754) C:63% T:89%	pCi/L	08/12/20 12:10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

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.

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.

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MERAMEC ENERGY CENTER

Pace Project No.: 60343589

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60343589001	M-MW-9	EPA 200.7	667947	EPA 200.7	668038
60343589002	M-TP-1	EPA 200.7	667947	EPA 200.7	668038
60343589001	M-MW-9	EPA 200.8	668265	EPA 200.8	668337
60343589002	M-TP-1	EPA 200.8	668265	EPA 200.8	668337
60343589001	M-MW-9	EPA 7470	667803	EPA 7470	667891
60343589002	M-TP-1	EPA 7470	667803	EPA 7470	667891
60343589001	M-MW-9	EPA 903.1	407463		
60343589002	M-TP-1	EPA 903.1	407463		
60343589001	M-MW-9	EPA 904.0	407464		
60343589002	M-TP-1	EPA 904.0	407464		
60343589001	M-MW-9	SM 2320B	668103		
60343589002	M-TP-1	SM 2320B	668103		
60343589001	M-MW-9	SM 2540C	668099		
60343589002	M-TP-1	SM 2540C	668099		
60343589001	M-MW-9	SM 3500-Fe B#4	671075		
60343589002	M-TP-1	SM 3500-Fe B#4	671075		
60343589001	M-MW-9	SM 3500-Fe B#4	670679		
60343589002	M-TP-1	SM 3500-Fe B#4	670679		
60343589001	M-MW-9	SM 4500-S-2 D	667967		
60343589002	M-TP-1	SM 4500-S-2 D	667967		
60343589001	M-MW-9	EPA 300.0	668611		
60343589002	M-TP-1	EPA 300.0	668611		

REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60343589



Client Name: Cooler 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 XZpic

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 2.0 Corr. Factor +0.1 Corrected 2.1

Date and initials of person examining contents: 7-24-2020

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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<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	<u>one BPIN reads MW-9</u>
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<u>Date time match M-7P-1</u>
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	

LOT# 603173, 603296

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Jami Clark Date: 7/27/20

Project Manager Review: _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Golder Associates	Report To: Mark Haddock (mhaddock@golder.com)	Attention:	Company Name:	REGULATORY AGENCY:	
Address: 820 South Main Street, Suite 100	Copy To: Jeffrey Ingram	Address:	Address:	NPDES	GROUND WATER
Phone: 636-724-9191	Purchase Order No.:	Face Quote Reference:	Face Project Manager:	UST	DRINKING WATER
Requested Due Date/TAT: Standard	Project Name: Ameren MEC	Face Profile #:	Site Location:	RCRA	OTHER
	Project Number: 15310602.0004A		STATE:	MO	

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL AR VT TS	Requested Analysis Filtered (Y/N)	COLLECTED		SAMPLE TEMP AT COLLECTION	PRESERVATIVES		ACCEPTED BY / AFFILIATION	DATE	TIME	DATE	TIME	SAMPLE CONDITIONS
			COMPOSITE START	COMPOSITE END/GRAB		DATE	TIME						
1	M-MW-9												
2	M-TP-1												
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
ADDITIONAL COMMENTS: 200.7: B, Ba, Ca, Co, Fe, Li, Mg, Mn, Mo, K, Na **200.8: As, Se, Tl, Li, Pb, Cd, Be, Sb RELINQUISHED BY / AFFILIATION: CANN/GOLDER DATE: 7/13/20 TIME: 0930 COMPOSITE END/GRAB: 1030 DATE: 7/13/20 TIME: 1030 SAMPLE TEMP AT COLLECTION: # OF CONTAINERS: 62 UNPRESERVED: 3 HNO3: 1 H2SO4: 1 HCl: 1 NaOH: 1 Na2S2O3: 1 Methanol: 1 Other: 1 Requested Analysis Filtered (Y/N): 200.7 Metals*: X 200.8 Metals*: X Chloride/Fluoride/Sulfate: X TDS: X Alkalinity: X Radium 226: X Radium 228: X Sulfide: X Emc/Kenosis: X Mercury: X Residual Chlorine (Y/N): Pace Project No./ Lab I.D.: 60315580A													

Temp in °C	Received on	Custody	Sealed Cooler	Samples Intact
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: Eric Schuster SIGNATURE of SAMPLER: <i>[Signature]</i> DATE Signed (MM/DD/YY): 07/13/20				



GOLDER

MEMORANDUM

DATE August 20, 2020

Project No. 153140602

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

**DATA VALIDATION SUMMARY, MERAMEC ENERGY CENTER – MEC-CA – CORRECTIVE ACTION
SAMPLING - DATA PACKAGE 60343589REV1**

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 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 matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J).
- When a compound was analyzed outside of hold time, sample results were qualified as estimates (J for detects, UJ for non-detects).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates Inc.
 Project Name: Ameren - MEC
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140602
 Validation Date: 8/20/2020

Laboratory: Pace Analytical

SDG #: 60343589rev1

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); EPA 7470 (Mercury); SM2320B (Alkalinity); SM2540C (TDS); SM3500-Fe B#4 (Ferric, Ferrous Iron); SM4500-S-2 D (Total Sulfide); EPA 300.0 (Anions); EPA 903.1/904.0 (Radium 226/228)

Matrix: Air Soil/Sed. Water Waste _____

Sample Names M-MW-9, M-TP-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>07/23/2020</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
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 type="checkbox"/>	<input checked="" 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"/>	<u>See Notes</u>
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"/>	_____

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 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 type="checkbox"/>	<input checked="" 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 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 7% (<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 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 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:

One bottle was labeled MW-9 but the date and time matched M-7P-1.

Ferrous Iron analyzed outside of hold time in all samples.

Chloride was diluted in both samples, Sulfate was dilute din MW-9, no qualification necessary.

MB: 2707282: Sulfate (0.83J), associated with samples -89001 and -89002

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

MS/MSD: 2704838, 2704839: MS % rec high for Calcium, associated with sample -89001.

September 24, 2020

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

RE: Project: AMEREN MEC
Pace Project No.: 60346689

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on August 27, 2020. 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



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 MEC

Pace Project No.: 60346689

Pace Analytical Services Pennsylvania

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

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Florida: Cert E871149 SEKS WET

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 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

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

SAMPLE SUMMARY

Project: AMEREN MEC

Pace Project No.: 60346689

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60346689001	M-MW-9	Water	08/26/20 11:35	08/27/20 04:26
60346689002	M-TP-1	Water	08/26/20 12:00	08/27/20 04:26

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 MEC

Pace Project No.: 60346689

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60346689001	M-MW-9	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MRV	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	LDB	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	MJK	3	PASI-K
		60346689002	M-TP-1	EPA 200.7	JLH
EPA 200.8	JGP			6	PASI-K
EPA 7470	MRV			1	PASI-K
EPA 903.1	MK1			1	PASI-PA
EPA 904.0	VAL			1	PASI-PA
SM 2320B	LDB			1	PASI-K
SM 2540C	MAP			1	PASI-K
EPA 300.0	MJK			3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60346689

Sample: M-MW-9 **Lab ID: 60346689001** Collected: 08/26/20 11:35 Received: 08/27/20 04:26 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	200	ug/L	5.0	1.8	1	09/13/20 14:25	09/14/20 18:42	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	09/13/20 14:25	09/14/20 18:42	7440-41-7	
Boron	3120	ug/L	100	11.7	1	09/13/20 14:25	09/14/20 18:42	7440-42-8	
Calcium	112000	ug/L	200	32.4	1	09/13/20 14:25	09/14/20 18:42	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	09/13/20 14:25	09/14/20 18:42	7440-48-4	
Iron	10800	ug/L	50.0	26.8	1	09/13/20 14:25	09/14/20 18:42	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	09/13/20 14:25	09/14/20 18:42	7439-92-1	
Lithium	14.5	ug/L	10.0	4.6	1	09/13/20 14:25	09/14/20 18:42	7439-93-2	B
Magnesium	39000	ug/L	50.0	19.7	1	09/13/20 14:25	09/14/20 18:42	7439-95-4	
Manganese	272	ug/L	5.0	0.97	1	09/13/20 14:25	09/14/20 18:42	7439-96-5	
Molybdenum	32.4	ug/L	20.0	1.7	1	09/13/20 14:25	09/14/20 18:42	7439-98-7	
Potassium	4660	ug/L	500	189	1	09/13/20 14:25	09/14/20 18:42	7440-09-7	
Sodium	41300	ug/L	500	107	1	09/13/20 14:25	09/14/20 18:42	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	09/14/20 13:55	09/17/20 13:38	7440-36-0	
Arsenic	15.9	ug/L	1.0	0.086	1	09/14/20 13:55	09/17/20 13:38	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	09/14/20 13:55	09/17/20 13:38	7440-43-9	
Chromium	0.27J	ug/L	1.0	0.22	1	09/14/20 13:55	09/17/20 13:38	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	09/14/20 13:55	09/17/20 13:38	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	09/14/20 13:55	09/17/20 13:38	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	09/10/20 13:05	09/11/20 15:36	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	357	mg/L	20.0	8.4	1		09/04/20 16:51		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	622	mg/L	10.0	10.0	1		08/28/20 15:36		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	33.1	mg/L	10.0	3.9	10		09/04/20 19:53	16887-00-6	B
Fluoride	0.38	mg/L	0.20	0.075	1		09/04/20 19:38	16984-48-8	
Sulfate	116	mg/L	10.0	2.8	10		09/04/20 19:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60346689

Sample: M-TP-1 **Lab ID: 60346689002** Collected: 08/26/20 12:00 Received: 08/27/20 04:26 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	327	ug/L	5.0	1.8	1	09/13/20 14:25	09/14/20 18:45	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	09/13/20 14:25	09/14/20 18:45	7440-41-7	
Boron	498	ug/L	100	11.7	1	09/13/20 14:25	09/14/20 18:45	7440-42-8	
Calcium	64600	ug/L	200	32.4	1	09/13/20 14:25	09/14/20 18:45	7440-70-2	M1
Cobalt	<1.5	ug/L	5.0	1.5	1	09/13/20 14:25	09/14/20 18:45	7440-48-4	
Iron	3890	ug/L	50.0	26.8	1	09/13/20 14:25	09/14/20 18:45	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	09/13/20 14:25	09/14/20 18:45	7439-92-1	
Lithium	30.4	ug/L	10.0	4.6	1	09/13/20 14:25	09/14/20 18:45	7439-93-2	B
Magnesium	28400	ug/L	50.0	19.7	1	09/13/20 14:25	09/14/20 18:45	7439-95-4	M1
Manganese	59.4	ug/L	5.0	0.97	1	09/13/20 14:25	09/14/20 18:45	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	09/13/20 14:25	09/14/20 18:45	7439-98-7	
Potassium	2990	ug/L	500	189	1	09/13/20 14:25	09/14/20 18:45	7440-09-7	
Sodium	51900	ug/L	500	107	1	09/13/20 14:25	09/14/20 18:45	7440-23-5	M1
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.14J	ug/L	1.0	0.097	1	09/14/20 13:55	09/17/20 13:40	7440-36-0	
Arsenic	13.7	ug/L	1.0	0.086	1	09/14/20 13:55	09/17/20 13:40	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	09/14/20 13:55	09/17/20 13:40	7440-43-9	
Chromium	0.33J	ug/L	1.0	0.22	1	09/14/20 13:55	09/17/20 13:40	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	09/14/20 13:55	09/17/20 13:40	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	09/14/20 13:55	09/17/20 13:40	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	09/10/20 13:05	09/11/20 15:43	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	375	mg/L	20.0	8.4	1		09/04/20 16:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	434	mg/L	10.0	10.0	1		08/28/20 15:36		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	36.0	mg/L	5.0	1.9	5		09/08/20 17:53	16887-00-6	
Fluoride	0.72	mg/L	0.20	0.075	1		09/04/20 20:07	16984-48-8	
Sulfate	2.1	mg/L	1.0	0.28	1		09/04/20 20:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60346689

QC Batch: 676187

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60346689001, 60346689002

METHOD BLANK: 2734339

Matrix: Water

Associated Lab Samples: 60346689001, 60346689002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.058	0.20	0.058	09/11/20 13:43	

LABORATORY CONTROL SAMPLE: 2734340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2734341 2734342

Parameter	Units	2734341		2734342		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60346689001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	ug/L	<0.058	5	5	4.1	4.0	83	80	75-125	4	20

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60346689

QC Batch: 676576	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: 60346689001, 60346689002

METHOD BLANK: 2735927 Matrix: Water

Associated Lab Samples: 60346689001, 60346689002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	09/14/20 18:32	
Beryllium	ug/L	<0.49	1.0	0.49	09/14/20 18:32	
Boron	ug/L	<11.7	100	11.7	09/14/20 18:32	
Calcium	ug/L	<32.4	200	32.4	09/14/20 18:32	
Cobalt	ug/L	<1.5	5.0	1.5	09/14/20 18:32	
Iron	ug/L	<26.8	50.0	26.8	09/14/20 18:32	
Lead	ug/L	<4.6	10.0	4.6	09/14/20 18:32	
Lithium	ug/L	5.5J	10.0	4.6	09/14/20 18:32	
Magnesium	ug/L	<19.7	50.0	19.7	09/14/20 18:32	
Manganese	ug/L	<0.97	5.0	0.97	09/14/20 18:32	
Molybdenum	ug/L	<1.7	20.0	1.7	09/14/20 18:32	
Potassium	ug/L	<189	500	189	09/14/20 18:32	
Sodium	ug/L	<107	500	107	09/14/20 18:32	

LABORATORY CONTROL SAMPLE: 2735928

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	984	98	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	9960	100	85-115	
Lead	ug/L	1000	1030	103	85-115	
Lithium	ug/L	1000	1080	108	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	1000	100	85-115	
Molybdenum	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	10200	102	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2735929 2735930

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60346689002	Result	Conc.	Conc.						
Barium	ug/L	327	1000	1000	1370	1380	105	105	70-130	0	20
Beryllium	ug/L	<0.49	1000	1000	1050	1050	105	105	70-130	1	20

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60346689

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2735929		2735930		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60346689002 Result	MS Spike Conc.	MSD Spike Conc.									
Boron	ug/L	498	1000	1000	1570	1570	107	107	70-130	0	20		
Calcium	ug/L	64600	10000	10000	81100	80800	165	162	70-130	0	20	M1	
Cobalt	ug/L	<1.5	1000	1000	1030	1040	103	104	70-130	0	20		
Iron	ug/L	3890	10000	10000	14200	14200	103	103	70-130	0	20		
Lead	ug/L	<4.6	1000	1000	1020	1020	102	102	70-130	0	20		
Lithium	ug/L	30.4	1000	1000	1100	1110	107	108	70-130	1	20		
Magnesium	ug/L	28400	10000	10000	41600	41500	132	131	70-130	0	20	M1	
Manganese	ug/L	59.4	1000	1000	1060	1060	100	100	70-130	0	20		
Molybdenum	ug/L	<1.7	1000	1000	1050	1050	105	105	70-130	0	20		
Potassium	ug/L	2990	10000	10000	13600	13700	106	107	70-130	1	20		
Sodium	ug/L	51900	10000	10000	67000	66700	151	148	70-130	0	20	M1	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60346689

QC Batch: 676713	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: 60346689001, 60346689002

METHOD BLANK: 2736306 Matrix: Water

Associated Lab Samples: 60346689001, 60346689002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.097	1.0	0.097	09/17/20 13:31	
Arsenic	ug/L	<0.086	1.0	0.086	09/17/20 13:31	
Cadmium	ug/L	<0.056	0.50	0.056	09/17/20 13:31	
Chromium	ug/L	<0.22	1.0	0.22	09/17/20 13:31	
Selenium	ug/L	<0.18	1.0	0.18	09/17/20 13:31	
Thallium	ug/L	<0.093	1.0	0.093	09/17/20 13:31	

LABORATORY CONTROL SAMPLE: 2736307

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.5	101	85-115	
Arsenic	ug/L	40	41.4	103	85-115	
Cadmium	ug/L	40	41.0	103	85-115	
Chromium	ug/L	40	40.8	102	85-115	
Selenium	ug/L	40	42.9	107	85-115	
Thallium	ug/L	40	39.4	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2736308 2736309

Parameter	Units	60347410001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Antimony	ug/L	ND	40	40	39.7	39.0	98	97	70-130	2	20		
Arsenic	ug/L	2.0	40	40	43.5	44.8	104	107	70-130	3	20		
Cadmium	ug/L	ND	40	40	36.1	36.3	90	91	70-130	1	20		
Chromium	ug/L	ND	40	40	34.0	34.9	85	87	70-130	3	20		
Selenium	ug/L	2.4	40	40	40.8	42.0	96	99	70-130	3	20		
Thallium	ug/L	ND	40	40	37.5	37.4	94	93	70-130	0	20		

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60346689

QC Batch: 675242	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60346689001, 60346689002

METHOD BLANK: 2730939 Matrix: Water

Associated Lab Samples: 60346689001, 60346689002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	09/04/20 15:48	

LABORATORY CONTROL SAMPLE: 2730940

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	462	92	90-110	

SAMPLE DUPLICATE: 2730941

Parameter	Units	60346597001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	184	186	1	10	

SAMPLE DUPLICATE: 2730942

Parameter	Units	60346952003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	260	258	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60346689

QC Batch: 674061

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60346689001, 60346689002

METHOD BLANK: 2726410

Matrix: Water

Associated Lab Samples: 60346689001, 60346689002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	08/28/20 15:33	

LABORATORY CONTROL SAMPLE: 2726411

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

SAMPLE DUPLICATE: 2726412

Parameter	Units	60346389001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1050	1100	4	10	

SAMPLE DUPLICATE: 2726413

Parameter	Units	60346600001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	484	483	0	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60346689

QC Batch: 675330	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: 60346689001, 60346689002

METHOD BLANK: 2731223 Matrix: Water

Associated Lab Samples: 60346689001, 60346689002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	09/04/20 17:14	
Fluoride	mg/L	<0.075	0.20	0.075	09/04/20 17:14	
Sulfate	mg/L	<0.28	1.0	0.28	09/04/20 17:14	

METHOD BLANK: 2733496 Matrix: Water

Associated Lab Samples: 60346689001, 60346689002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.39J	1.0	0.39	09/08/20 09:02	
Fluoride	mg/L	<0.075	0.20	0.075	09/08/20 09:02	
Sulfate	mg/L	<0.28	1.0	0.28	09/08/20 09:02	

LABORATORY CONTROL SAMPLE: 2731224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

LABORATORY CONTROL SAMPLE: 2733497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	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: 2731225 2731226

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60347143001 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	22.4	5	5	27.9	27.9	111	110	80-120	0	15	E	
Fluoride	mg/L	0.64	2.5	2.5	3.2	3.2	104	104	80-120	0	15		
Sulfate	mg/L	6.9	5	5	11.9	12.0	101	101	80-120	0	15		

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60346689

MATRIX SPIKE SAMPLE:		2731227					
Parameter	Units	60346895002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	31.1	50	77.7	93	80-120	
Fluoride	mg/L	0.31	2.5	2.8	100	80-120	
Sulfate	mg/L	33.1	50	82.4	99	80-120	

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

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60346689

Sample: M-MW-9 **Lab ID: 60346689001** Collected: 08/26/20 11:35 Received: 08/27/20 04:26 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	0.513 ± 0.465 (0.685) C:NA T:91%	pCi/L	09/23/20 12:49	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.920 ± 0.495 (0.874) C:61% T:81%	pCi/L	09/23/20 11:47	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60346689

Sample: M-TP-1 **Lab ID: 60346689002** Collected: 08/26/20 12:00 Received: 08/27/20 04:26 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	0.411 ± 0.643 (1.11) C:NA T:86%	pCi/L	09/23/20 12:49	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.756 ± 0.439 (0.798) C:63% T:88%	pCi/L	09/23/20 11:51	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60346689

QC Batch: 412848

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: 60346689001, 60346689002

METHOD BLANK: 1996966

Matrix: Water

Associated Lab Samples: 60346689001, 60346689002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.566 ± 0.434 (0.862) C:78% T:77%	pCi/L	09/23/20 11:34	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60346689

QC Batch: 412847

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: 60346689001, 60346689002

METHOD BLANK: 1996965

Matrix: Water

Associated Lab Samples: 60346689001, 60346689002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0430 ± 0.280 (0.607) C:NA T:88%	pCi/L	09/23/20 12:49	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: AMEREN MEC

Pace Project No.: 60346689

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.

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

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MEC

Pace Project No.: 60346689

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60346689001	M-MW-9	EPA 200.7	676576	EPA 200.7	676581
60346689002	M-TP-1	EPA 200.7	676576	EPA 200.7	676581
60346689001	M-MW-9	EPA 200.8	676713	EPA 200.8	676748
60346689002	M-TP-1	EPA 200.8	676713	EPA 200.8	676748
60346689001	M-MW-9	EPA 7470	676187	EPA 7470	676268
60346689002	M-TP-1	EPA 7470	676187	EPA 7470	676268
60346689001	M-MW-9	EPA 903.1	412847		
60346689002	M-TP-1	EPA 903.1	412847		
60346689001	M-MW-9	EPA 904.0	412848		
60346689002	M-TP-1	EPA 904.0	412848		
60346689001	M-MW-9	SM 2320B	675242		
60346689002	M-TP-1	SM 2320B	675242		
60346689001	M-MW-9	SM 2540C	674061		
60346689002	M-TP-1	SM 2540C	674061		
60346689001	M-MW-9	EPA 300.0	675330		
60346689002	M-TP-1	EPA 300.0	675330		

REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60346689



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 zpic

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

Cooler Temperature (°C): As-read 0.7 Corr. Factor -0.4 Corrected 0.3

Date and initials of person examining contents: 8.27.20 ^{HSS}

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 checked="" type="checkbox"/> No <input 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** Per Eric, COC states MW-9 at 1200 and TP-1 at 1135 collection date and time. Should be be MW-9 at 1135 and TP-1 at 1200.

REVIEWED
By jchurch at 6:34 pm, 8/27/20

Project Manager Review: _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Company: Golder Associates Address: 820 South Main Street, Suite 100 St. Charles, MO 63301 Email To: maddock@golder.com Phone: 636-724-9191 Fax: 636-724-9323 Requested Due Date/TAT: Standard

Section B Required Project Information: Report To: Mark Haddock (mhaddock@golder.com) Copy To: Jeffrey Ingram St. Charles, MO 63301 Purchase Order No.: Project Name: Ameren MEC Project Number: 153140602.0004A

Section C Invoice Information: Attention: Company Name: Address: Pace Quote Reference: Pace Project Manager: Jamie Church Pace Phone #: 9285, line 3

REGULATORY AGENCY: NPDES GROUND WATER RCRA UST DRINKING WATER OTHER

Site Location: MO STATE:

Page: 1 of 1

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WAF AR OT TS	Requested Client Information	SAMPLE TYPE (G=RAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives		Requested Analysis Filtered (Y/N)	Temp in °C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Samples Intact (Y/N)
				COMPOSITE START	COMPOSITE END/GRAB			HNO ₃	HCl					
1	M-MW-9		G	DATE	TIME		41			Y				
2	M-TP-1		G	8/26/10	1200		4			Y				
3			G							N				
4			G							N				
5			G							N				
6			G							N				
7			G							N				
8			G							N				
9			G							N				
10			G							N				
11			G							N				
12			G							N				
		SAMPLE ID (A-Z, 0-9 / -)												
		Sample IDs MUST BE UNIQUE												
		RELINQUISHED BY / AFFILIATION	Golder		DATE	TIME								
		ACCEPTED BY / AFFILIATION	Maddock		DATE	TIME								
		ADDITIONAL COMMENTS	2007: B, Ba, Ca, Co, Fe, Li, Mg, Mn, Mo, K, Na 2008: As, Se, Pb, Cr, Cd, Be, Sb											

RELINQUISHED BY / AFFILIATION: Golder DATE: 8/26/10 TIME: 1200

ACCEPTED BY / AFFILIATION: Maddock DATE: 8/27/10 TIME: 0426

ADDITIONAL COMMENTS: 2007: B, Ba, Ca, Co, Fe, Li, Mg, Mn, Mo, K, Na
2008: As, Se, Pb, Cr, Cd, Be, Sb

SAMPLER NAME AND SIGNATURE: PRINT Name of SAMPLER: E. Schneider DATE Signed (MM/DD/YYYY): 08/16/10
SIGNATURE of SAMPLER: [Signature]



GOLDER

MEMORANDUM

DATE September 28, 2020

Project No. 153140602

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

**DATA VALIDATION SUMMARY, MERAMEC ENERGY CENTER – MEC-CA – CORRECTIVE ACTION
SAMPLING - DATA PACKAGE 60346689**

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 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 Inc.
 Project Name: Ameren - MEC
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140602
 Validation Date: 09/28/2020

Laboratory: Pace Analytical

SDG #: 60346689

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); EPA 7470 (Mercury); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions); EPA 903.1/904.0 (Radium 226/228)

Matrix: Air Soil/Sed. Water Waste _____

Sample Names M-MW-9, M-TP-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>8/26/2020</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
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"/>	_____

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

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 lab noted that the COC states that MW-9 at 1200 and TP-1 at 1135, but as per EMS, should be MW-9 at 1135 and TP-1 at 1200. Chloride was diluted in both samples and Sulfate was diluted in M-MW-9, no qualification necessary.

MB: 2735927: Lithium (5.5J), associated samples -9001 and -9002, detections in samples > reporting limit, no qualification necessary.
2733496: Chloride (0.39J), associated samples -9001 and -9002, detections in samples > reporting limit, no qualification necessary.

MS/MSD: 2735929, 2735930: MS and MSD % recovery high for Calcium, Magnesium, and Sodium, associated sample 60346689002

December 14, 2020

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

RE: Project: AMEREN MEC
Pace Project No.: 60354084

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on November 11, 2020. 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



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 MEC

Pace Project No.: 60354084

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

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

SAMPLE SUMMARY

Project: AMEREN MEC

Pace Project No.: 60354084

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60354084001	M-MW-1	Water	11/10/20 09:15	11/11/20 04:21
60354084002	M-MW-2	Water	11/10/20 12:10	11/11/20 04:21
60354084003	M-MW-3	Water	11/10/20 12:55	11/11/20 04:21
60354084004	M-MW-4	Water	11/10/20 13:50	11/11/20 04:21
60354084005	M-MW-5	Water	11/10/20 14:40	11/11/20 04:21
60354084006	M-MW-6	Water	11/09/20 14:25	11/11/20 04:21
60354084007	M-MW-7	Water	11/09/20 15:10	11/11/20 04:21
60354084008	M-MW-8	Water	11/09/20 15:15	11/11/20 04:21
60354084009	M-BMW-1	Water	11/10/20 11:00	11/11/20 04:21
60354084010	M-BMW-2	Water	11/09/20 11:50	11/11/20 04:21
60354084011	M-DUP-1	Water	11/09/20 08:00	11/11/20 04:21
60354084012	M-FB-1	Water	11/10/20 09:45	11/11/20 04:21
60354084013	M-MS-1 (M-MW-7)	Water	11/10/20 15:10	11/11/20 04:21
60354084014	M-MSD-1 (M-MW-7)	Water	11/10/20 15:10	11/11/20 04:21

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 MEC

Pace Project No.: 60354084

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60354084001	M-MW-1	EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354084002	M-MW-2	EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354084003	M-MW-3	EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354084004	M-MW-4	EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354084005	M-MW-5	EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354084006	M-MW-6	EPA 200.7	JLH, TDS	11	PASI-K
		EPA 200.8	JGP	2	PASI-K

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: AMEREN MEC

Pace Project No.: 60354084

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60354084007	M-MW-7	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
60354084008	M-MW-8	SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JLH	11	PASI-K
60354084009	M-BMW-1	EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60354084010	M-BMW-2	SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354084011	M-DUP-1	EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: AMEREN MEC

Pace Project No.: 60354084

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60354084012	M-FB-1	SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354084013	M-MS-1 (M-MW-7)	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60354084014	M-MSD-1 (M-MW-7)	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-1 **Lab ID: 60354084001** Collected: 11/10/20 09:15 Received: 11/11/20 04:21 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	363	ug/L	5.0	1.8	1	11/20/20 18:38	11/23/20 16:33	7440-39-3	
Boron	45.6J	ug/L	100	11.7	1	11/20/20 18:38	11/23/20 16:33	7440-42-8	
Calcium	134000	ug/L	200	32.4	1	11/20/20 18:38	11/23/20 16:33	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	11/20/20 18:38	11/23/20 16:33	7440-48-4	
Iron	14100	ug/L	50.0	26.8	1	11/20/20 18:38	11/23/20 16:33	7439-89-6	
Lithium	<4.6	ug/L	10.0	4.6	1	11/20/20 18:38	11/23/20 16:33	7439-93-2	
Magnesium	44600	ug/L	50.0	19.7	1	11/20/20 18:38	11/23/20 16:33	7439-95-4	
Manganese	1930	ug/L	5.0	0.97	1	11/20/20 18:38	11/23/20 16:33	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	11/20/20 18:38	11/23/20 16:33	7439-98-7	
Potassium	1740	ug/L	500	189	1	11/20/20 18:38	11/23/20 16:33	7440-09-7	
Sodium	28800	ug/L	500	107	1	11/20/20 18:38	11/23/20 16:33	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.57J	ug/L	1.0	0.086	1	11/20/20 18:12	11/23/20 16:09	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	11/20/20 18:12	11/23/20 16:09	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	412	mg/L	20.0	8.4	1		11/18/20 08:21		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	651	mg/L	10.0	10.0	1		11/16/20 08:21		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	43.1	mg/L	10.0	3.6	10		11/21/20 14:35	16887-00-6	
Fluoride	0.37	mg/L	0.20	0.085	1		11/21/20 14:20	16984-48-8	
Sulfate	112	mg/L	10.0	4.2	10		11/21/20 14:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-2 **Lab ID: 60354084002** Collected: 11/10/20 12:10 Received: 11/11/20 04:21 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	320	ug/L	5.0	1.8	1	11/20/20 18:38	11/23/20 16:36	7440-39-3	
Boron	7350	ug/L	100	11.7	1	11/20/20 18:38	11/23/20 16:36	7440-42-8	
Calcium	139000	ug/L	200	32.4	1	11/20/20 18:38	11/23/20 16:36	7440-70-2	M1
Cobalt	<1.5	ug/L	5.0	1.5	1	11/20/20 18:38	11/23/20 16:36	7440-48-4	
Iron	48400	ug/L	50.0	26.8	1	11/20/20 18:38	11/23/20 16:36	7439-89-6	
Lithium	<4.6	ug/L	10.0	4.6	1	11/20/20 18:38	11/23/20 16:36	7439-93-2	
Magnesium	45300	ug/L	50.0	19.7	1	11/20/20 18:38	11/23/20 16:36	7439-95-4	
Manganese	6150	ug/L	5.0	0.97	1	11/20/20 18:38	11/23/20 16:36	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	11/20/20 18:38	11/23/20 16:36	7439-98-7	
Potassium	2680	ug/L	500	189	1	11/20/20 18:38	11/23/20 16:36	7440-09-7	
Sodium	46800	ug/L	500	107	1	11/20/20 18:38	11/23/20 16:36	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	1.6	ug/L	1.0	0.086	1	11/20/20 18:12	11/23/20 16:11	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	11/20/20 18:12	11/23/20 16:11	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	255	mg/L	20.0	8.4	1		11/18/20 08:25		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	843	mg/L	10.0	10.0	1		11/16/20 08:21		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	30.7	mg/L	2.0	0.71	2		11/21/20 15:07	16887-00-6	
Fluoride	0.24	mg/L	0.20	0.085	1		11/21/20 14:51	16984-48-8	
Sulfate	333	mg/L	50.0	21.0	50		11/21/20 15:23	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-3 **Lab ID: 60354084003** Collected: 11/10/20 12:55 Received: 11/11/20 04:21 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	252	ug/L	5.0	1.8	1	11/20/20 18:38	11/23/20 16:49	7440-39-3	
Boron	10500	ug/L	100	11.7	1	11/20/20 18:38	11/23/20 16:49	7440-42-8	
Calcium	178000	ug/L	200	32.4	1	11/20/20 18:38	11/23/20 16:49	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	11/20/20 18:38	11/23/20 16:49	7440-48-4	
Iron	32700	ug/L	50.0	26.8	1	11/20/20 18:38	11/23/20 16:49	7439-89-6	
Lithium	<4.6	ug/L	10.0	4.6	1	11/20/20 18:38	11/23/20 16:49	7439-93-2	
Magnesium	51400	ug/L	50.0	19.7	1	11/20/20 18:38	11/23/20 16:49	7439-95-4	
Manganese	2230	ug/L	5.0	0.97	1	11/20/20 18:38	11/23/20 16:49	7439-96-5	
Molybdenum	10.6J	ug/L	20.0	1.7	1	11/20/20 18:38	11/23/20 16:49	7439-98-7	
Potassium	4110	ug/L	500	189	1	11/20/20 18:38	11/23/20 16:49	7440-09-7	
Sodium	42800	ug/L	500	107	1	11/20/20 18:38	11/23/20 16:49	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	7.3	ug/L	1.0	0.086	1	11/20/20 18:12	11/23/20 16:13	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	11/20/20 18:12	11/23/20 16:13	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	299	mg/L	20.0	8.4	1		11/18/20 08:30		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	996	mg/L	10.0	10.0	1		11/16/20 08:21		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	32.4	mg/L	5.0	1.8	5		11/21/20 16:26	16887-00-6	
Fluoride	0.21	mg/L	0.20	0.085	1		11/21/20 16:11	16984-48-8	
Sulfate	403	mg/L	50.0	21.0	50		11/21/20 16:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-4 **Lab ID: 60354084004** Collected: 11/10/20 13:50 Received: 11/11/20 04:21 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	175	ug/L	5.0	1.8	1	11/20/20 18:38	11/23/20 16:52	7440-39-3	
Boron	8890	ug/L	100	11.7	1	11/20/20 18:38	11/23/20 16:52	7440-42-8	
Calcium	178000	ug/L	200	32.4	1	11/20/20 18:38	11/23/20 16:52	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	11/20/20 18:38	11/23/20 16:52	7440-48-4	
Iron	22100	ug/L	50.0	26.8	1	11/20/20 18:38	11/23/20 16:52	7439-89-6	
Lithium	15.2	ug/L	10.0	4.6	1	11/20/20 18:38	11/23/20 16:52	7439-93-2	
Magnesium	53600	ug/L	50.0	19.7	1	11/20/20 18:38	11/23/20 16:52	7439-95-4	
Manganese	656	ug/L	5.0	0.97	1	11/20/20 18:38	11/23/20 16:52	7439-96-5	
Molybdenum	53.1	ug/L	20.0	1.7	1	11/20/20 18:38	11/23/20 16:52	7439-98-7	
Potassium	6170	ug/L	500	189	1	11/20/20 18:38	11/23/20 16:52	7440-09-7	
Sodium	46600	ug/L	500	107	1	11/20/20 18:38	11/23/20 16:52	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	14.4	ug/L	1.0	0.086	1	11/20/20 18:12	11/23/20 16:15	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	11/20/20 18:12	11/23/20 16:15	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	286	mg/L	20.0	8.4	1		11/18/20 08:36		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1010	mg/L	13.3	13.3	1		11/16/20 08:21		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	51.0	mg/L	5.0	1.8	5		11/21/20 17:14	16887-00-6	
Fluoride	0.27	mg/L	0.20	0.085	1		11/21/20 16:58	16984-48-8	
Sulfate	419	mg/L	50.0	21.0	50		11/21/20 17:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-5 **Lab ID: 60354084005** Collected: 11/10/20 14:40 Received: 11/11/20 04:21 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	11/20/20 18:38	11/23/20 16:54	7440-39-3	
Boron	8370	ug/L	100	11.7	1	11/20/20 18:38	11/23/20 16:54	7440-42-8	
Calcium	168000	ug/L	200	32.4	1	11/20/20 18:38	11/23/20 16:54	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	11/20/20 18:38	11/23/20 16:54	7440-48-4	
Iron	16000	ug/L	50.0	26.8	1	11/20/20 18:38	11/23/20 16:54	7439-89-6	
Lithium	14.6	ug/L	10.0	4.6	1	11/20/20 18:38	11/23/20 16:54	7439-93-2	
Magnesium	55800	ug/L	50.0	19.7	1	11/20/20 18:38	11/23/20 16:54	7439-95-4	
Manganese	456	ug/L	5.0	0.97	1	11/20/20 18:38	11/23/20 16:54	7439-96-5	
Molybdenum	98.5	ug/L	20.0	1.7	1	11/20/20 18:38	11/23/20 16:54	7439-98-7	
Potassium	5490	ug/L	500	189	1	11/20/20 18:38	11/23/20 16:54	7440-09-7	
Sodium	45400	ug/L	500	107	1	11/20/20 18:38	11/23/20 16:54	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	22.3	ug/L	1.0	0.086	1	11/20/20 18:12	11/23/20 16:17	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	11/20/20 18:12	11/23/20 16:17	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	327	mg/L	20.0	8.4	1		11/18/20 08:41		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	953	mg/L	13.3	13.3	1		11/16/20 08:21		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	44.3	mg/L	5.0	1.8	5		11/21/20 18:01	16887-00-6	
Fluoride	0.31	mg/L	0.20	0.085	1		11/21/20 17:46	16984-48-8	
Sulfate	359	mg/L	50.0	21.0	50		11/21/20 18:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-6 **Lab ID: 60354084006** Collected: 11/09/20 14:25 Received: 11/11/20 04:21 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	53.2	ug/L	5.0	1.8	1	11/20/20 18:38	11/23/20 16:57	7440-39-3	
Boron	4330	ug/L	100	11.7	1	11/20/20 18:38	11/23/20 16:57	7440-42-8	
Calcium	438000	ug/L	200	32.4	1	11/20/20 18:38	11/23/20 16:57	7440-70-2	
Cobalt	8.4	ug/L	5.0	1.5	1	11/20/20 18:38	11/24/20 13:59	7440-48-4	
Iron	2370	ug/L	50.0	26.8	1	11/20/20 18:38	11/23/20 16:57	7439-89-6	
Lithium	106	ug/L	10.0	4.6	1	11/20/20 18:38	11/23/20 16:57	7439-93-2	
Magnesium	34700	ug/L	50.0	19.7	1	11/20/20 18:38	11/23/20 16:57	7439-95-4	
Manganese	1190	ug/L	5.0	0.97	1	11/20/20 18:38	11/23/20 16:57	7439-96-5	
Molybdenum	164	ug/L	20.0	1.7	1	11/20/20 18:38	11/23/20 16:57	7439-98-7	
Potassium	15000	ug/L	500	189	1	11/20/20 18:38	11/23/20 16:57	7440-09-7	
Sodium	20900	ug/L	500	107	1	11/20/20 18:38	11/23/20 16:57	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	2.2	ug/L	1.0	0.086	1	11/20/20 18:12	11/23/20 16:19	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	11/20/20 18:12	11/23/20 16:19	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	601	mg/L	20.0	8.4	1		11/16/20 13:41		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1710	mg/L	20.0	20.0	1		11/16/20 08:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	17.0	mg/L	1.0	0.36	1		11/21/20 18:33	16887-00-6	
Fluoride	0.27	mg/L	0.20	0.085	1		11/21/20 18:33	16984-48-8	
Sulfate	737	mg/L	50.0	21.0	50		11/21/20 19:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-7 **Lab ID: 60354084007** Collected: 11/09/20 15:10 Received: 11/11/20 04:21 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	40.2	ug/L	5.0	1.8	1	11/20/20 18:38	11/23/20 17:00	7440-39-3	
Boron	33000	ug/L	100	11.7	1	11/20/20 18:38	11/23/20 17:00	7440-42-8	M1
Calcium	463000	ug/L	200	32.4	1	11/20/20 18:38	11/23/20 17:00	7440-70-2	M1
Cobalt	<1.5	ug/L	5.0	1.5	1	11/20/20 18:38	11/23/20 17:00	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	11/20/20 18:38	11/23/20 17:00	7439-89-6	
Lithium	52.0	ug/L	10.0	4.6	1	11/20/20 18:38	11/23/20 17:00	7439-93-2	
Magnesium	49800	ug/L	50.0	19.7	1	11/20/20 18:38	11/23/20 17:00	7439-95-4	
Manganese	2.8J	ug/L	5.0	0.97	1	11/20/20 18:38	11/23/20 17:00	7439-96-5	
Molybdenum	527	ug/L	20.0	1.7	1	11/20/20 18:38	11/23/20 17:00	7439-98-7	
Potassium	17200	ug/L	500	189	1	11/20/20 18:38	11/23/20 17:00	7440-09-7	
Sodium	92400	ug/L	500	107	1	11/20/20 18:38	11/23/20 17:00	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	2.2	ug/L	1.0	0.086	1	11/20/20 18:12	11/23/20 16:25	7440-38-2	
Selenium	1.9	ug/L	1.0	0.18	1	11/20/20 18:12	11/23/20 16:25	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	223	mg/L	20.0	8.4	1		11/16/20 13:45		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	2270	mg/L	20.0	20.0	1		11/16/20 08:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	65.3	mg/L	10.0	3.6	10		11/21/20 20:40	16887-00-6	
Fluoride	0.33	mg/L	0.20	0.085	1		11/21/20 19:52	16984-48-8	
Sulfate	1200	mg/L	100	27.8	100		11/23/20 18:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-8 **Lab ID: 60354084008** Collected: 11/09/20 15:15 Received: 11/11/20 04:21 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	210	ug/L	5.0	1.8	1	11/20/20 18:38	11/23/20 17:08	7440-39-3	
Boron	9930	ug/L	100	11.7	1	11/20/20 18:38	11/23/20 17:08	7440-42-8	
Calcium	193000	ug/L	200	32.4	1	11/20/20 18:38	11/23/20 17:08	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	11/20/20 18:38	11/23/20 17:08	7440-48-4	
Iron	9360	ug/L	50.0	26.8	1	11/20/20 18:38	11/23/20 17:08	7439-89-6	
Lithium	27.5	ug/L	10.0	4.6	1	11/20/20 18:38	11/23/20 17:08	7439-93-2	
Magnesium	41700	ug/L	50.0	19.7	1	11/20/20 18:38	11/23/20 17:08	7439-95-4	
Manganese	1900	ug/L	5.0	0.97	1	11/20/20 18:38	11/23/20 17:08	7439-96-5	
Molybdenum	220	ug/L	20.0	1.7	1	11/20/20 18:38	11/23/20 17:08	7439-98-7	
Potassium	8280	ug/L	500	189	1	11/20/20 18:38	11/23/20 17:08	7440-09-7	
Sodium	33300	ug/L	500	107	1	11/20/20 18:38	11/23/20 17:08	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	6.2	ug/L	1.0	0.086	1	11/20/20 18:12	11/23/20 16:31	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	11/20/20 18:12	11/23/20 16:31	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	249	mg/L	20.0	8.4	1		11/16/20 13:56		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	972	mg/L	10.0	10.0	1		11/16/20 08:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	25.5	mg/L	2.0	0.71	2		11/21/20 23:03	16887-00-6	
Fluoride	0.34	mg/L	0.20	0.085	1		11/21/20 22:47	16984-48-8	
Sulfate	468	mg/L	50.0	21.0	50		11/21/20 23:18	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-BMW-1 Lab ID: 60354084009 Collected: 11/10/20 11:00 Received: 11/11/20 04:21 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	11/20/20 18:38	11/23/20 17:18	7440-39-3	
Boron	275	ug/L	100	11.7	1	11/20/20 18:38	11/23/20 17:18	7440-42-8	
Calcium	128000	ug/L	200	32.4	1	11/20/20 18:38	11/23/20 17:18	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	11/20/20 18:38	11/23/20 17:18	7440-48-4	
Iron	856	ug/L	50.0	26.8	1	11/20/20 18:38	11/23/20 17:18	7439-89-6	
Lithium	6.4J	ug/L	10.0	4.6	1	11/20/20 18:38	11/23/20 17:18	7439-93-2	
Magnesium	32700	ug/L	50.0	19.7	1	11/20/20 18:38	11/23/20 17:18	7439-95-4	
Manganese	221	ug/L	5.0	0.97	1	11/20/20 18:38	11/23/20 17:18	7439-96-5	
Molybdenum	4.6J	ug/L	20.0	1.7	1	11/20/20 18:38	11/23/20 17:18	7439-98-7	
Potassium	3220	ug/L	500	189	1	11/20/20 18:38	11/23/20 17:18	7440-09-7	
Sodium	78700	ug/L	500	107	1	11/20/20 18:38	11/23/20 17:18	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	5.5	ug/L	1.0	0.086	1	11/20/20 18:12	11/23/20 16:33	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	11/20/20 18:12	11/23/20 16:33	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	340	mg/L	20.0	8.4	1		11/18/20 08:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	700	mg/L	10.0	10.0	1		11/16/20 08:21		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	151	mg/L	20.0	7.8	20		12/01/20 02:34	16887-00-6	
Fluoride	0.46	mg/L	0.20	0.075	1		12/01/20 02:18	16984-48-8	
Sulfate	70.5	mg/L	20.0	5.6	20		12/01/20 02:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-BMW-2 **Lab ID: 60354084010** Collected: 11/09/20 11:50 Received: 11/11/20 04:21 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	598	ug/L	5.0	1.8	1	11/20/20 18:38	11/23/20 17:20	7440-39-3	
Boron	94.8J	ug/L	100	11.7	1	11/20/20 18:38	11/23/20 17:20	7440-42-8	
Calcium	115000	ug/L	200	32.4	1	11/20/20 18:38	11/23/20 17:20	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	11/20/20 18:38	11/23/20 17:20	7440-48-4	
Iron	14800	ug/L	50.0	26.8	1	11/20/20 18:38	11/23/20 17:20	7439-89-6	
Lithium	<4.6	ug/L	10.0	4.6	1	11/20/20 18:38	11/23/20 17:20	7439-93-2	
Magnesium	39400	ug/L	50.0	19.7	1	11/20/20 18:38	11/23/20 17:20	7439-95-4	
Manganese	4750	ug/L	5.0	0.97	1	11/20/20 18:38	11/23/20 17:20	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	11/20/20 18:38	11/23/20 17:20	7439-98-7	
Potassium	1610	ug/L	500	189	1	11/20/20 18:38	11/23/20 17:20	7440-09-7	
Sodium	21300	ug/L	500	107	1	11/20/20 18:38	11/23/20 17:20	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	1.3	ug/L	1.0	0.086	1	11/20/20 18:12	11/23/20 16:35	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	11/20/20 18:12	11/23/20 16:35	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	438	mg/L	20.0	8.4	1		11/18/20 08:03		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	488	mg/L	10.0	10.0	1		11/16/20 08:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	13.1	mg/L	1.0	0.39	1		12/01/20 02:49	16887-00-6	
Fluoride	0.45	mg/L	0.20	0.075	1		12/01/20 02:49	16984-48-8	
Sulfate	29.9	mg/L	2.0	0.56	2		12/01/20 03:05	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-DUP-1 **Lab ID: 60354084011** Collected: 11/09/20 08:00 Received: 11/11/20 04:21 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	192	ug/L	5.0	1.8	1	11/20/20 18:38	11/23/20 17:23	7440-39-3	
Boron	10000	ug/L	100	11.7	1	11/20/20 18:38	11/23/20 17:23	7440-42-8	
Calcium	184000	ug/L	200	32.4	1	11/20/20 18:38	11/23/20 17:23	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	11/20/20 18:38	11/23/20 17:23	7440-48-4	
Iron	8990	ug/L	50.0	26.8	1	11/20/20 18:38	11/23/20 17:23	7439-89-6	
Lithium	27.1	ug/L	10.0	4.6	1	11/20/20 18:38	11/23/20 17:23	7439-93-2	
Magnesium	39700	ug/L	50.0	19.7	1	11/20/20 18:38	11/23/20 17:23	7439-95-4	
Manganese	1940	ug/L	5.0	0.97	1	11/20/20 18:38	11/23/20 17:23	7439-96-5	
Molybdenum	225	ug/L	20.0	1.7	1	11/20/20 18:38	11/23/20 17:23	7439-98-7	
Potassium	7580	ug/L	500	189	1	11/20/20 18:38	11/23/20 17:23	7440-09-7	
Sodium	32600	ug/L	500	107	1	11/20/20 18:38	11/23/20 17:23	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	6.4	ug/L	1.0	0.086	1	11/20/20 18:12	11/23/20 16:37	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	11/20/20 18:12	11/23/20 16:37	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	217	mg/L	20.0	8.4	1		11/18/20 08:14		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	940	mg/L	10.0	10.0	1		11/16/20 08:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	24.5	mg/L	2.0	0.78	2		12/01/20 10:07	16887-00-6	
Fluoride	0.39	mg/L	0.20	0.075	1		12/01/20 03:20	16984-48-8	
Sulfate	447	mg/L	50.0	13.9	50		12/01/20 03:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-FB-1 **Lab ID: 60354084012** Collected: 11/10/20 09:45 Received: 11/11/20 04:21 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	11/20/20 18:38	11/23/20 17:25	7440-39-3	
Boron	33.5J	ug/L	100	11.7	1	11/20/20 18:38	11/23/20 17:25	7440-42-8	
Calcium	124J	ug/L	200	32.4	1	11/20/20 18:38	11/23/20 17:25	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	11/20/20 18:38	11/23/20 17:25	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	11/20/20 18:38	11/23/20 17:25	7439-89-6	
Lithium	<4.6	ug/L	10.0	4.6	1	11/20/20 18:38	11/23/20 17:25	7439-93-2	
Magnesium	25.2J	ug/L	50.0	19.7	1	11/20/20 18:38	11/23/20 17:25	7439-95-4	
Manganese	1.6J	ug/L	5.0	0.97	1	11/20/20 18:38	11/23/20 17:25	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	11/20/20 18:38	11/23/20 17:25	7439-98-7	
Potassium	<189	ug/L	500	189	1	11/20/20 18:38	11/23/20 17:25	7440-09-7	
Sodium	183J	ug/L	500	107	1	11/20/20 18:38	11/23/20 17:25	7440-23-5	B
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<0.086	ug/L	1.0	0.086	1	11/20/20 18:12	11/23/20 16:39	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	11/20/20 18:12	11/23/20 16:39	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		11/18/20 09:02		
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		11/16/20 08:21		
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		12/01/20 04:07	16887-00-6	
Fluoride	<0.075	mg/L	0.20	0.075	1		12/01/20 04:07	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		12/01/20 04:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60354084

QC Batch:	690785	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: 60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084006, 60354084007, 60354084008, 60354084009, 60354084010, 60354084011, 60354084012

METHOD BLANK: 2790884 Matrix: Water

Associated Lab Samples: 60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084006, 60354084007, 60354084008, 60354084009, 60354084010, 60354084011, 60354084012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	11/23/20 16:28	
Boron	ug/L	<11.7	100	11.7	11/23/20 16:28	
Calcium	ug/L	<32.4	200	32.4	11/23/20 16:28	
Cobalt	ug/L	<1.5	5.0	1.5	11/23/20 16:28	
Iron	ug/L	<26.8	50.0	26.8	11/23/20 16:28	
Lithium	ug/L	<4.6	10.0	4.6	11/23/20 16:28	
Magnesium	ug/L	<19.7	50.0	19.7	11/23/20 16:28	
Manganese	ug/L	<0.97	5.0	0.97	11/23/20 16:28	
Molybdenum	ug/L	<1.7	20.0	1.7	11/23/20 16:28	
Potassium	ug/L	<189	500	189	11/23/20 16:28	
Sodium	ug/L	200J	500	107	11/23/20 16:28	

LABORATORY CONTROL SAMPLE: 2790885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1000	100	85-115	
Boron	ug/L	1000	996	100	85-115	
Calcium	ug/L	10000	10000	100	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Iron	ug/L	10000	9540	95	85-115	
Lithium	ug/L	1000	1060	106	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	1000	100	85-115	
Molybdenum	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	10400	104	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE SAMPLE: 2790886

Parameter	Units	60354084002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	320	1000	1310	99	70-130	
Boron	ug/L	7350	1000	8120	78	70-130	
Calcium	ug/L	139000	10000	144000	51	70-130 M1	
Cobalt	ug/L	<1.5	1000	1020	102	70-130	
Iron	ug/L	48400	10000	56100	77	70-130	
Lithium	ug/L	<4.6	1000	1040	104	70-130	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60354084

MATRIX SPIKE SAMPLE:		2790886					
Parameter	Units	60354084002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Magnesium	ug/L	45300	10000	53900	86	70-130	
Manganese	ug/L	6150	1000	6950	80	70-130	
Molybdenum	ug/L	<1.7	1000	1060	106	70-130	
Potassium	ug/L	2680	10000	12900	102	70-130	
Sodium	ug/L	46800	10000	55200	84	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2790887			2790888							
Parameter	Units	60354084007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	40.2	1000	1000	1020	1050	98	101	70-130	3	20	
Boron	ug/L	33000	1000	1000	34600	35100	170	214	70-130	1	20	M1
Calcium	ug/L	463000	10000	10000	467000	486000	37	229	70-130	4	20	M1
Cobalt	ug/L	<1.5	1000	1000	992	987	99	99	70-130	1	20	
Iron	ug/L	<26.8	10000	10000	9220	9500	92	95	70-130	3	20	
Lithium	ug/L	52.0	1000	1000	1080	1110	103	106	70-130	3	20	
Magnesium	ug/L	49800	10000	10000	60600	61800	108	120	70-130	2	20	
Manganese	ug/L	2.8J	1000	1000	993	1010	99	101	70-130	2	20	
Molybdenum	ug/L	527	1000	1000	1600	1630	107	110	70-130	2	20	
Potassium	ug/L	17200	10000	10000	27500	28200	102	109	70-130	2	20	
Sodium	ug/L	92400	10000	10000	102000	105000	100	122	70-130	2	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC
Pace Project No.: 60354084

QC Batch: 690775 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: 60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084006, 60354084007, 60354084008, 60354084009, 60354084010, 60354084011, 60354084012

METHOD BLANK: 2790856 Matrix: Water
Associated Lab Samples: 60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084006, 60354084007, 60354084008, 60354084009, 60354084010, 60354084011, 60354084012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.086	1.0	0.086	11/23/20 15:56	
Selenium	ug/L	<0.18	1.0	0.18	11/23/20 15:56	

LABORATORY CONTROL SAMPLE: 2790857

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	39.4	98	85-115	
Selenium	ug/L	40	38.6	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2790858 2790859

Parameter	Units	60354084007		60354084012		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Arsenic	ug/L	2.2	40	40	44.1	45.0	105	107	70-130	2	20		
Selenium	ug/L	1.9	40	40	41.2	42.5	98	101	70-130	3	20		

MATRIX SPIKE SAMPLE: 2790860

Parameter	Units	60354084012 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	<0.086	40	39.1	98	70-130	
Selenium	ug/L	<0.18	40	37.3	93	70-130	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60354084

QC Batch: 689410	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354084006, 60354084007, 60354084008

METHOD BLANK: 2785628 Matrix: Water

Associated Lab Samples: 60354084006, 60354084007, 60354084008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/16/20 11:22	

LABORATORY CONTROL SAMPLE: 2785629

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

SAMPLE DUPLICATE: 2785630

Parameter	Units	60354082002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	554	548	1	10	

SAMPLE DUPLICATE: 2785631

Parameter	Units	60354084007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	223	226	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC
Pace Project No.: 60354084

QC Batch: 689881 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084009, 60354084010, 60354084011, 60354084012

METHOD BLANK: 2787062 Matrix: Water
Associated Lab Samples: 60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084009, 60354084010, 60354084011, 60354084012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/18/20 07:52	

LABORATORY CONTROL SAMPLE: 2787063

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	495	99	90-110	

SAMPLE DUPLICATE: 2787064

Parameter	Units	60354084010 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	438	437	0	10	

SAMPLE DUPLICATE: 2787065

Parameter	Units	60354395002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	322	323	0	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC
Pace Project No.: 60354084

QC Batch: 690757 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: 60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084006, 60354084007, 60354084008

METHOD BLANK: 2790768 Matrix: Water
Associated Lab Samples: 60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084006, 60354084007, 60354084008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.36	1.0	0.36	11/21/20 09:27	
Fluoride	mg/L	<0.085	0.20	0.085	11/21/20 09:27	
Sulfate	mg/L	<0.42	1.0	0.42	11/21/20 09:27	

METHOD BLANK: 2792379 Matrix: Water
Associated Lab Samples: 60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084006, 60354084007, 60354084008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.36	1.0	0.36	11/23/20 08:28	
Fluoride	mg/L	<0.085	0.20	0.085	11/23/20 08:28	
Sulfate	mg/L	<0.42	1.0	0.42	11/23/20 08:28	

LABORATORY CONTROL SAMPLE: 2790769

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	5	5.3	107	90-110	

LABORATORY CONTROL SAMPLE: 2792380

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	99	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE SAMPLE: 2790770

Parameter	Units	60354930006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	33.4	25	58.1	99	80-120	
Fluoride	mg/L	4.9	2.5	7.5	101	80-120	
Sulfate	mg/L	144	100	241	97	80-120	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60354084

Parameter	Units	60354084007		2790771		2790772		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Chloride	mg/L	65.3	50	50	115	116	100	101	80-120	0	15			
Fluoride	mg/L	0.33	2.5	2.5	2.6	2.6	92	92	80-120	0	15			
Sulfate	mg/L	1200	500	500	1670	1670	94	95	80-120	0	15			

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC
Pace Project No.: 60354084

QC Batch: 691823 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: 60354084009, 60354084010, 60354084011, 60354084012

METHOD BLANK: 2794551 Matrix: Water
Associated Lab Samples: 60354084009, 60354084010, 60354084011, 60354084012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/30/20 12:56	
Fluoride	mg/L	<0.075	0.20	0.075	11/30/20 12:56	
Sulfate	mg/L	<0.28	1.0	0.28	11/30/20 12:56	

METHOD BLANK: 2795679 Matrix: Water
Associated Lab Samples: 60354084009, 60354084010, 60354084011, 60354084012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/01/20 08:27	
Fluoride	mg/L	<0.075	0.20	0.075	12/01/20 08:27	
Sulfate	mg/L	<0.28	1.0	0.28	12/01/20 08:27	

LABORATORY CONTROL SAMPLE: 2794552

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	5.0	100	90-110	

LABORATORY CONTROL SAMPLE: 2795680

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	95	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2794553 2794554

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60353399008 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	4.4	5	5	9.0	9.2	93	98	80-120	2	15		
Fluoride	mg/L	0.31	2.5	2.5	2.7	2.8	96	100	80-120	4	15		
Sulfate	mg/L	11.5	5	5	16.6	16.8	101	105	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.

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC

Pace Project No.: 60354084

MATRIX SPIKE SAMPLE:		2794555					
Parameter	Units	60353399018 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	<0.39	5	4.6	92	80-120	
Fluoride	mg/L	<0.075	2.5	2.3	93	80-120	
Sulfate	mg/L	<0.28	5	4.9	97	80-120	

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

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-1 **Lab ID: 60354084001** Collected: 11/10/20 09:15 Received: 11/11/20 04:21 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	0.0927 ± 0.423 (0.861) C:NA T:81%	pCi/L	12/08/20 15:48	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.305 ± 0.631 (1.39) C:58% T:76%	pCi/L	12/08/20 10:15	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-2 **Lab ID: 60354084002** Collected: 11/10/20 12:10 Received: 11/11/20 04:21 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	-0.0689 ± 0.314 (0.741) C:NA T:94%	pCi/L	12/08/20 15:48	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.548 ± 0.540 (1.12) C:55% T:87%	pCi/L	12/08/20 10:15	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-3 **Lab ID: 60354084003** Collected: 11/10/20 12:55 Received: 11/11/20 04:21 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	0.436 ± 0.353 (0.197) C:NA T:87%	pCi/L	12/08/20 15:48	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.962 ± 0.607 (1.15) C:60% T:76%	pCi/L	12/08/20 10:15	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-4 **Lab ID: 60354084004** Collected: 11/10/20 13:50 Received: 11/11/20 04:21 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	0.464 ± 0.506 (0.796) C:NA T:103%	pCi/L	12/08/20 15:48	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.914 ± 0.754 (1.51) C:47% T:72%	pCi/L	12/08/20 10:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-5 **Lab ID: 60354084005** Collected: 11/10/20 14:40 Received: 11/11/20 04:21 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	0.899 ± 0.535 (0.509) C:NA T:92%	pCi/L	12/08/20 15:48	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.08 ± 0.624 (1.15) C:56% T:81%	pCi/L	12/08/20 10:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-6 **Lab ID: 60354084006** Collected: 11/09/20 14:25 Received: 11/11/20 04:21 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	0.186 ± 0.284 (0.456) C:NA T:98%	pCi/L	12/08/20 15:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.655 ± 0.542 (1.09) C:61% T:78%	pCi/L	12/08/20 10:14	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-7 **Lab ID: 60354084007** Collected: 11/09/20 15:10 Received: 11/11/20 04:21 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	0.250 ± 0.261 (0.368) C:NA T:96%	pCi/L	12/08/20 15:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.719 ± 0.552 (1.10) C:58% T:88%	pCi/L	12/08/20 10:14	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MW-8 **Lab ID: 60354084008** Collected: 11/09/20 15:15 Received: 11/11/20 04:21 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	0.126 ± 0.288 (0.464) C:NA T:100%	pCi/L	12/08/20 15:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0314 ± 0.605 (1.39) C:55% T:83%	pCi/L	12/08/20 11:13	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-BMW-1 **Lab ID: 60354084009** Collected: 11/10/20 11:00 Received: 11/11/20 04:21 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	0.354 ± 0.326 (0.192) C:NA T:93%	pCi/L	12/08/20 15:48	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0600 ± 0.426 (0.981) C:53% T:92%	pCi/L	12/08/20 10:15	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-BMW-2 **Lab ID: 60354084010** Collected: 11/09/20 11:50 Received: 11/11/20 04:21 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	0.630 ± 0.442 (0.213) C:NA T:86%	pCi/L	12/08/20 15:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.664 ± 0.657 (1.36) C:55% T:82%	pCi/L	12/08/20 11:11	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-DUP-1 **Lab ID: 60354084011** Collected: 11/09/20 08:00 Received: 11/11/20 04:21 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	0.571 ± 0.418 (0.467) C:NA T:96%	pCi/L	12/08/20 15:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0977 ± 0.649 (1.48) C:54% T:73%	pCi/L	12/08/20 10:14	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-FB-1 **Lab ID: 60354084012** Collected: 11/10/20 09:45 Received: 11/11/20 04:21 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:98%	pCi/L	12/08/20 15:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0933 ± 0.428 (0.976) C:55% T:88%	pCi/L	12/08/20 10:15	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: M-MS-1 (M-MW-7) Lab ID: 60354084013 Collected: 11/10/20 15:10 Received: 11/11/20 04:21 Matrix: Water PWS: Site ID: Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	94.02 %REC ± NA (NA) C:NA T:NA%	pCi/L	12/08/20 15:48	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	10.7 ± 2.24 (1.11) C:55% T:78%	pCi/L	12/08/20 10:16	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

Sample: M-MSD-1 (M-MW-7) **Lab ID: 60354084014** Collected: 11/10/20 15:10 Received: 11/11/20 04:21 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	77.45 %REC 19.33 RPD ± NA (NA) C:NA T:NA%	pCi/L	12/08/20 16:10	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	11.0 ± 2.23 (0.974) C:58% T:88%	pCi/L	12/08/20 10:17	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

QC Batch: 424022

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: 60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084006, 60354084007, 60354084008, 60354084009, 60354084010, 60354084011, 60354084012, 60354084013, 60354084014

METHOD BLANK: 2049647

Matrix: Water

Associated Lab Samples: 60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084006, 60354084007, 60354084008, 60354084009, 60354084010, 60354084011, 60354084012, 60354084013, 60354084014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.00784 ± 0.395 (0.891) C:65% T:87%	pCi/L	12/08/20 11:18	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MEC

Pace Project No.: 60354084

QC Batch:	424021	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:	60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084006, 60354084007, 60354084008, 60354084009, 60354084010, 60354084011, 60354084012, 60354084013, 60354084014		

METHOD BLANK:	2049646	Matrix:	Water
Associated Lab Samples:	60354084001, 60354084002, 60354084003, 60354084004, 60354084005, 60354084006, 60354084007, 60354084008, 60354084009, 60354084010, 60354084011, 60354084012, 60354084013, 60354084014		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.273 (0.557) C:NA T:88%	pCi/L	12/08/20 15:32	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: AMEREN MEC

Pace Project No.: 60354084

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.

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MEC

Pace Project No.: 60354084

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60354084001	M-MW-1	EPA 200.7	690785	EPA 200.7	690850
60354084002	M-MW-2	EPA 200.7	690785	EPA 200.7	690850
60354084003	M-MW-3	EPA 200.7	690785	EPA 200.7	690850
60354084004	M-MW-4	EPA 200.7	690785	EPA 200.7	690850
60354084005	M-MW-5	EPA 200.7	690785	EPA 200.7	690850
60354084006	M-MW-6	EPA 200.7	690785	EPA 200.7	690850
60354084007	M-MW-7	EPA 200.7	690785	EPA 200.7	690850
60354084008	M-MW-8	EPA 200.7	690785	EPA 200.7	690850
60354084009	M-BMW-1	EPA 200.7	690785	EPA 200.7	690850
60354084010	M-BMW-2	EPA 200.7	690785	EPA 200.7	690850
60354084011	M-DUP-1	EPA 200.7	690785	EPA 200.7	690850
60354084012	M-FB-1	EPA 200.7	690785	EPA 200.7	690850
60354084001	M-MW-1	EPA 200.8	690775	EPA 200.8	690848
60354084002	M-MW-2	EPA 200.8	690775	EPA 200.8	690848
60354084003	M-MW-3	EPA 200.8	690775	EPA 200.8	690848
60354084004	M-MW-4	EPA 200.8	690775	EPA 200.8	690848
60354084005	M-MW-5	EPA 200.8	690775	EPA 200.8	690848
60354084006	M-MW-6	EPA 200.8	690775	EPA 200.8	690848
60354084007	M-MW-7	EPA 200.8	690775	EPA 200.8	690848
60354084008	M-MW-8	EPA 200.8	690775	EPA 200.8	690848
60354084009	M-BMW-1	EPA 200.8	690775	EPA 200.8	690848
60354084010	M-BMW-2	EPA 200.8	690775	EPA 200.8	690848
60354084011	M-DUP-1	EPA 200.8	690775	EPA 200.8	690848
60354084012	M-FB-1	EPA 200.8	690775	EPA 200.8	690848
60354084001	M-MW-1	EPA 903.1	424021		
60354084002	M-MW-2	EPA 903.1	424021		
60354084003	M-MW-3	EPA 903.1	424021		
60354084004	M-MW-4	EPA 903.1	424021		
60354084005	M-MW-5	EPA 903.1	424021		
60354084006	M-MW-6	EPA 903.1	424021		
60354084007	M-MW-7	EPA 903.1	424021		
60354084008	M-MW-8	EPA 903.1	424021		
60354084009	M-BMW-1	EPA 903.1	424021		
60354084010	M-BMW-2	EPA 903.1	424021		
60354084011	M-DUP-1	EPA 903.1	424021		
60354084012	M-FB-1	EPA 903.1	424021		
60354084013	M-MS-1 (M-MW-7)	EPA 903.1	424021		
60354084014	M-MSD-1 (M-MW-7)	EPA 903.1	424021		
60354084001	M-MW-1	EPA 904.0	424022		
60354084002	M-MW-2	EPA 904.0	424022		
60354084003	M-MW-3	EPA 904.0	424022		
60354084004	M-MW-4	EPA 904.0	424022		
60354084005	M-MW-5	EPA 904.0	424022		
60354084006	M-MW-6	EPA 904.0	424022		
60354084007	M-MW-7	EPA 904.0	424022		
60354084008	M-MW-8	EPA 904.0	424022		
60354084009	M-BMW-1	EPA 904.0	424022		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MEC

Pace Project No.: 60354084

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60354084010	M-BMW-2	EPA 904.0	424022		
60354084011	M-DUP-1	EPA 904.0	424022		
60354084012	M-FB-1	EPA 904.0	424022		
60354084013	M-MS-1 (M-MW-7)	EPA 904.0	424022		
60354084014	M-MSD-1 (M-MW-7)	EPA 904.0	424022		
60354084001	M-MW-1	SM 2320B	689881		
60354084002	M-MW-2	SM 2320B	689881		
60354084003	M-MW-3	SM 2320B	689881		
60354084004	M-MW-4	SM 2320B	689881		
60354084005	M-MW-5	SM 2320B	689881		
60354084006	M-MW-6	SM 2320B	689410		
60354084007	M-MW-7	SM 2320B	689410		
60354084008	M-MW-8	SM 2320B	689410		
60354084009	M-BMW-1	SM 2320B	689881		
60354084010	M-BMW-2	SM 2320B	689881		
60354084011	M-DUP-1	SM 2320B	689881		
60354084012	M-FB-1	SM 2320B	689881		
60354084001	M-MW-1	SM 2540C	689440		
60354084002	M-MW-2	SM 2540C	689440		
60354084003	M-MW-3	SM 2540C	689440		
60354084004	M-MW-4	SM 2540C	689440		
60354084005	M-MW-5	SM 2540C	689440		
60354084006	M-MW-6	SM 2540C	689440		
60354084007	M-MW-7	SM 2540C	689440		
60354084008	M-MW-8	SM 2540C	689440		
60354084009	M-BMW-1	SM 2540C	689440		
60354084010	M-BMW-2	SM 2540C	689440		
60354084011	M-DUP-1	SM 2540C	689440		
60354084012	M-FB-1	SM 2540C	689440		
60354084001	M-MW-1	EPA 300.0	690757		
60354084002	M-MW-2	EPA 300.0	690757		
60354084003	M-MW-3	EPA 300.0	690757		
60354084004	M-MW-4	EPA 300.0	690757		
60354084005	M-MW-5	EPA 300.0	690757		
60354084006	M-MW-6	EPA 300.0	690757		
60354084007	M-MW-7	EPA 300.0	690757		
60354084008	M-MW-8	EPA 300.0	690757		
60354084009	M-BMW-1	EPA 300.0	691823		
60354084010	M-BMW-2	EPA 300.0	691823		
60354084011	M-DUP-1	EPA 300.0	691823		
60354084012	M-FB-1	EPA 300.0	691823		

REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60354084



Client Name: Colder 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 2pk

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 15.1 Corr. Factor 40.2 Corrected 15.3

Date and initials of person examining contents: 11-11-2020 ^{UC}

Temperature should be above freezing to 6°C 15.8, 17.2, 1.8, 1.3, 0.7 16.0, 17.4, 2.0, 1.5, 0.9

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	all coolers out of temp had only Radium samples
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>(203) > 3</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 11:13 am, 11/13/20

Project Manager Review Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
 Required Client Information:
 Company: Golder Associates
 Address: 13515 Barnett Parkway Drive, Ste 260
 Ballwin, MO 63021
 Email To: jeffrey_ingram@golder.com
 Phone: 636-724-9191
 Requested Due Date/TAT: Standard

Section B
 Required Project Information:
 Report To: Jeffrey Ingram
 Copy To: Ryan Feldmann/Eric Schneider
 Purchase Order No.:
 Project Name: Ameren MEC Meramec Energy Center
 Project Number: 153-140602 0004A (COC #13)

Section C
 Invoice Information:
 Attention:
 Company Name:
 Address:
 Pace Quote Reference:
 Pace Project Manager: Jamie Church
 Pace Profile #: 9285

REGULATORY AGENCY
 NPDES: GROUND WATER
 RCRA: DRINKING WATER
 UST: OTHER
 Site Location: MO
 STATE:

Page: 2 of 2

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW WATER PRODUCT P SOLID OIL SL WP VA OT TS	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		PRESERVATIVES	Requested Analysis Filtered (Y/N)	DATE	TIME	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS					
			COMPOSITE START	COMPOSITE END/GRAB										RELINQUISHED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)
1	M-MS-1 (M-MSD-7)	WT G	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
2	M-MSD-1 (M-MSD-7)	WT G	11/02/10	1510	11/02/10	1510	11/02/10	1510	11/02/10	1510	Weight	11/02/10	1510	15.9	Y	Y	Y	Y	
3		WT G																	
4		WT G																	
5		WT G																	
6		WT G																	
7		WT G																	
8		WT G																	
9		WT G																	
10		WT G																	
11		WT G																	
12		WT G																	

Section D
 Required Client Information:
 SAMPLE ID (A-Z, 0-9 / -)
 Sample IDs MUST BE UNIQUE
 6035 4084

Pace Project No./ Lab I.D.

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Brendan Talbot
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YYYY): 11/10/2020



GOLDER

MEMORANDUM

DATE December 17, 2020

Project No. 153140602

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

DATA VALIDATION SUMMARY, MERAMEC ENERGY CENTER – MEC – DETECTION MONITORING AND ASSESSMENT MONITORING - DATA PACKAGE 60354084

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 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 matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J).
- When duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates Inc.
 Project Name: Ameren - MEC
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140602
 Validation Date: 12/17/2020

Laboratory: Pace Analytical Services, LLC

SDG #: 60354084

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions); 903.1/904.0 (Radium-226/228)

Matrix: Air Soil/Sed. Water Waste _____

Sample Names M-MW-1, M-MW-2, M-MW-3, M-MW-4, M-MW-5, M-MW-6, M-MW-7, M-MW-8, M-BMW-1, M-BMW-2, M-DUP-1, M-FB-1, M-MS-1 (M-MW-7), M-MSD-1 (M-MW-7)

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

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>11/09/2020 - 11/10/2020</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>BTT/JSI</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: <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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>_____</u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>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"/>	M-DUP-1 @ M-MW-8
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% (<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:

All coolers out of temp only contained radium.

Sulfate and chloride were diluted in several samples, no qualification necessary.

Method Blanks:

2790884: Sodium (200J), associated with samples -001 through -012.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Field Blank:

M-FB-1 @ M-MW-1: Boron (33.5J), Calcium (124J), Magnesium (25.2 J), Manganese (1.6J), Sodium (183J). For sample results >10x blank result, no qualification was necessary.

DUP:

M-DUP-1: Radium-226 non-detect in sample, detect in DUP.

MS/MSD:

2790886: MS % recovery low for Calcium. Associated with sample -002.

2790887/2790888: MS % recovery low for Calcium; MS % recovery high for Boron; MSD % recovery high for Boron and Calcium. Associated with sample -007.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
M-FB-1	Sodium	500	U	Detected in method blank
M-MW-1	Boron	100	U	Detected in field blank
M-MW-8	Radium-226	0.126 ± 0.288	UJ	Detected in DUP, ND in sample
M-DUP-1	"	0.571 ± 0.418	J	"
M-MW-2	Calcium	139000	J	MS% recovery low
M-MW-7	"	463000	J	MS % recovery low, MSD % recovery high
"	Boron	33000	J	MS/MSD % recovery high

Signature: _____



Date: 12/17/2020

December 11, 2020

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

RE: Project: AMEREN MEC-CA
Pace Project No.: 60354082

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on November 11, 2020. 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



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 MEC-CA

Pace Project No.: 60354082

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

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

SAMPLE SUMMARY

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60354082001	M-MW-11S	Water	11/09/20 13:30	11/11/20 04:21
60354082002	M-MW-11D	Water	11/09/20 12:15	11/11/20 04:21
60354082003	M-TP-1	Water	11/09/20 13:15	11/11/20 04:21
60354082004	M-TP-2	Water	11/09/20 09:15	11/11/20 04:21
60354082005	M-MW-9	Water	11/09/20 12:45	11/11/20 04:21
60354082006	M-MW-10	Water	11/09/20 11:10	11/11/20 04:21
60354082007	M-CA-DUP-1	Water	11/09/20 08:00	11/11/20 04:21
60354082008	M-CA-FB-1	Water	11/09/20 13:12	11/11/20 04:21
60354082009	M-CA-MS-1 (M-MW-11D)	Water	11/09/20 12:15	11/11/20 04:21
60354082010	M-CA-MSD-1 (M-MW-11D)	Water	11/09/20 12:15	11/11/20 04:21

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 MEC-CA

Pace Project No.: 60354082

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60354082001	M-MW-11S	EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JDE	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354082002	M-MW-11D	EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JDE	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354082003	M-TP-1	EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JDE	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354082004	M-TP-2	EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JDE	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354082005	M-MW-9	EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JDE	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354082006	M-MW-10	EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JDE	2	PASI-K

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60354082007	M-CA-DUP-1	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JDE	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
60354082008	M-CA-FB-1	SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JLH	11	PASI-K
		EPA 200.8	JDE	2	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
60354082009	M-CA-MS-1 (M-MW-11D)	EPA 904.0	VAL	1	PASI-PA
		EPA 903.1	MK1	1	PASI-PA
60354082010	M-CA-MSD-1 (M-MW-11D)	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-MW-11S **Lab ID: 60354082001** Collected: 11/09/20 13:30 Received: 11/11/20 04:21 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	635	ug/L	5.0	1.8	1	12/01/20 17:41	12/03/20 07:45	7440-39-3	
Boron	220	ug/L	100	11.7	1	12/01/20 17:41	12/03/20 07:45	7440-42-8	
Calcium	281000	ug/L	200	32.4	1	12/01/20 17:41	12/03/20 07:45	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	12/01/20 17:41	12/03/20 07:45	7440-48-4	
Iron	40700	ug/L	50.0	26.8	1	12/01/20 17:41	12/03/20 07:45	7439-89-6	
Lithium	14.8	ug/L	10.0	4.6	1	12/01/20 17:41	12/03/20 07:45	7439-93-2	
Magnesium	60500	ug/L	50.0	19.7	1	12/01/20 17:41	12/03/20 07:45	7439-95-4	
Manganese	2750	ug/L	5.0	0.97	1	12/01/20 17:41	12/03/20 07:45	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	12/01/20 17:41	12/03/20 07:45	7439-98-7	
Potassium	7180	ug/L	500	189	1	12/01/20 17:41	12/03/20 07:45	7440-09-7	
Sodium	16100	ug/L	500	107	1	12/01/20 17:41	12/03/20 07:45	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	3.8	ug/L	1.0	0.086	1	12/02/20 13:16	12/04/20 14:37	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	12/02/20 13:16	12/04/20 14:37	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	1030	mg/L	60.0	25.2	1		11/16/20 14:01		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	960	mg/L	13.3	13.3	1		11/16/20 08:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	12.8	mg/L	1.0	0.39	1		12/03/20 18:18	16887-00-6	
Fluoride	0.31	mg/L	0.20	0.075	1		12/03/20 18:18	16984-48-8	
Sulfate	0.47J	mg/L	1.0	0.28	1		12/03/20 18:18	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-MW-11D **Lab ID: 60354082002** Collected: 11/09/20 12:15 Received: 11/11/20 04:21 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	155	ug/L	5.0	1.8	1	12/01/20 17:41	12/03/20 07:48	7440-39-3	
Boron	9060	ug/L	100	11.7	1	12/01/20 17:41	12/03/20 07:48	7440-42-8	
Calcium	239000	ug/L	200	32.4	1	12/01/20 17:41	12/03/20 07:48	7440-70-2	M1
Cobalt	<1.5	ug/L	5.0	1.5	1	12/01/20 17:41	12/03/20 07:48	7440-48-4	
Iron	24700	ug/L	50.0	26.8	1	12/01/20 17:41	12/03/20 07:48	7439-89-6	
Lithium	49.6	ug/L	10.0	4.6	1	12/01/20 17:41	12/03/20 07:48	7439-93-2	
Magnesium	59400	ug/L	50.0	19.7	1	12/01/20 17:41	12/03/20 07:48	7439-95-4	
Manganese	954	ug/L	5.0	0.97	1	12/01/20 17:41	12/03/20 07:48	7439-96-5	
Molybdenum	236	ug/L	20.0	1.7	1	12/01/20 17:41	12/03/20 07:48	7439-98-7	
Potassium	7360	ug/L	500	189	1	12/01/20 17:41	12/03/20 07:48	7440-09-7	
Sodium	40600	ug/L	500	107	1	12/01/20 17:41	12/03/20 07:48	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	11.7	ug/L	1.0	0.086	1	12/02/20 13:16	12/04/20 14:38	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	12/02/20 13:16	12/04/20 14:38	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	554	mg/L	20.0	8.4	1		11/16/20 12:40		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1120	mg/L	13.3	13.3	1		11/16/20 08:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	32.6	mg/L	5.0	1.9	5		12/03/20 19:15	16887-00-6	
Fluoride	0.43	mg/L	0.20	0.075	1		12/03/20 18:32	16984-48-8	
Sulfate	360	mg/L	50.0	13.9	50		12/03/20 19:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-TP-1 **Lab ID: 60354082003** Collected: 11/09/20 13:15 Received: 11/11/20 04:21 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	360	ug/L	5.0	1.8	1	12/01/20 17:41	12/03/20 07:55	7440-39-3	
Boron	532	ug/L	100	11.7	1	12/01/20 17:41	12/03/20 07:55	7440-42-8	
Calcium	72800	ug/L	200	32.4	1	12/01/20 17:41	12/03/20 07:55	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	12/01/20 17:41	12/03/20 07:55	7440-48-4	
Iron	3600	ug/L	50.0	26.8	1	12/01/20 17:41	12/03/20 07:55	7439-89-6	
Lithium	19.5	ug/L	10.0	4.6	1	12/01/20 17:41	12/03/20 07:55	7439-93-2	
Magnesium	30700	ug/L	50.0	19.7	1	12/01/20 17:41	12/03/20 07:55	7439-95-4	
Manganese	66.6	ug/L	5.0	0.97	1	12/01/20 17:41	12/03/20 07:55	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	12/01/20 17:41	12/03/20 07:55	7439-98-7	
Potassium	3140	ug/L	500	189	1	12/01/20 17:41	12/03/20 07:55	7440-09-7	
Sodium	44300	ug/L	500	107	1	12/01/20 17:41	12/03/20 07:55	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	21.1	ug/L	1.0	0.086	1	12/02/20 13:16	12/04/20 14:46	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	12/02/20 13:16	12/04/20 14:46	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	410	mg/L	20.0	8.4	1		11/16/20 12:53		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	408	mg/L	10.0	10.0	1		11/16/20 08:19		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	13.1	mg/L	5.0	1.9	5		11/30/20 22:55	16887-00-6	
Fluoride	0.38	mg/L	0.20	0.075	1		11/30/20 22:39	16984-48-8	
Sulfate	1.0J	mg/L	1.0	0.28	1		11/30/20 22:39	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-TP-2 **Lab ID: 60354082004** Collected: 11/09/20 09:15 Received: 11/11/20 04:21 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	72.1	ug/L	5.0	1.8	1	12/01/20 17:41	12/03/20 07:58	7440-39-3	
Boron	2930	ug/L	100	11.7	1	12/01/20 17:41	12/03/20 07:58	7440-42-8	
Calcium	237000	ug/L	200	32.4	1	12/01/20 17:41	12/03/20 07:58	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	12/01/20 17:41	12/03/20 07:58	7440-48-4	
Iron	16500	ug/L	50.0	26.8	1	12/01/20 17:41	12/03/20 07:58	7439-89-6	
Lithium	51.3	ug/L	10.0	4.6	1	12/01/20 17:41	12/03/20 07:58	7439-93-2	
Magnesium	63700	ug/L	50.0	19.7	1	12/01/20 17:41	12/03/20 07:58	7439-95-4	
Manganese	619	ug/L	5.0	0.97	1	12/01/20 17:41	12/03/20 07:58	7439-96-5	
Molybdenum	9.5J	ug/L	20.0	1.7	1	12/01/20 17:41	12/03/20 07:58	7439-98-7	
Potassium	8830	ug/L	500	189	1	12/01/20 17:41	12/03/20 07:58	7440-09-7	
Sodium	214000	ug/L	500	107	1	12/01/20 17:41	12/03/20 07:58	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	3.8	ug/L	1.0	0.086	1	12/02/20 13:16	12/04/20 14:47	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	12/02/20 13:16	12/04/20 14:47	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	410	mg/L	20.0	8.4	1		11/16/20 13:00		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1720	mg/L	20.0	20.0	1		11/16/20 08:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	285	mg/L	50.0	19.4	50		11/30/20 23:26	16887-00-6	
Fluoride	0.31	mg/L	0.20	0.075	1		11/30/20 23:10	16984-48-8	
Sulfate	541	mg/L	50.0	13.9	50		11/30/20 23:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-MW-9 **Lab ID: 60354082005** Collected: 11/09/20 12:45 Received: 11/11/20 04:21 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	227	ug/L	5.0	1.8	1	12/01/20 17:41	12/03/20 08:25	7440-39-3	
Boron	3930	ug/L	100	11.7	1	12/01/20 17:41	12/03/20 08:25	7440-42-8	
Calcium	126000	ug/L	200	32.4	1	12/01/20 17:41	12/03/20 08:25	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	12/01/20 17:41	12/03/20 08:25	7440-48-4	
Iron	11800	ug/L	50.0	26.8	1	12/01/20 17:41	12/03/20 08:25	7439-89-6	
Lithium	16.7	ug/L	10.0	4.6	1	12/01/20 17:41	12/03/20 08:25	7439-93-2	
Magnesium	43900	ug/L	50.0	19.7	1	12/01/20 17:41	12/03/20 08:25	7439-95-4	
Manganese	301	ug/L	5.0	0.97	1	12/01/20 17:41	12/03/20 08:25	7439-96-5	
Molybdenum	31.9	ug/L	20.0	1.7	1	12/01/20 17:41	12/03/20 08:25	7439-98-7	
Potassium	4830	ug/L	500	189	1	12/01/20 17:41	12/03/20 08:25	7440-09-7	
Sodium	42000	ug/L	500	107	1	12/01/20 17:41	12/03/20 08:25	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	15.4	ug/L	1.0	0.086	1	12/02/20 13:16	12/04/20 14:48	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	12/02/20 13:16	12/04/20 14:48	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	383	mg/L	20.0	8.4	1		11/16/20 13:05		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	683	mg/L	10.0	10.0	1		11/16/20 08:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	38.0	mg/L	5.0	1.9	5		12/01/20 09:36	16887-00-6	
Fluoride	0.36	mg/L	0.20	0.075	1		11/30/20 23:41	16984-48-8	
Sulfate	193	mg/L	20.0	5.6	20		11/30/20 23:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-MW-10 **Lab ID: 60354082006** Collected: 11/09/20 11:10 Received: 11/11/20 04:21 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	161	ug/L	5.0	1.8	1	12/01/20 17:41	12/03/20 08:28	7440-39-3	
Boron	2180	ug/L	100	11.7	1	12/01/20 17:41	12/03/20 08:28	7440-42-8	
Calcium	300000	ug/L	200	32.4	1	12/01/20 17:41	12/03/20 08:28	7440-70-2	
Cobalt	8.2	ug/L	5.0	1.5	1	12/01/20 17:41	12/03/20 08:28	7440-48-4	
Iron	11600	ug/L	50.0	26.8	1	12/01/20 17:41	12/03/20 08:28	7439-89-6	
Lithium	46.0	ug/L	10.0	4.6	1	12/01/20 17:41	12/03/20 08:28	7439-93-2	
Magnesium	81000	ug/L	50.0	19.7	1	12/01/20 17:41	12/03/20 08:28	7439-95-4	
Manganese	885	ug/L	5.0	0.97	1	12/01/20 17:41	12/03/20 08:28	7439-96-5	
Molybdenum	3.1J	ug/L	20.0	1.7	1	12/01/20 17:41	12/03/20 08:28	7439-98-7	
Potassium	10700	ug/L	500	189	1	12/01/20 17:41	12/03/20 08:28	7440-09-7	
Sodium	103000	ug/L	500	107	1	12/01/20 17:41	12/03/20 08:28	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	8.3	ug/L	1.0	0.086	1	12/02/20 13:16	12/04/20 14:50	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	12/02/20 13:16	12/04/20 14:50	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	612	mg/L	20.0	8.4	1		11/16/20 13:13		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1810	mg/L	20.0	20.0	1		11/16/20 08:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	16.6	mg/L	1.0	0.39	1		12/01/20 00:13	16887-00-6	
Fluoride	0.20J	mg/L	0.20	0.075	1		12/01/20 00:13	16984-48-8	
Sulfate	710	mg/L	100	27.8	100		12/01/20 09:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-CA-DUP-1 **Lab ID: 60354082007** Collected: 11/09/20 08:00 Received: 11/11/20 04:21 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	160	ug/L	5.0	1.8	1	12/01/20 17:41	12/03/20 08:31	7440-39-3	
Boron	2160	ug/L	100	11.7	1	12/01/20 17:41	12/03/20 08:31	7440-42-8	
Calcium	297000	ug/L	200	32.4	1	12/01/20 17:41	12/03/20 08:31	7440-70-2	
Cobalt	7.7	ug/L	5.0	1.5	1	12/01/20 17:41	12/03/20 08:31	7440-48-4	
Iron	11700	ug/L	50.0	26.8	1	12/01/20 17:41	12/03/20 08:31	7439-89-6	
Lithium	47.1	ug/L	10.0	4.6	1	12/01/20 17:41	12/03/20 08:31	7439-93-2	
Magnesium	81100	ug/L	50.0	19.7	1	12/01/20 17:41	12/03/20 08:31	7439-95-4	
Manganese	892	ug/L	5.0	0.97	1	12/01/20 17:41	12/03/20 08:31	7439-96-5	
Molybdenum	2.7J	ug/L	20.0	1.7	1	12/01/20 17:41	12/03/20 08:31	7439-98-7	
Potassium	10800	ug/L	500	189	1	12/01/20 17:41	12/03/20 08:31	7440-09-7	
Sodium	103000	ug/L	500	107	1	12/01/20 17:41	12/03/20 08:31	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	8.2	ug/L	1.0	0.086	1	12/02/20 13:16	12/04/20 14:51	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	12/02/20 13:16	12/04/20 14:51	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	628	mg/L	20.0	8.4	1		11/16/20 13:20		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1710	mg/L	20.0	20.0	1		11/16/20 08:20		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	39.1	mg/L	5.0	1.9	5		12/01/20 01:00	16887-00-6	
Fluoride	0.24	mg/L	0.20	0.075	1		12/01/20 00:44	16984-48-8	
Sulfate	629	mg/L	50.0	13.9	50		12/01/20 01:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-CA-FB-1 Lab ID: 60354082008 Collected: 11/09/20 13:12 Received: 11/11/20 04:21 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	12/01/20 17:41	12/03/20 08:33	7440-39-3	
Boron	<11.7	ug/L	100	11.7	1	12/01/20 17:41	12/03/20 08:33	7440-42-8	
Calcium	233	ug/L	200	32.4	1	12/01/20 17:41	12/03/20 08:33	7440-70-2	B
Cobalt	<1.5	ug/L	5.0	1.5	1	12/01/20 17:41	12/03/20 08:33	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	12/01/20 17:41	12/03/20 08:33	7439-89-6	
Lithium	6.2J	ug/L	10.0	4.6	1	12/01/20 17:41	12/03/20 08:33	7439-93-2	
Magnesium	79.0	ug/L	50.0	19.7	1	12/01/20 17:41	12/03/20 08:33	7439-95-4	
Manganese	<0.97	ug/L	5.0	0.97	1	12/01/20 17:41	12/03/20 08:33	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	12/01/20 17:41	12/03/20 08:33	7439-98-7	
Potassium	<189	ug/L	500	189	1	12/01/20 17:41	12/03/20 08:33	7440-09-7	
Sodium	<107	ug/L	500	107	1	12/01/20 17:41	12/03/20 08:33	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<0.086	ug/L	1.0	0.086	1	12/02/20 13:16	12/04/20 14:53	7440-38-2	
Selenium	<0.18	ug/L	1.0	0.18	1	12/02/20 13:16	12/04/20 14:53	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		11/16/20 13:24		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	7.0	mg/L	5.0	5.0	1		11/16/20 08:20		
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		12/01/20 02:02	16887-00-6	
Fluoride	<0.075	mg/L	0.20	0.075	1		12/01/20 02:02	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		12/01/20 02:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC-CA

Pace Project No.: 60354082

QC Batch:	692098	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: 60354082001, 60354082002, 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008

METHOD BLANK: 2795371 Matrix: Water
Associated Lab Samples: 60354082001, 60354082002, 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	12/02/20 23:10	
Boron	ug/L	<11.7	100	11.7	12/02/20 23:10	
Calcium	ug/L	40.5J	200	32.4	12/02/20 23:10	
Cobalt	ug/L	<1.5	5.0	1.5	12/02/20 23:10	
Iron	ug/L	<26.8	50.0	26.8	12/02/20 23:10	
Lithium	ug/L	<4.6	10.0	4.6	12/02/20 23:10	
Magnesium	ug/L	<19.7	50.0	19.7	12/02/20 23:10	
Manganese	ug/L	<0.97	5.0	0.97	12/02/20 23:10	
Molybdenum	ug/L	<1.7	20.0	1.7	12/02/20 23:10	
Potassium	ug/L	<189	500	189	12/02/20 23:10	
Sodium	ug/L	<107	500	107	12/02/20 23:10	

LABORATORY CONTROL SAMPLE: 2795372

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	994	99	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lithium	ug/L	1000	1020	102	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	1020	102	85-115	
Molybdenum	ug/L	1000	1030	103	85-115	
Potassium	ug/L	10000	10200	102	85-115	
Sodium	ug/L	10000	9930	99	85-115	

MATRIX SPIKE SAMPLE: 2795373

Parameter	Units	60353399028 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	297	1000	1300	100	70-130	
Boron	ug/L	7010	1000	7950	95	70-130	
Calcium	ug/L	173000	10000	180000	68	70-130 M1	
Cobalt	ug/L	4.3J	1000	1020	102	70-130	
Iron	ug/L	3900	10000	13600	97	70-130	
Lithium	ug/L	43.1	1000	1060	102	70-130	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC-CA

Pace Project No.: 60354082

MATRIX SPIKE SAMPLE:		2795373		60353399028		Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Result	% Rec	Limits	Qualifiers	
Magnesium	ug/L	37600	10000	47200	96			70-130		
Manganese	ug/L	1580	1000	2560	99			70-130		
Molybdenum	ug/L	81.2	1000	1120	103			70-130		
Potassium	ug/L	7650	10000	17600	100			70-130		
Sodium	ug/L	54500	10000	64000	95			70-130		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2795374		2795375								
Parameter	Units	60354082002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	155	1000	1000	1160	1150	101	100	70-130	1	20	
Boron	ug/L	9060	1000	1000	10000	9780	98	72	70-130	3	20	
Calcium	ug/L	239000	10000	10000	246000	239000	67	-3	70-130	3	20	M1
Cobalt	ug/L	<1.5	1000	1000	1010	1010	101	101	70-130	0	20	
Iron	ug/L	24700	10000	10000	33900	33100	92	84	70-130	2	20	
Lithium	ug/L	49.6	1000	1000	1070	1060	102	102	70-130	0	20	
Magnesium	ug/L	59400	10000	10000	69500	67400	101	80	70-130	3	20	
Manganese	ug/L	954	1000	1000	1960	1920	101	96	70-130	2	20	
Molybdenum	ug/L	236	1000	1000	1260	1250	102	102	70-130	1	20	
Potassium	ug/L	7360	10000	10000	17500	17200	101	99	70-130	1	20	
Sodium	ug/L	40600	10000	10000	50600	49500	101	89	70-130	2	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC-CA

Pace Project No.: 60354082

QC Batch: 692107 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: 60354082001, 60354082002, 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008

METHOD BLANK: 2795417 Matrix: Water
 Associated Lab Samples: 60354082001, 60354082002, 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.086	1.0	0.086	12/04/20 14:27	
Selenium	ug/L	<0.18	1.0	0.18	12/04/20 14:27	

LABORATORY CONTROL SAMPLE: 2795418

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	35.5	89	85-115	
Selenium	ug/L	40	36.3	91	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2795419 2795420

Parameter	Units	60354082002		2795419		2795420		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.					
Arsenic	ug/L	11.7	40	48.9	40	49.8	40	93	95	70-130	2	20
Selenium	ug/L	<0.18	40	36.7	40	36.8	40	92	92	70-130	0	20

MATRIX SPIKE SAMPLE: 2795421

Parameter	Units	60354082008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	<0.086	40	36.4	91	70-130	
Selenium	ug/L	<0.18	40	36.0	90	70-130	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC-CA

Pace Project No.: 60354082

QC Batch: 689410

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354082001, 60354082002, 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008

METHOD BLANK: 2785628

Matrix: Water

Associated Lab Samples: 60354082001, 60354082002, 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/16/20 11:22	

LABORATORY CONTROL SAMPLE: 2785629

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

SAMPLE DUPLICATE: 2785630

Parameter	Units	60354082002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	554	548	1	10	

SAMPLE DUPLICATE: 2785631

Parameter	Units	60354084007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	223	226	1	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC-CA

Pace Project No.: 60354082

QC Batch:	689440	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60354082001, 60354082002, 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008

METHOD BLANK: 2785734 Matrix: Water

Associated Lab Samples: 60354082001, 60354082002, 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/16/20 08:18	

LABORATORY CONTROL SAMPLE: 2785735

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

SAMPLE DUPLICATE: 2785736

Parameter	Units	60354082002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1120	1150	2	10	

SAMPLE DUPLICATE: 2785737

Parameter	Units	60354084007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2270	2190	3	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC-CA

Pace Project No.: 60354082

QC Batch:	691823	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: 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008

METHOD BLANK: 2794551 Matrix: Water

Associated Lab Samples: 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/30/20 12:56	
Fluoride	mg/L	<0.075	0.20	0.075	11/30/20 12:56	
Sulfate	mg/L	<0.28	1.0	0.28	11/30/20 12:56	

METHOD BLANK: 2795679 Matrix: Water

Associated Lab Samples: 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/01/20 08:27	
Fluoride	mg/L	<0.075	0.20	0.075	12/01/20 08:27	
Sulfate	mg/L	<0.28	1.0	0.28	12/01/20 08:27	

LABORATORY CONTROL SAMPLE: 2794552

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	5.0	100	90-110	

LABORATORY CONTROL SAMPLE: 2795680

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	95	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2794553 2794554

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60353399008 Result	Spike Conc.	Spike Conc.	Conc.								
Chloride	mg/L	4.4	5	5	9.0	9.2	93	98	80-120	2	15		
Fluoride	mg/L	0.31	2.5	2.5	2.7	2.8	96	100	80-120	4	15		
Sulfate	mg/L	11.5	5	5	16.6	16.8	101	105	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.

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC-CA

Pace Project No.: 60354082

MATRIX SPIKE SAMPLE:		2794555					
Parameter	Units	60353399018 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	<0.39	5	4.6	92	80-120	
Fluoride	mg/L	<0.075	2.5	2.3	93	80-120	
Sulfate	mg/L	<0.28	5	4.9	97	80-120	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC-CA

Pace Project No.: 60354082

QC Batch: 692439

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: 60354082001, 60354082002

METHOD BLANK: 2796751

Matrix: Water

Associated Lab Samples: 60354082001, 60354082002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/03/20 07:03	
Fluoride	mg/L	<0.075	0.20	0.075	12/03/20 07:03	
Sulfate	mg/L	<0.28	1.0	0.28	12/03/20 07:03	

METHOD BLANK: 2796805

Matrix: Water

Associated Lab Samples: 60354082001, 60354082002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/20/20 07:57	
Fluoride	mg/L	<0.075	0.20	0.075	11/20/20 07:57	
Sulfate	mg/L	<0.28	1.0	0.28	11/20/20 07:57	

LABORATORY CONTROL SAMPLE: 2796752

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	2.4	98	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

LABORATORY CONTROL SAMPLE: 2796806

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	101	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2796753

2796754

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60354082002 Result	Spike Conc.	Spike Conc.	Spike Conc.								
Chloride	mg/L	32.6	25	25	25	60.4	61.5	111	116	80-120	2	15	
Fluoride	mg/L	0.43	2.5	2.5	2.5	2.9	3.0	97	103	80-120	5	15	
Sulfate	mg/L	360	250	250	250	612	629	101	107	80-120	3	15	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: AMEREN MEC-CA

Pace Project No.: 60354082

MATRIX SPIKE SAMPLE:		2796755					
Parameter	Units	60354800001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2550	2500	4990	98	80-120	
Fluoride	mg/L	ND	500	499	100	80-120	
Sulfate	mg/L	1890	1000	2940	105	80-120	

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

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: M-MW-11S Lab ID: 60354082001 Collected: 11/09/20 13:30 Received: 11/11/20 04:21 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.471 ± 0.331 (0.160) C:NA T:95%	pCi/L	12/10/20 14:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.73 ± 0.596 (0.837) C:70% T:80%	pCi/L	12/10/20 12:14	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-MW-11D **Lab ID: 60354082002** Collected: 11/09/20 12:15 Received: 11/11/20 04:21 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	0.311 ± 0.432 (0.731) C:NA T:92%	pCi/L	12/10/20 14:23	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.85 ± 0.600 (0.812) C:68% T:89%	pCi/L	12/10/20 12:13	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-TP-1 **Lab ID: 60354082003** Collected: 11/09/20 13:15 Received: 11/11/20 04:21 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	0.485 ± 0.364 (0.188) C:NA T:89%	pCi/L	12/10/20 14:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.888 ± 0.414 (0.686) C:74% T:85%	pCi/L	12/10/20 12:14	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-TP-2 **Lab ID: 60354082004** Collected: 11/09/20 09:15 Received: 11/11/20 04:21 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	0.140 ± 0.475 (0.916) C:NA T:99%	pCi/L	12/10/20 14:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.679 ± 0.506 (1.00) C:64% T:85%	pCi/L	12/10/20 12:13	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-MW-9 **Lab ID: 60354082005** Collected: 11/09/20 12:45 Received: 11/11/20 04:21 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	0.725 ± 0.437 (0.179) C:NA T:93%	pCi/L	12/10/20 14:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.06 ± 0.520 (0.896) C:67% T:76%	pCi/L	12/10/20 12:14	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-MW-10 **Lab ID: 60354082006** Collected: 11/09/20 11:10 Received: 11/11/20 04:21 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	0.146 ± 0.454 (0.880) C:NA T:85%	pCi/L	12/10/20 14:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.75 ± 0.603 (0.879) C:71% T:88%	pCi/L	12/10/20 12:13	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: M-CA-DUP-1 Lab ID: 60354082007 Collected: 11/09/20 08:00 Received: 11/11/20 04:21 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	-0.0752 ± 0.532 (1.13) C:NA T:84%	pCi/L	12/10/20 14:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	2.38 ± 0.716 (0.901) C:67% T:84%	pCi/L	12/10/20 12:13	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: M-CA-FB-1 Lab ID: 60354082008 Collected: 11/09/20 13:12 Received: 11/11/20 04:21 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.194 ± 0.296 (0.175) C:NA T:89%	pCi/L	12/10/20 14:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.513 ± 0.475 (0.973) C:62% T:82%	pCi/L	12/10/20 12:14	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-CA-MS-1 (M-MW-11D) **Lab ID: 60354082009** Collected: 11/09/20 12:15 Received: 11/11/20 04:21 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	91.95 %REC ± NA (NA) C:NA T:NA	pCi/L	12/10/20 14:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	97.94 %REC ± NA (NA) C:NA T:NA	pCi/L	12/10/20 12:13	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Sample: M-CA-MSD-1 (M-MW-11D) **Lab ID: 60354082010** Collected: 11/09/20 12:15 Received: 11/11/20 04:21 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	75.50 %REC 19.64 RPD ± NA (NA) C:NA T:NA	pCi/L	12/10/20 14:36	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	76.49 %REC 24.59 RPD ± NA (NA) C:NA T:NA	pCi/L	12/10/20 12:14	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN MEC-CA

Pace Project No.: 60354082

QC Batch: 424208

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: 60354082001, 60354082002, 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008, 60354082009, 60354082010

METHOD BLANK: 2050440

Matrix: Water

Associated Lab Samples: 60354082001, 60354082002, 60354082003, 60354082004, 60354082005, 60354082006, 60354082007, 60354082008, 60354082009, 60354082010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.159 ± 0.316 (0.698) C:72% T:79%	pCi/L	12/10/20 12:14	

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.

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: AMEREN MEC-CA

Pace Project No.: 60354082

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.

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60354082001	M-MW-11S	EPA 200.7	692098	EPA 200.7	692249
60354082002	M-MW-11D	EPA 200.7	692098	EPA 200.7	692249
60354082003	M-TP-1	EPA 200.7	692098	EPA 200.7	692249
60354082004	M-TP-2	EPA 200.7	692098	EPA 200.7	692249
60354082005	M-MW-9	EPA 200.7	692098	EPA 200.7	692249
60354082006	M-MW-10	EPA 200.7	692098	EPA 200.7	692249
60354082007	M-CA-DUP-1	EPA 200.7	692098	EPA 200.7	692249
60354082008	M-CA-FB-1	EPA 200.7	692098	EPA 200.7	692249
60354082001	M-MW-11S	EPA 200.8	692107	EPA 200.8	692451
60354082002	M-MW-11D	EPA 200.8	692107	EPA 200.8	692451
60354082003	M-TP-1	EPA 200.8	692107	EPA 200.8	692451
60354082004	M-TP-2	EPA 200.8	692107	EPA 200.8	692451
60354082005	M-MW-9	EPA 200.8	692107	EPA 200.8	692451
60354082006	M-MW-10	EPA 200.8	692107	EPA 200.8	692451
60354082007	M-CA-DUP-1	EPA 200.8	692107	EPA 200.8	692451
60354082008	M-CA-FB-1	EPA 200.8	692107	EPA 200.8	692451
60354082001	M-MW-11S	EPA 903.1	424207		
60354082002	M-MW-11D	EPA 903.1	424207		
60354082003	M-TP-1	EPA 903.1	424207		
60354082004	M-TP-2	EPA 903.1	424207		
60354082005	M-MW-9	EPA 903.1	424207		
60354082006	M-MW-10	EPA 903.1	424207		
60354082007	M-CA-DUP-1	EPA 903.1	424207		
60354082008	M-CA-FB-1	EPA 903.1	424207		
60354082009	M-CA-MS-1 (M-MW-11D)	EPA 903.1	424207		
60354082010	M-CA-MSD-1 (M-MW-11D)	EPA 903.1	424207		
60354082001	M-MW-11S	EPA 904.0	424208		
60354082002	M-MW-11D	EPA 904.0	424208		
60354082003	M-TP-1	EPA 904.0	424208		
60354082004	M-TP-2	EPA 904.0	424208		
60354082005	M-MW-9	EPA 904.0	424208		
60354082006	M-MW-10	EPA 904.0	424208		
60354082007	M-CA-DUP-1	EPA 904.0	424208		
60354082008	M-CA-FB-1	EPA 904.0	424208		
60354082009	M-CA-MS-1 (M-MW-11D)	EPA 904.0	424208		
60354082010	M-CA-MSD-1 (M-MW-11D)	EPA 904.0	424208		
60354082001	M-MW-11S	SM 2320B	689410		
60354082002	M-MW-11D	SM 2320B	689410		
60354082003	M-TP-1	SM 2320B	689410		
60354082004	M-TP-2	SM 2320B	689410		
60354082005	M-MW-9	SM 2320B	689410		
60354082006	M-MW-10	SM 2320B	689410		
60354082007	M-CA-DUP-1	SM 2320B	689410		
60354082008	M-CA-FB-1	SM 2320B	689410		
60354082001	M-MW-11S	SM 2540C	689440		
60354082002	M-MW-11D	SM 2540C	689440		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN MEC-CA

Pace Project No.: 60354082

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60354082003	M-TP-1	SM 2540C	689440		
60354082004	M-TP-2	SM 2540C	689440		
60354082005	M-MW-9	SM 2540C	689440		
60354082006	M-MW-10	SM 2540C	689440		
60354082007	M-CA-DUP-1	SM 2540C	689440		
60354082008	M-CA-FB-1	SM 2540C	689440		
60354082001	M-MW-11S	EPA 300.0	692439		
60354082002	M-MW-11D	EPA 300.0	692439		
60354082003	M-TP-1	EPA 300.0	691823		
60354082004	M-TP-2	EPA 300.0	691823		
60354082005	M-MW-9	EPA 300.0	691823		
60354082006	M-MW-10	EPA 300.0	691823		
60354082007	M-CA-DUP-1	EPA 300.0	691823		
60354082008	M-CA-FB-1	EPA 300.0	691823		

REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60354082



Client Name: Golder 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 2 p/c

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 15.1 Corr. Factor 40.2 Corrected 15.3

Date and initials of person examining contents: 11-11-2020 LC

Temperature should be above freezing to 6°C 15.8, 17.2, 1.8, 1.3, 0.7 16.0, 17.4, 2.0, 1.5, 0.9

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	<u>all coolers out of temp</u>
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<u>had only Radium samples</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) LOT# <u>(007) > 3</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 ichurch at 11:13 am, 11/13/20

Project Manager Review: _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

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 Drive, Ste 260 Ballwin, MO 63021		Copy To: Ryan Feldmann/Eric Schneider		Company Name:	
Email To: jeffrey_ingram@golder.com		Purchase Order No.:		Address:	
Phone: 636-724-9191 Fax: 636-724-9323		Project Name: Ameren MEC-CA Meramec Energy Center		Pace Quote Reference:	
Requested Due Date/TAT: Standard		Project Number: 153-140602.0004A (COC #14)		Pace Project Manager: Jamie Church	
				Pace Profile #: 9285	

ITEM #	Valid Matrix Codes	COLLECTED		SAMPLE TEMP AT COLLECTION		# OF CONTAINERS	Preservatives	Analysis Test ↑	Requested Analysis Filtered (Y/N)	Temp in °C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Samples Inadeq (Y/N)
		DATE	TIME	DATE	TIME								
1	M-MW-11S			1330									
2	M-MW-11D			1215									
3	M-TP-1			1315									
4	M-TP-2			11/9/20	0915								
5	M-MW-9												
6	M-MW-10												
7	M-CA-DUP-1												
8	M-CA-FB-1												
9	M-CA-MS-1 (M-MW-11D)												
10	M-CA-MSD-1 (M-MW-11D)												
11													
12													

SAMPLE ID (A-Z, 0-9 /-)
Sample IDs MUST BE UNIQUE

6035-41082

Pace Project No. / Lab I.D.

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Brendan Talbot Golder	11/10/2020	1610	RZ apt / PC	11-11-20	0921	15.3	N	Y	Y
						19.9	↓	Y	Y
						2.0	Y		Y
						1.5	Y		Y

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER: <i>Brendan Talbot</i>	DATE Signed (MM/DD/YYYY): <i>11/10/2020</i>
SIGNATURE of SAMPLER: <i>Brendan Talbot</i>	



GOLDER

MEMORANDUM

DATE December 14, 2020

Project No. 153140602

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

**DATA VALIDATION SUMMARY, MERAMEC ENERGY CENTER – MEC-CA – CORRECTIVE ACTION
SAMPLING - DATA PACKAGE 60354082**

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 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 matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J).
- When duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates Inc.
 Project Name: Ameren - MEC - MEC-CA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140602
 Validation Date: 12/14/2020

Laboratory: Pace Analytical Services, LLC

SDG #: 60354082

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions); 903.1/904.0 (Radium-226/228)

Matrix: Air Soil/Sed. Water Waste _____

Sample Names M-MW-11S, M-MW-11D, M-TP-1, M-TP-2, M-MW-9, M-MW-10, M-CA-DUP-1, M-CA-FB-1, M-CA-MS-1 (M-MW-11D), M-CA-MSD-1 (M-MW-11D)

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

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>11/09/2020</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>BTT/JSI</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"/>	_____

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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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 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"/>	M-CA-DUP-1 @ M-MW-10
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% (<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"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments/Notes:

All coolers out of temp only contained radium.

Sulfate and chloride were diluted in several samples, no qualification necessary.

Method Blanks:

2795371: Calcium (40.5 J), associated with samples -001 through -008. Sample results >10x the blank result and/or over the reporting limit, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Field Blanks:

M-CA-FB-1 @ M-TP-1: Calcium (233), Lithium (6.2 J), Magnesium (79.0), TDS (7.0), Radium-226 (0.194 ± 0.296).

For sample results >10x the blank result and/or over the reporting limit, no qualification necessary.

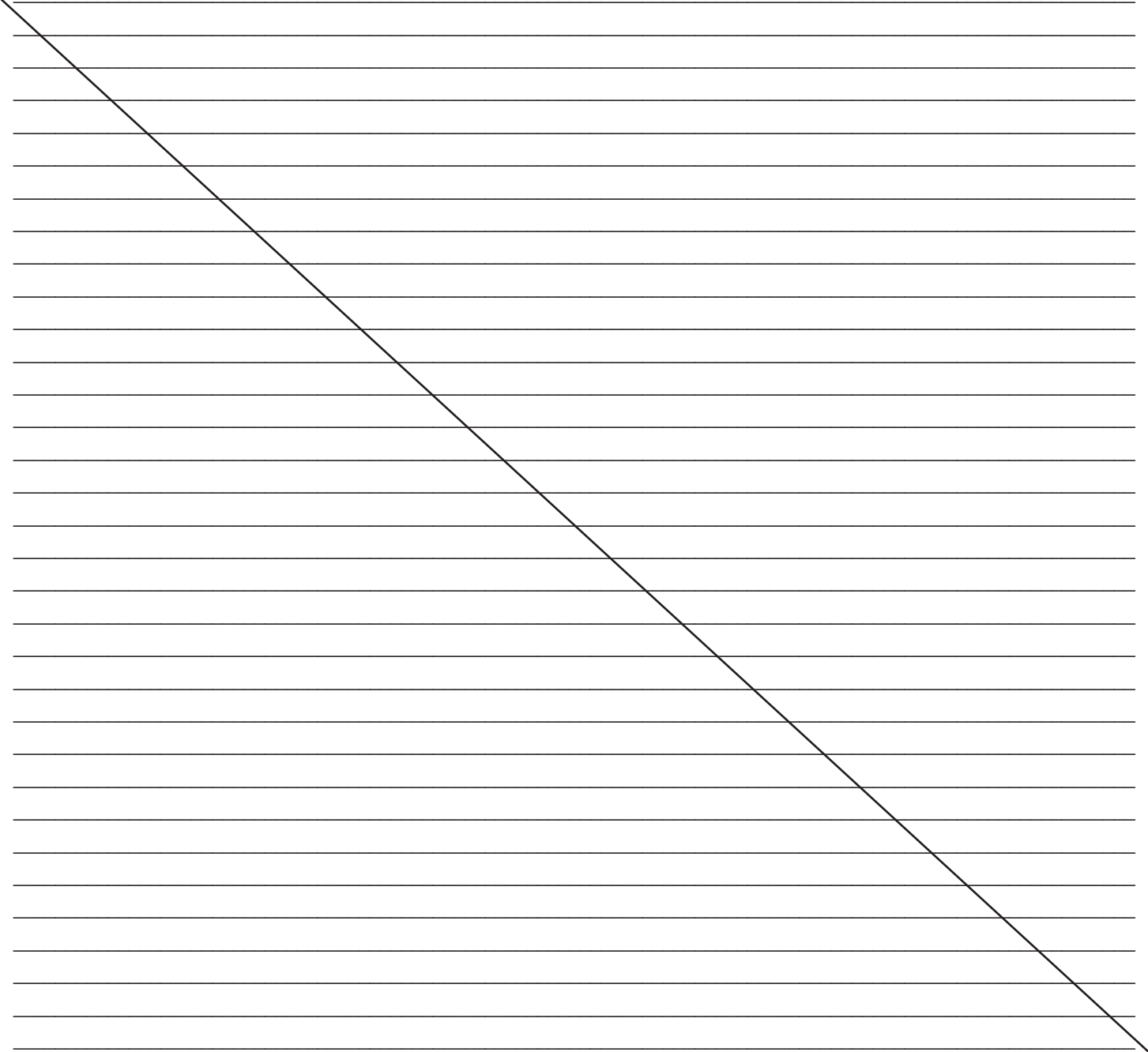
Duplicates:

M-CA-DUP-1: RPD exceeds limit (20%) for Chloride (80.8%), Radium-228 (30.5%)

MS/MSD:

2795373: MS % recovery low for Calcium. MS performed on unrelated sample, no qualification necessary.

2795374/2795375: MS/MSD % recovery low for Calcium, associated with sample 60354082002.



QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
M-MW-10	Chloride	16.6	J	DUP RPD exceeds limit
"	Radium-228	1.75 ± 0.603	J	"
M-CA-DUP-1	Chloride	39.1	J	"
"	Radium-228	2.38 ± 0.716	J	"
M-MW-11D	Calcium	239000	J	MS/MSD % recovery low
M-TP-1	Radium-226	0.485 ± 0.364	J	Detected in FB

Signature: _____ *Ann Mulhearty* _____ Date: 12/14/2020

APPENDIX C

**November-December 2019
Assessment Monitoring Statistical
Evaluation**

TECHNICAL MEMORANDUM

DATE March 2, 2020 **Project No.** 153-140601

TO Bill Kutosky
Ameren Missouri

CC Susan Knowles, Craig Giesmann, Paul Pike, Charlie Henderson

FROM Jeffrey Ingram, Sean Paulsen, Mark Haddock **EMAIL** JIngram@Golder.com

ASSESSMENT MONITORING STATISTICAL EVALUATION MULTI-UNIT SURFACE IMPOUNDMENT NETWORK, MERAMEC ENERGY CENTER, ST LOUIS COUNTY, MISSOURI

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation for the November - December 2019 sampling event at the Multi-unit Surface Impoundment Network of the Meramec Energy Center located in St. Louis 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 Appendix IV parameters (**Appendix A** and **Appendix B**).

During the August 2019 sampling event, monitoring wells AMW-1 (MW-9) and AMW-2 (MW-10) were added to the Detection and Assessment monitoring well networks to satisfy the requirements of §257.95(g)(1) of the CCR Rule, which require at least one (1) additional monitoring well be installed at the downgradient facility boundary. The November - December 2019 sampling event is the first event during which monitoring wells AMW-1 (MW-9) and AMW-2 (MW-10) were statistically evaluated for SSLs. As outlined in the Statistical Analysis Plan (SAP) for this site, which is a portion of the Groundwater Monitoring Plan (GMP), a minimum of four (4) samples are required to complete an SSL evaluation.

The Appendix IV constituents were evaluated for SSLs using the methods and procedures outlined in the SAP. The following outliers were removed prior to the calculation of confidence limits:

- Arsenic
 - MW-3 at Non-detect on 3/29/2016: Value was statistically lower than other values at the same well. The low result has not been confirmed during subsequent sampling events.
- Fluoride
 - MW-2 at Non-detect on 6/14/2017 and 4/4/2018: Values were statistically lower than other values at the same well. The low results have not been confirmed during subsequent sampling events.
 - MW-4 at Non-detect on 4/4/2018: Value was statistically lower than other values at the same well. The low result has not been confirmed during subsequent sampling events.

- Radium (226 + 228)
 - MW-1 at 1.430 picocuries per liter (pCi/L) on 7/18/2016: Value was statically higher than the other values at the same well. The high result has not been confirmed during subsequent sampling events.

Two (2) new SSLs were identified based on the November - December 2019 sampling results, including Arsenic at monitoring well AMW-1 (MW-9) and Lithium at MW-7. A summary of the SSLs is as follows:

- Arsenic at MW-4, MW-5, and AMW-1 (MW-9)
- Lithium at MW-6 and MW-7
- Molybdenum at MW-6, MW-7, and MW-8

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.
Project Geologist



Sean Paulsen, P.G.
Associate, Senior Consultant

JSI/SCP

Enclosures:

- Table 1 – MEC Groundwater Protection Standards
- Appendix A – Sanitas Confidence Interval Statistical Output
- Appendix B – Sanitas Trending Confidence Bands Statistical Output

**Table 1 - MEC Groundwater Protection Standards
MEC Surface Impoundments
Meramec 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	10	2.319
Barium	µg/L	2000	2000	566
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	2.517
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.5214
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	40	20.3
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.676
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 August 2019 from monitoring wells BMW-1 and BMW-2.

Prepared by: JSI

Checked by: EMS

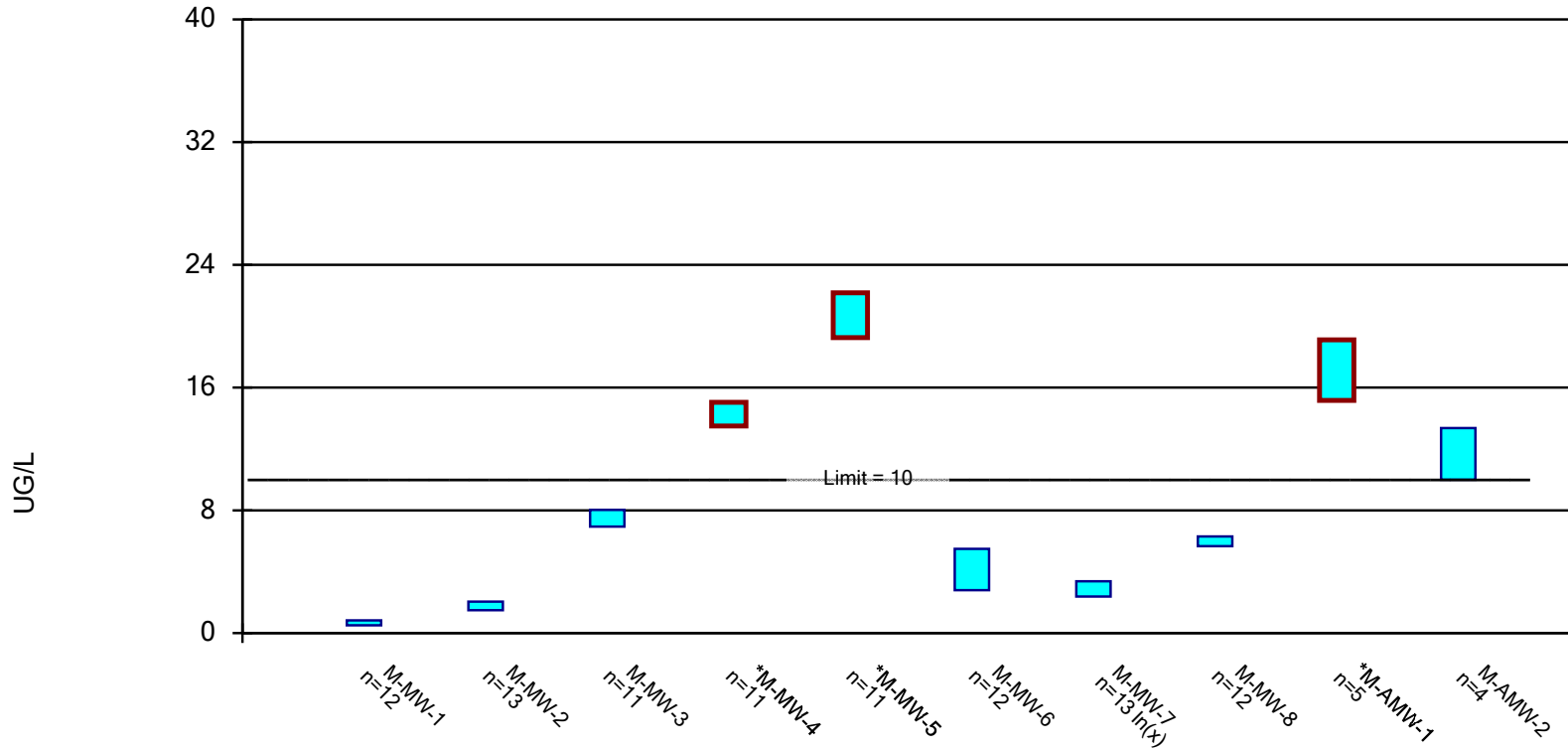
Reviewed by: SCP

APPENDIX A

**Sanitas Confidence Interval
Statistical Output**

Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

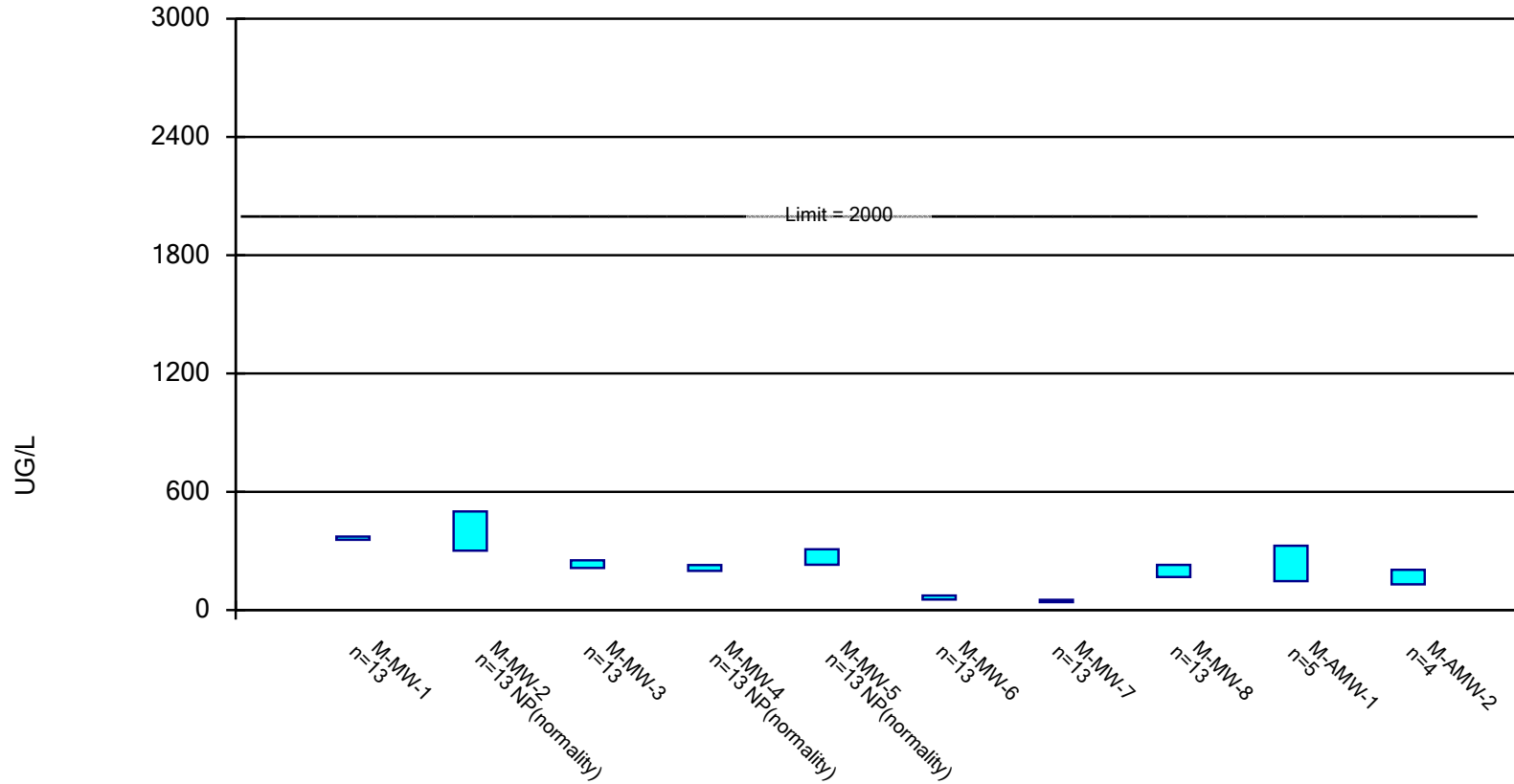


Constituent: ARSENIC, TOTAL Analysis Run 2/18/2020 4:44 PM

Meramec E.C. Client: Ameren Data: MEC 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.

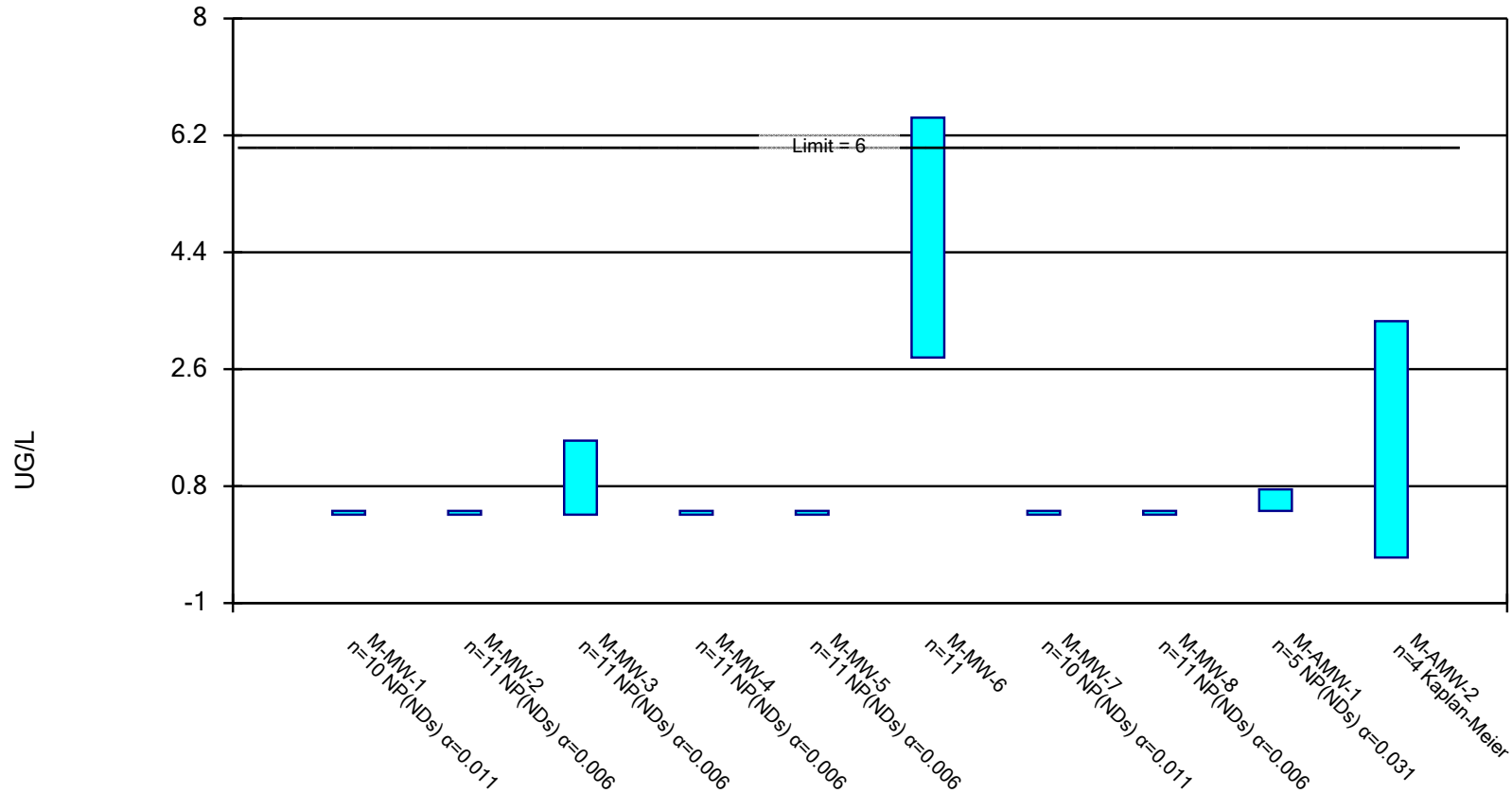


Constituent: BARIUM, TOTAL Analysis Run 2/18/2020 4:44 PM

Meramec E.C. Client: Ameren Data: MEC 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.

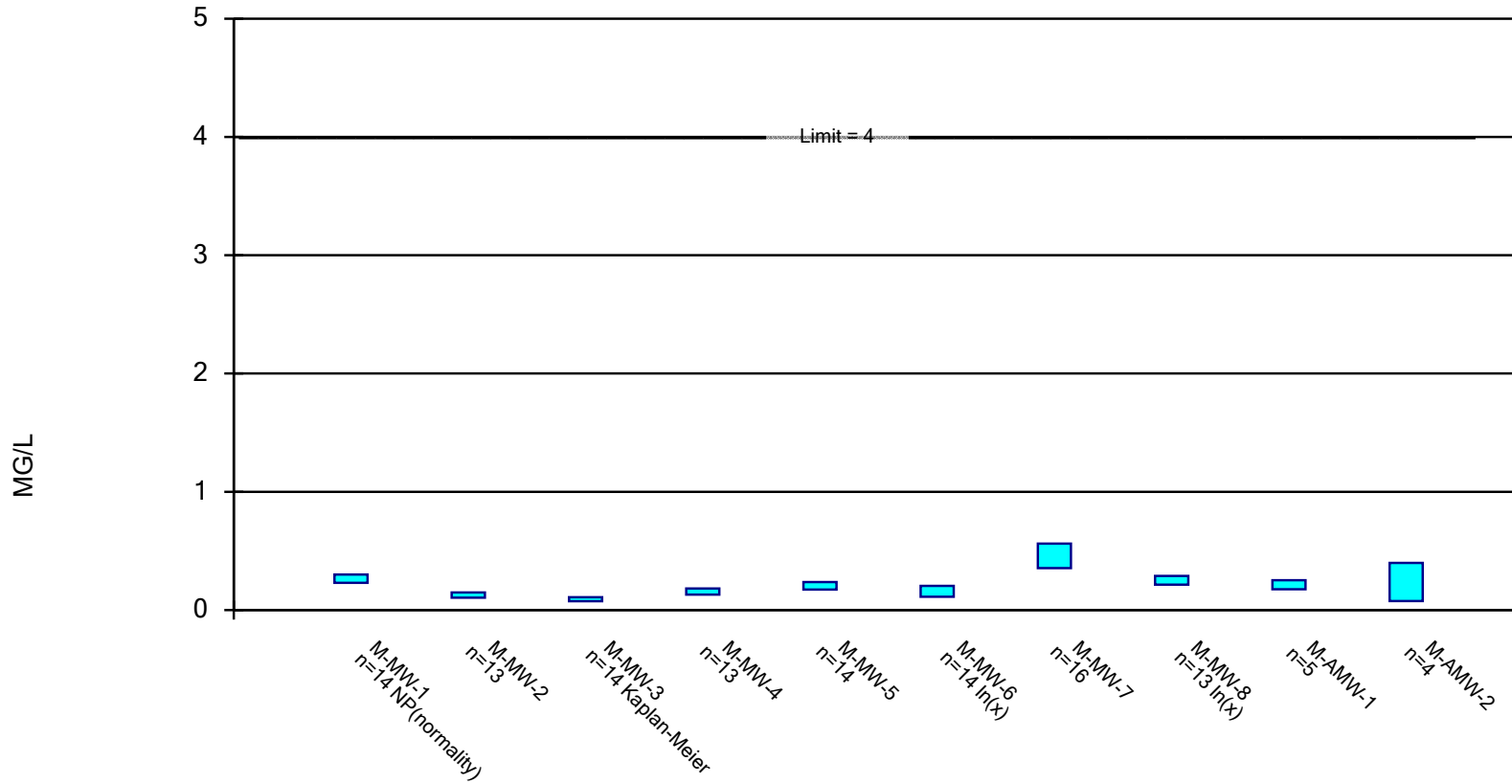


Constituent: COBALT, TOTAL Analysis Run 2/18/2020 4:44 PM

Meramec E.C. Client: Ameren Data: MEC Data

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

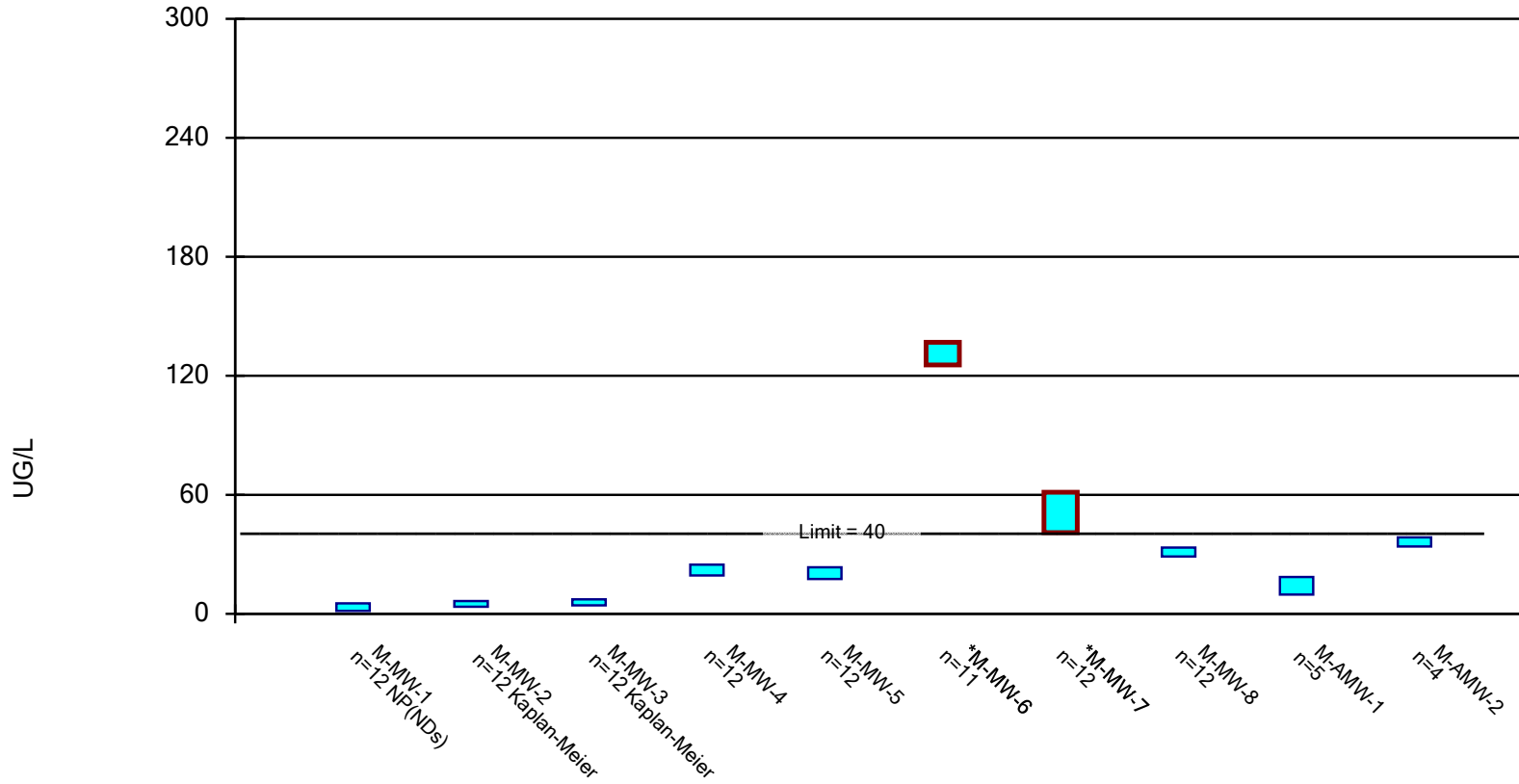


Constituent: FLUORIDE, TOTAL Analysis Run 2/18/2020 4:44 PM

Meramec E.C. Client: Ameren Data: MEC 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.

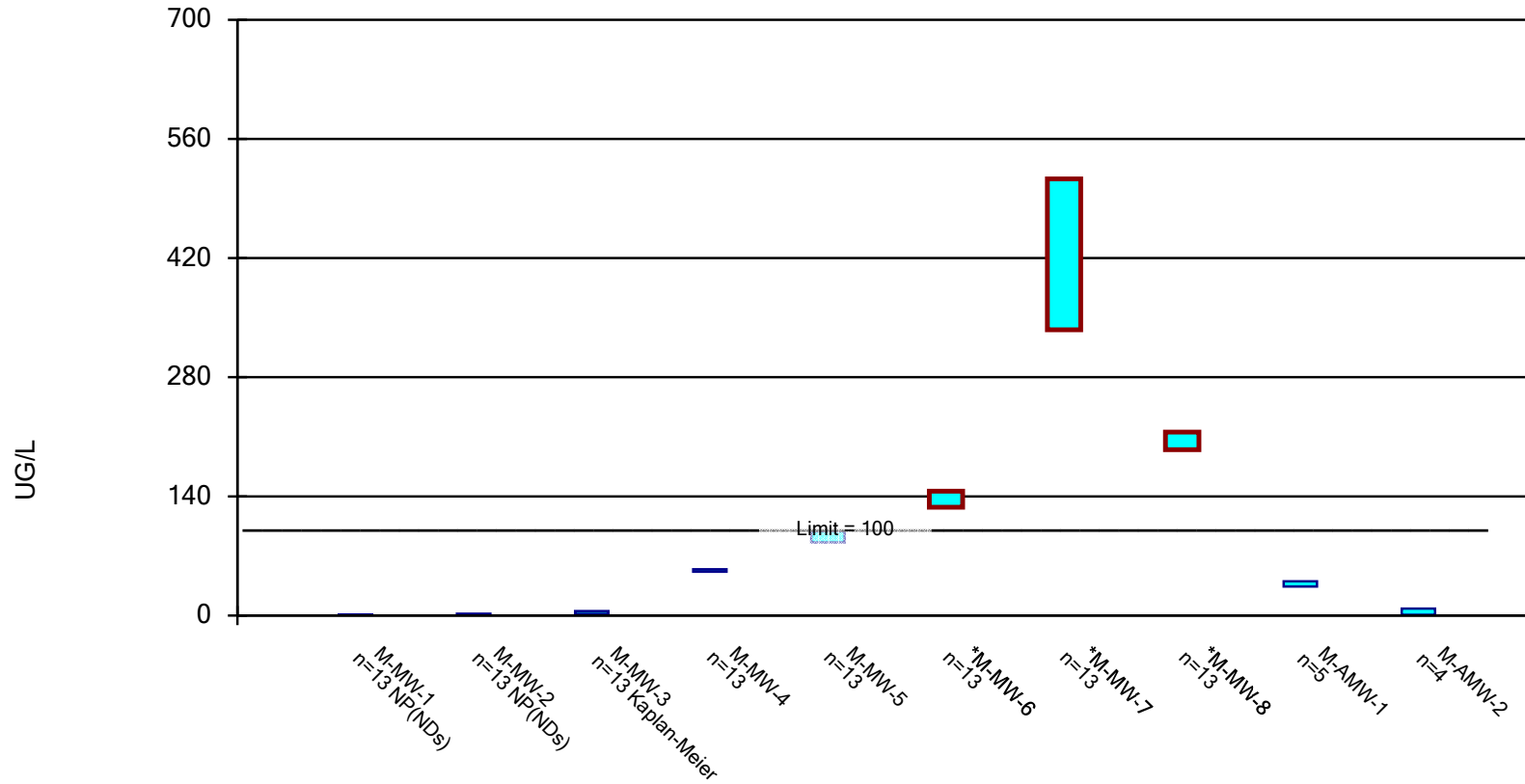


Constituent: LITHIUM, TOTAL Analysis Run 2/18/2020 4:44 PM

Meramec E.C. Client: Ameren Data: MEC 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.

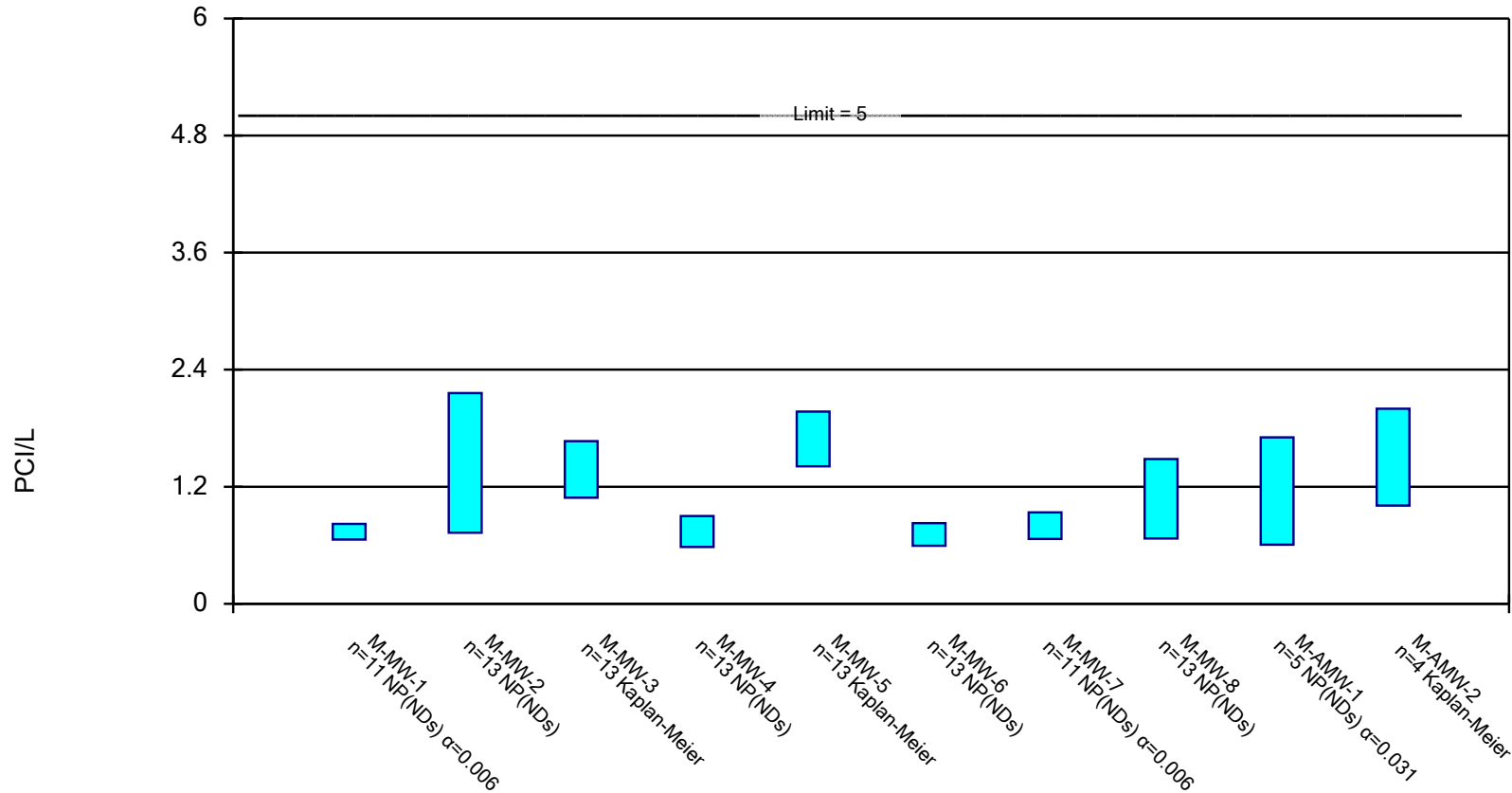


Constituent: MOLYBDENUM, TOTAL Analysis Run 2/18/2020 4:44 PM

Meramec E.C. Client: Ameren Data: MEC 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.

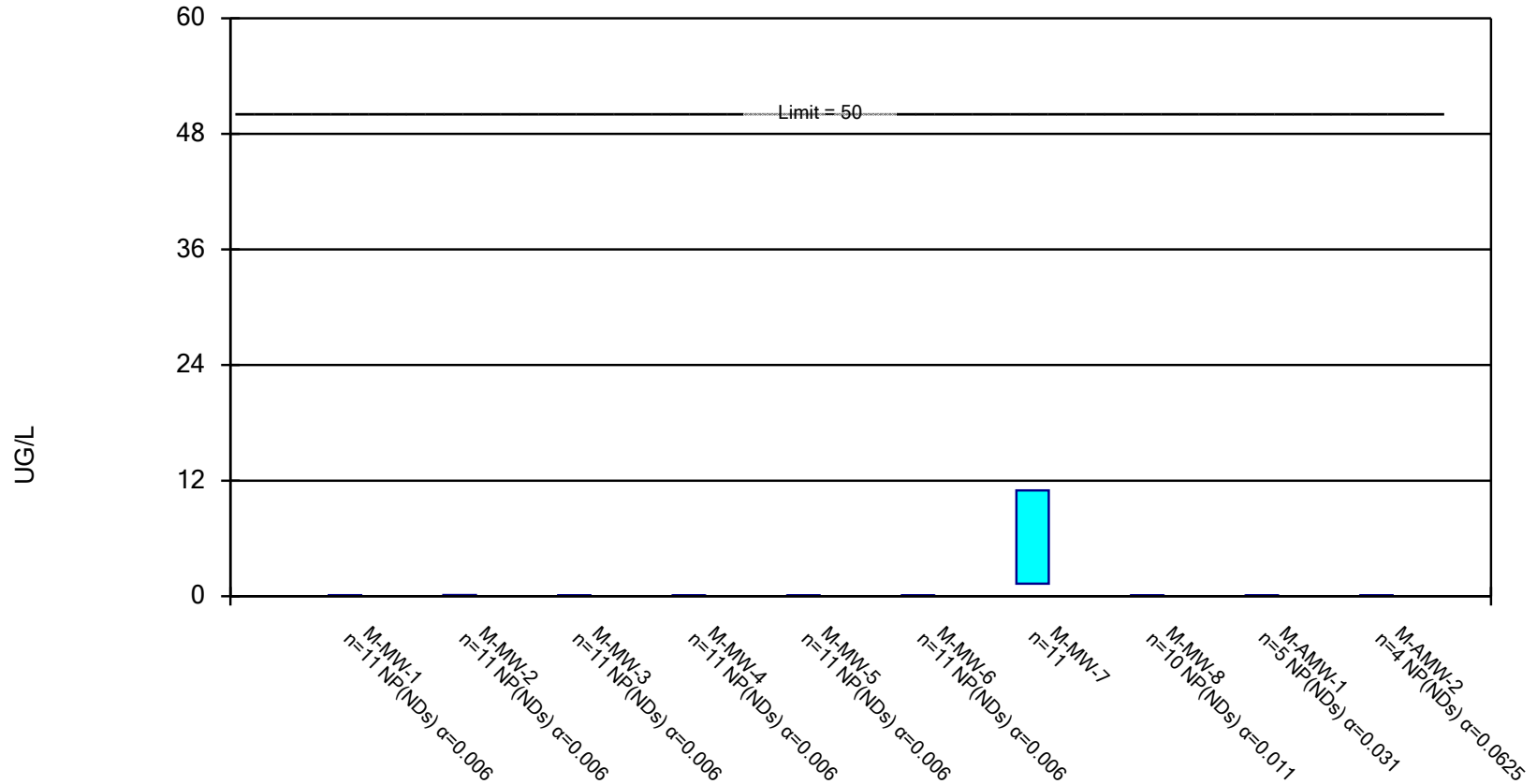


Constituent: Radium [226 + 228] Analysis Run 2/18/2020 4:44 PM

Meramec E.C. Client: Ameren Data: MEC 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 2/18/2020 4:44 PM

Meramec E.C. Client: Ameren Data: MEC Data

Confidence Interval

Meramec E.C. Client: Ameren Data: MEC Data Printed 2/18/2020, 4:45 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>
ARSENIC, TOTAL (UG/L)	M-MW-1	0.8311	0.5056	10	No	12	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-2	2.048	1.49	10	No	13	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-3	8.029	6.934	10	No	11	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-4	15.04	13.5	10	Yes	11	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-5	22.17	19.26	10	Yes	11	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-6	5.486	2.798	10	No	12	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-7	3.378	2.383	10	No	13	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-8	6.3	5.666	10	No	12	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-AMW-1	19.11	15.17	10	Yes	5	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-AMW-2	13.36	9.993	10	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-MW-1	372.8	356.7	2000	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-MW-2	500	301	2000	No	13	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	M-MW-3	252.5	213.5	2000	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-MW-4	228	199	2000	No	13	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	M-MW-5	308	230	2000	No	13	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	M-MW-6	73.35	53.44	2000	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-MW-7	51.91	40.02	2000	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-MW-8	228.9	167.7	2000	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-AMW-1	326	146.8	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-AMW-2	204.3	130.7	2000	No	4	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	M-MW-1	0.42	0.36	6	No	10	100	No	0.011	NP (NDs)
COBALT, TOTAL (UG/L)	M-MW-2	0.42	0.36	6	No	11	100	No	0.006	NP (NDs)
COBALT, TOTAL (UG/L)	M-MW-3	1.5	0.36	6	No	11	63.64	No	0.006	NP (NDs)
COBALT, TOTAL (UG/L)	M-MW-4	0.42	0.36	6	No	11	100	No	0.006	NP (NDs)
COBALT, TOTAL (UG/L)	M-MW-5	0.42	0.36	6	No	11	100	No	0.006	NP (NDs)
COBALT, TOTAL (UG/L)	M-MW-6	6.474	2.781	6	No	11	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	M-MW-7	0.42	0.36	6	No	10	100	No	0.011	NP (NDs)
COBALT, TOTAL (UG/L)	M-MW-8	0.42	0.36	6	No	11	100	No	0.006	NP (NDs)
COBALT, TOTAL (UG/L)	M-AMW-1	0.75	0.42	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	M-AMW-2	3.34	-0.2997	6	No	4	50	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-1	0.3	0.23	4	No	14	0	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	M-MW-2	0.1488	0.1044	4	No	13	7.692	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-3	0.1088	0.07461	4	No	14	28.57	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-4	0.1827	0.1304	4	No	13	7.692	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-5	0.2369	0.1731	4	No	14	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-6	0.2049	0.1124	4	No	14	7.143	ln(x)	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-7	0.5624	0.3539	4	No	16	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-8	0.2889	0.2146	4	No	13	0	ln(x)	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-AMW-1	0.2526	0.1754	4	No	5	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-AMW-2	0.3984	0.07656	4	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-1	5.3	1.45	40	No	12	83.33	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	M-MW-2	6.397	3.536	40	No	12	33.33	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-3	7.312	4.246	40	No	12	33.33	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-4	24.74	19.36	40	No	12	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-5	23.45	17.54	40	No	12	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-6	136.9	125.5	40	Yes	11	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-7	61.29	40.93	40	Yes	12	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-8	33.43	28.89	40	No	12	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-AMW-1	18.58	9.698	40	No	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-AMW-2	38.55	33.95	40	No	4	0	No	0.01	Param.

Confidence Interval

Meramec E.C. Client: Ameren Data: MEC Data Printed 2/18/2020, 4:45 PM

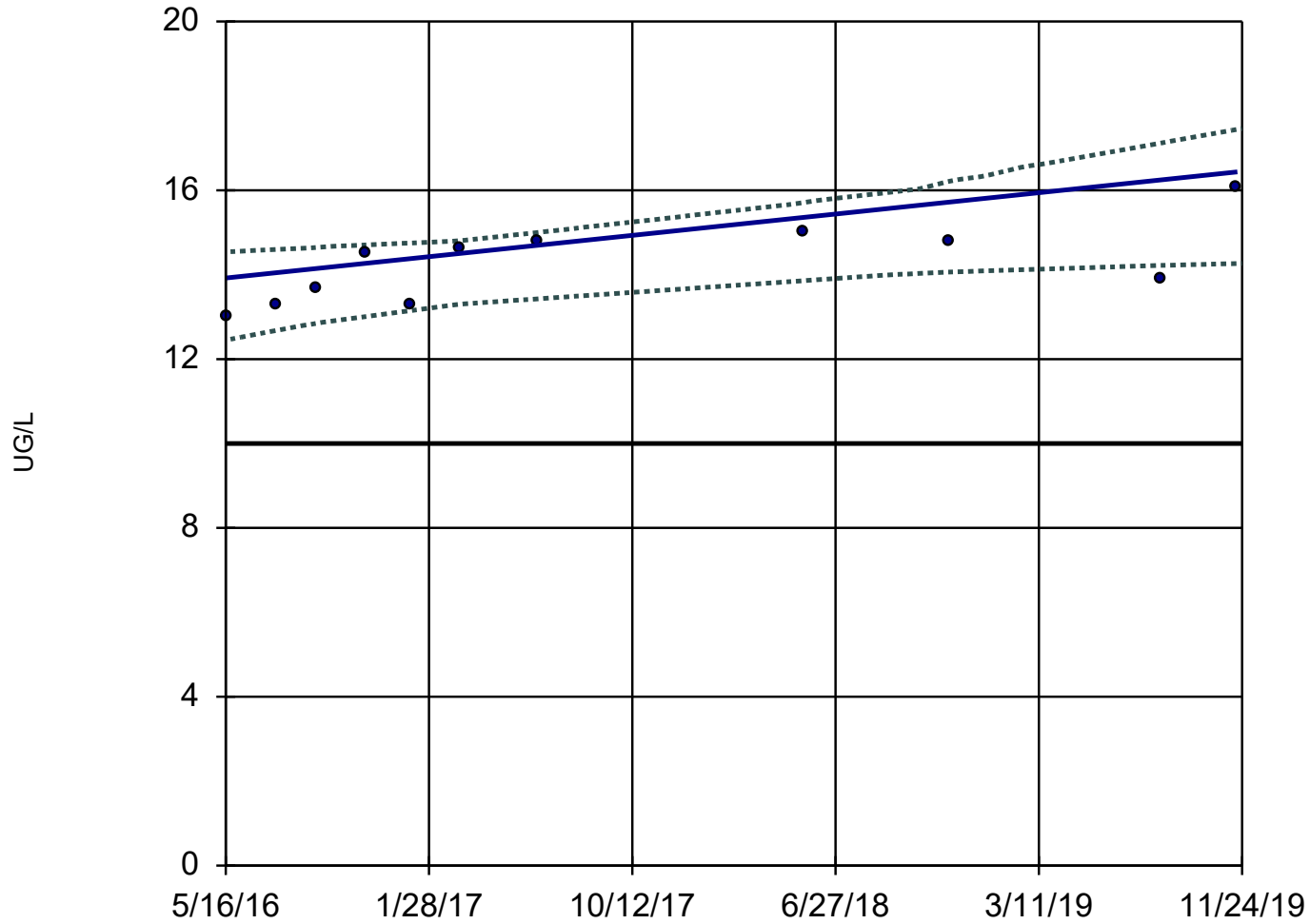
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
MOLYBDENUM, TOTAL (UG/L)	M-MW-1	1.3	0.26	100	No	13	92.31	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	M-MW-2	2.1	0.26	100	No	13	76.92	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	M-MW-3	5.172	1.875	100	No	13	23.08	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	M-MW-4	54.43	51.43	100	No	13	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	M-MW-5	99.01	85.84	100	No	13	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	M-MW-6	146.1	127.2	100	Yes	13	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	M-MW-7	513	335.8	100	Yes	13	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	M-MW-8	215.6	194.9	100	Yes	13	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	M-AMW-1	40.14	34.02	100	No	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	M-AMW-2	8.159	0.8907	100	No	4	0	No	0.01	Param.
Radium [226 + 228] (PCI/L)	M-MW-1	0.8185	0.6585	5	No	11	100	No	0.006	NP (NDs)
Radium [226 + 228] (PCI/L)	M-MW-2	2.16	0.728	5	No	13	69.23	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	M-MW-3	1.667	1.087	5	No	13	38.46	No	0.01	Param.
Radium [226 + 228] (PCI/L)	M-MW-4	0.9	0.583	5	No	13	92.31	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	M-MW-5	1.971	1.41	5	No	13	46.15	No	0.01	Param.
Radium [226 + 228] (PCI/L)	M-MW-6	0.827	0.5945	5	No	13	100	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	M-MW-7	0.937	0.6655	5	No	11	100	No	0.006	NP (NDs)
Radium [226 + 228] (PCI/L)	M-MW-8	1.483	0.669	5	No	13	76.92	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	M-AMW-1	1.706	0.605	5	No	5	80	No	0.031	NP (NDs)
Radium [226 + 228] (PCI/L)	M-AMW-2	2	1.007	5	No	4	50	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	M-MW-1	0.1	0.043	50	No	11	81.82	No	0.006	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-2	0.12	0.043	50	No	11	81.82	No	0.006	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-3	0.09	0.043	50	No	11	81.82	No	0.006	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-4	0.093	0.043	50	No	11	81.82	No	0.006	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-5	0.09	0.043	50	No	11	90.91	No	0.006	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-6	0.09	0.043	50	No	11	90.91	No	0.006	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-7	10.98	1.295	50	No	11	9.091	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	M-MW-8	0.09	0.043	50	No	10	80	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-AMW-1	0.09	0.0425	50	No	5	100	No	0.031	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-AMW-2	0.093	0.0425	50	No	4	75	No	0.0625	NP (NDs)

APPENDIX B

**Sanitas Trending Confidence
Bands Statistical Output**

Sen's Slope and 95% Confidence Band

M-MW-4



n = 11

Slope = 0.7165
units per year.

Mann-Kendall
statistic = 37
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

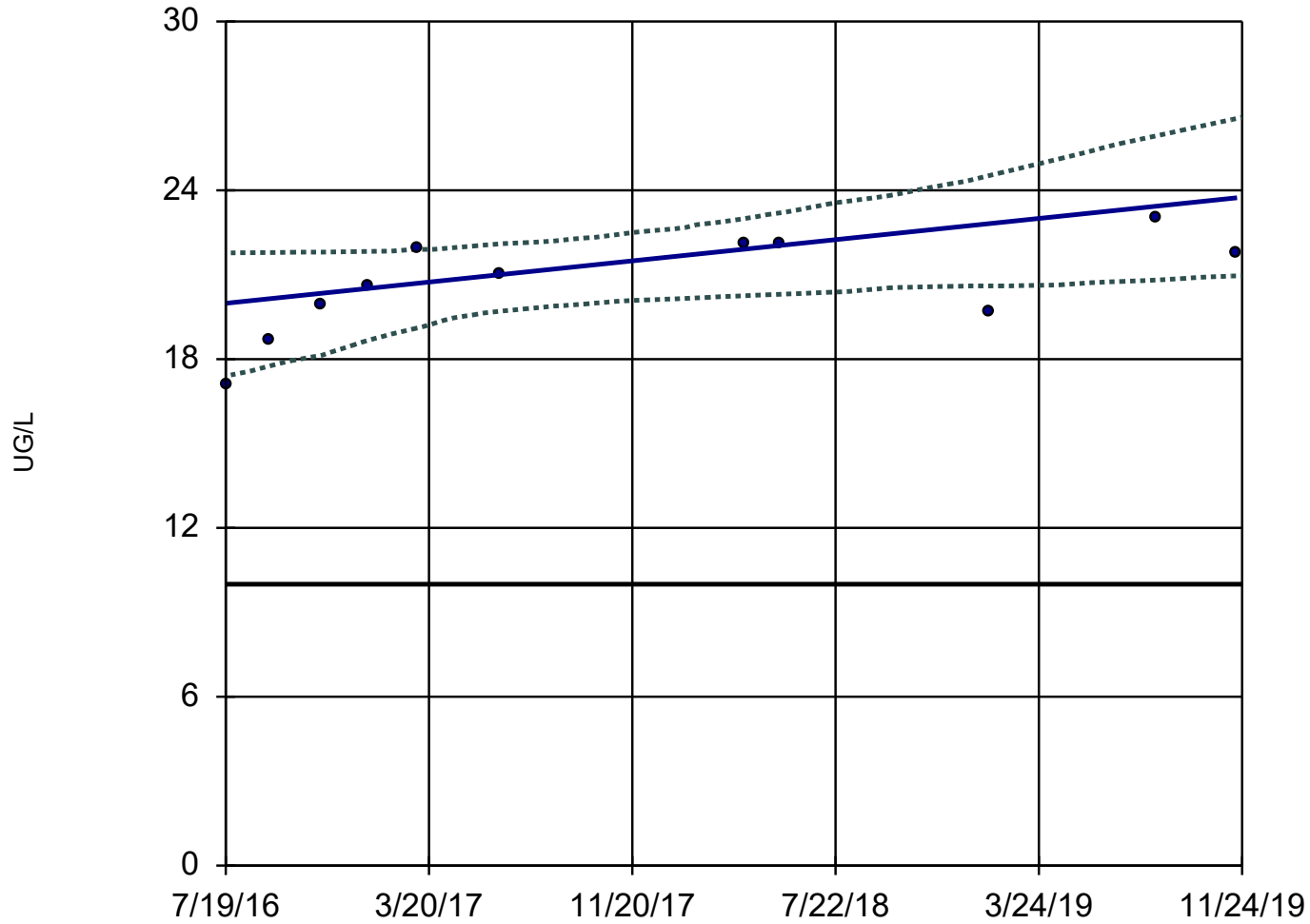
GWPS = 10.

Constituent: ARSENIC, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-5



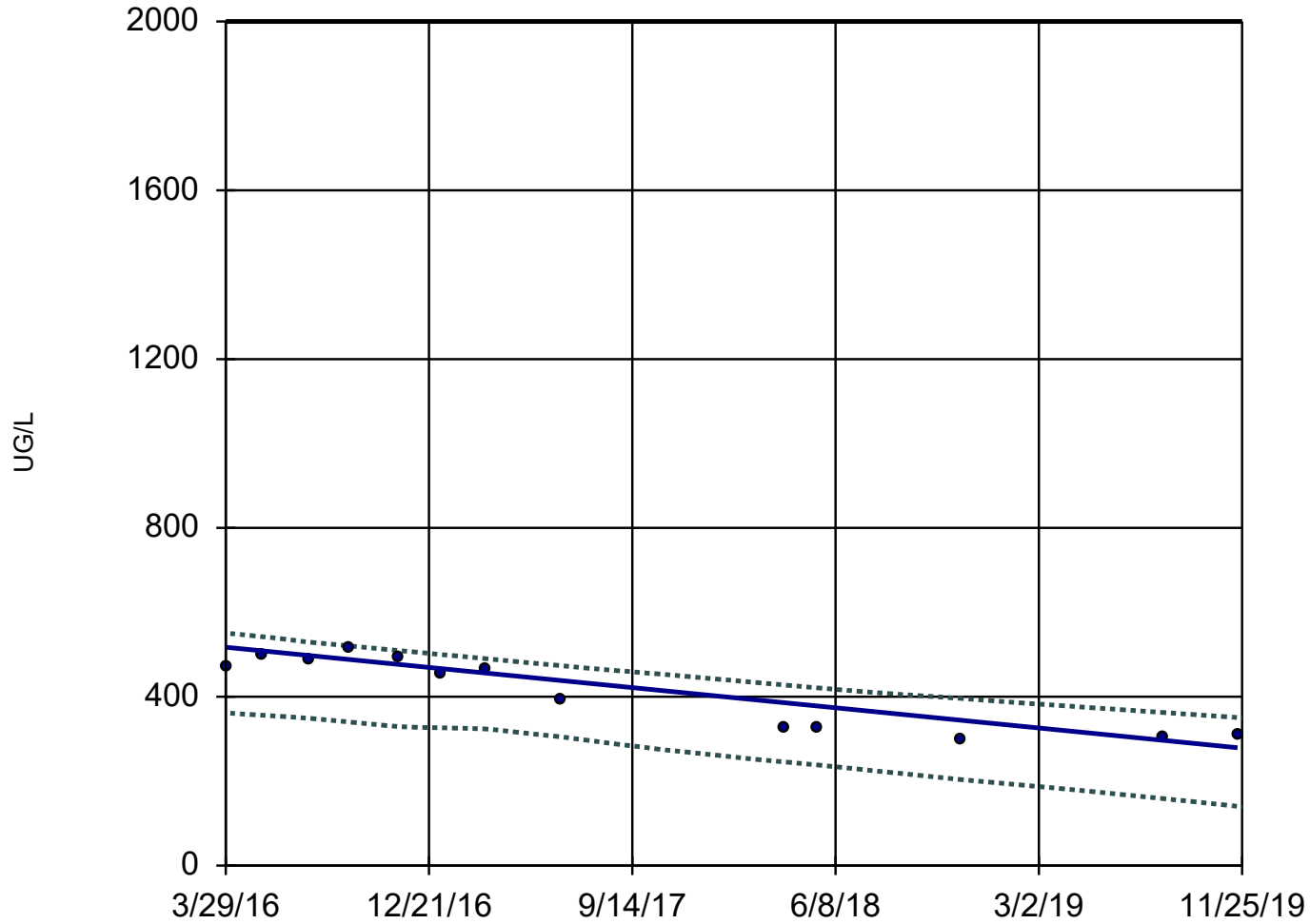
n = 11
Slope = 1.125 units per year.
Mann-Kendall statistic = 32
critical = 31
Increasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).
GWPS = 10.

Constituent: ARSENIC, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-2



n = 13

Slope = -65.33
units per year.

Mann-Kendall
statistic = -54
critical = -39

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

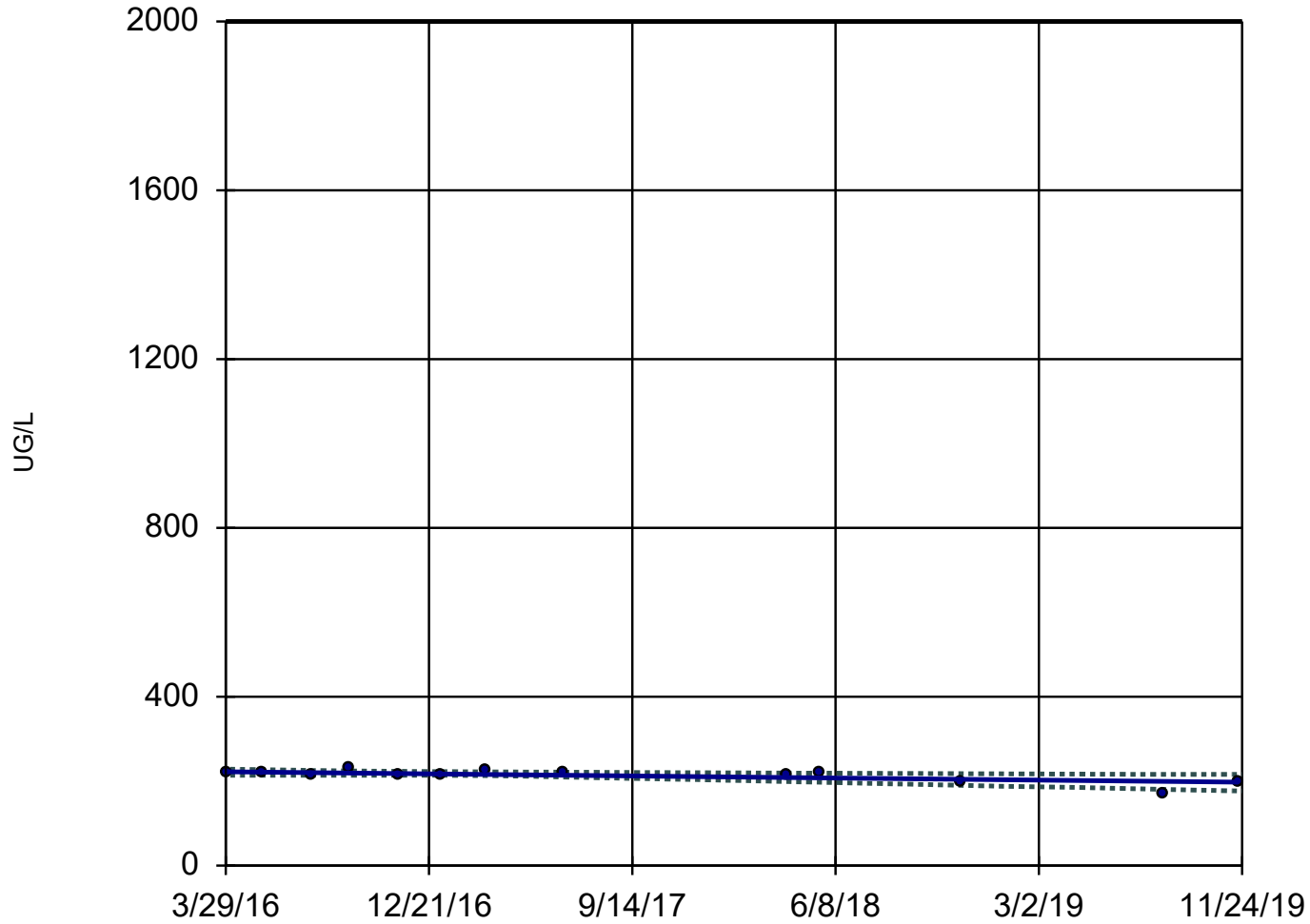
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-4



n = 13

Slope = -6.7
units per year.

Mann-Kendall
statistic = -40
critical = -39

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

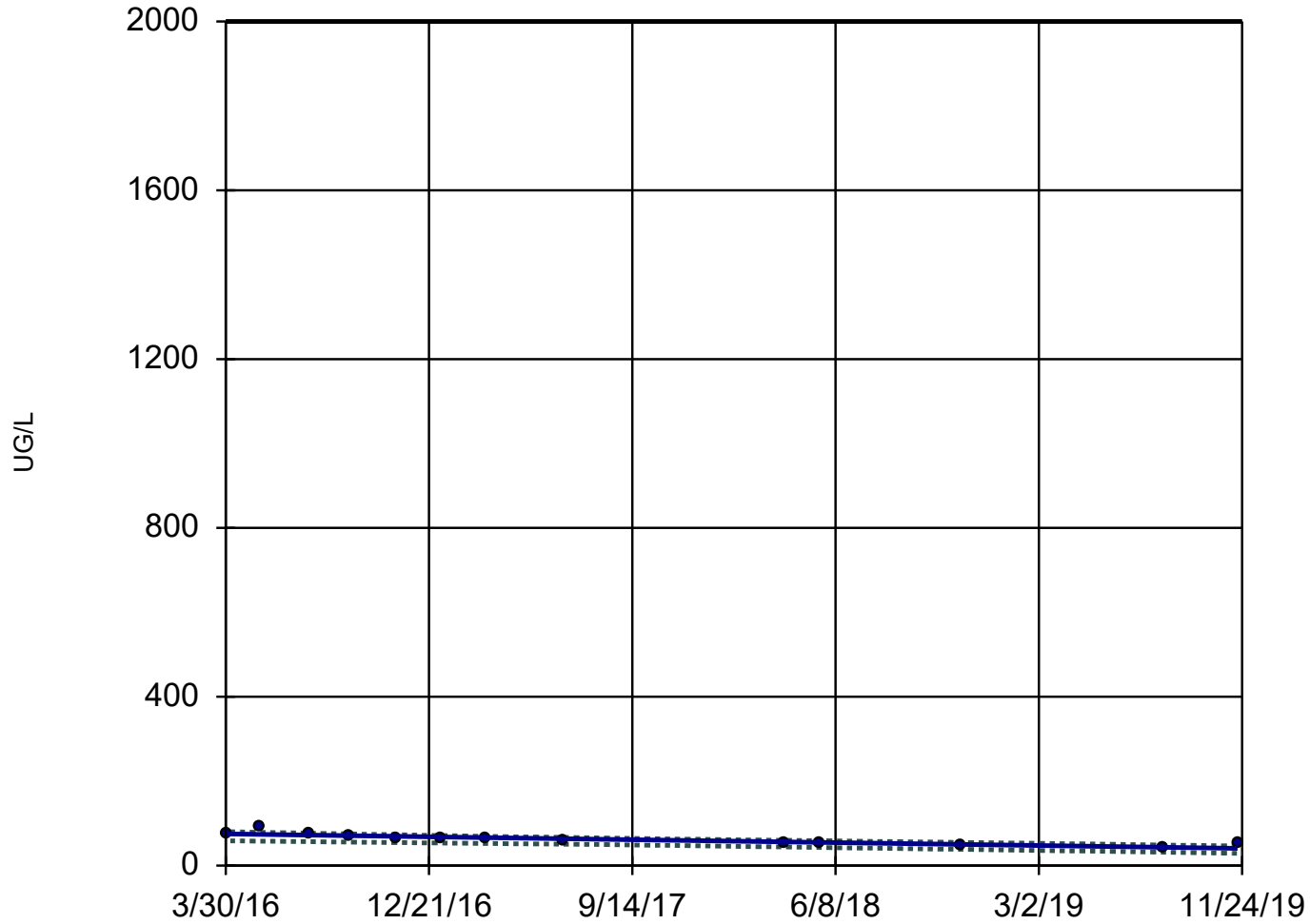
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-6



n = 13

Slope = -9.38
units per year.

Mann-Kendall
statistic = -70
critical = -39

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

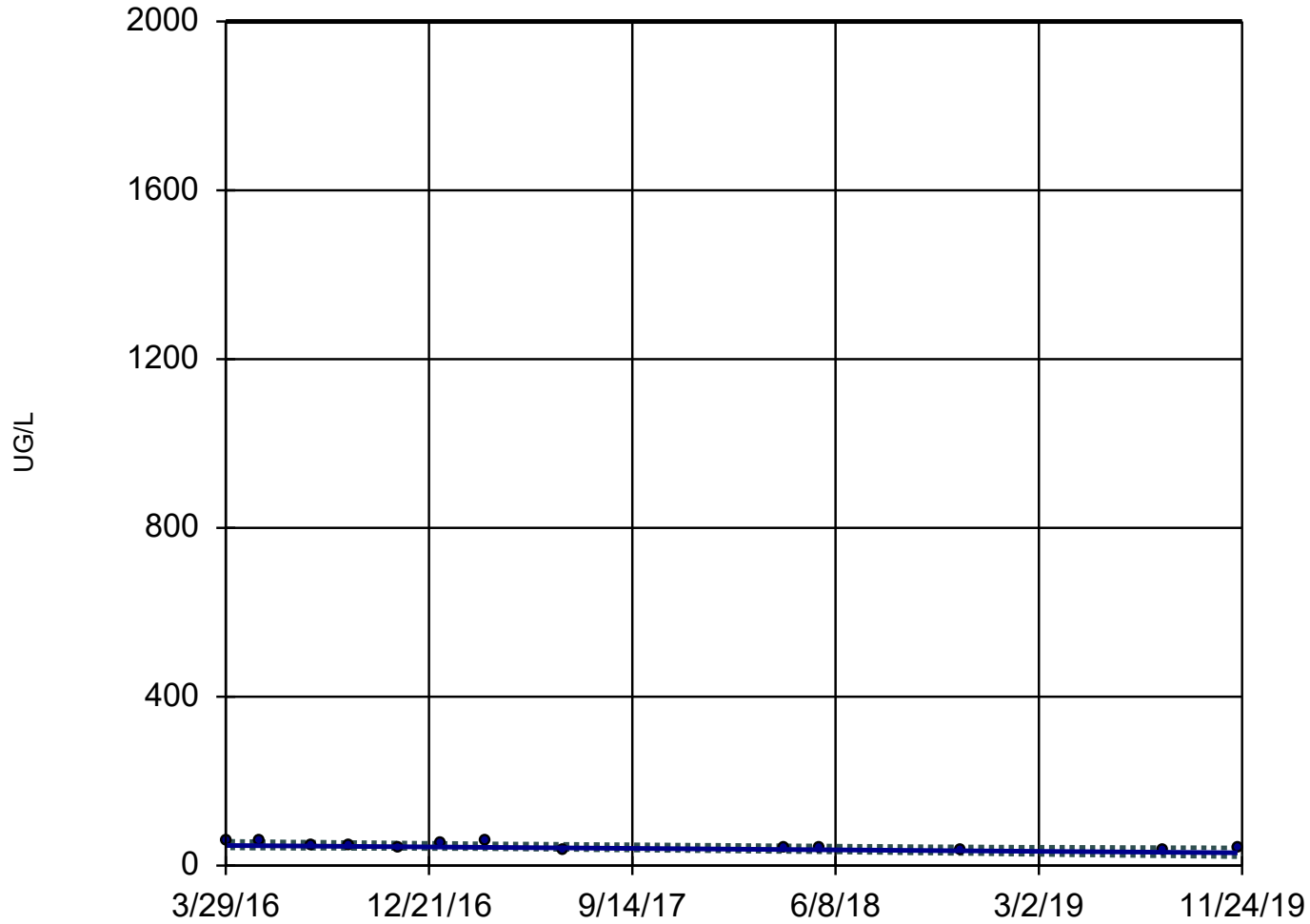
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-7



n = 13

Slope = -4.813
units per year.

Mann-Kendall
statistic = -44
critical = -39

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

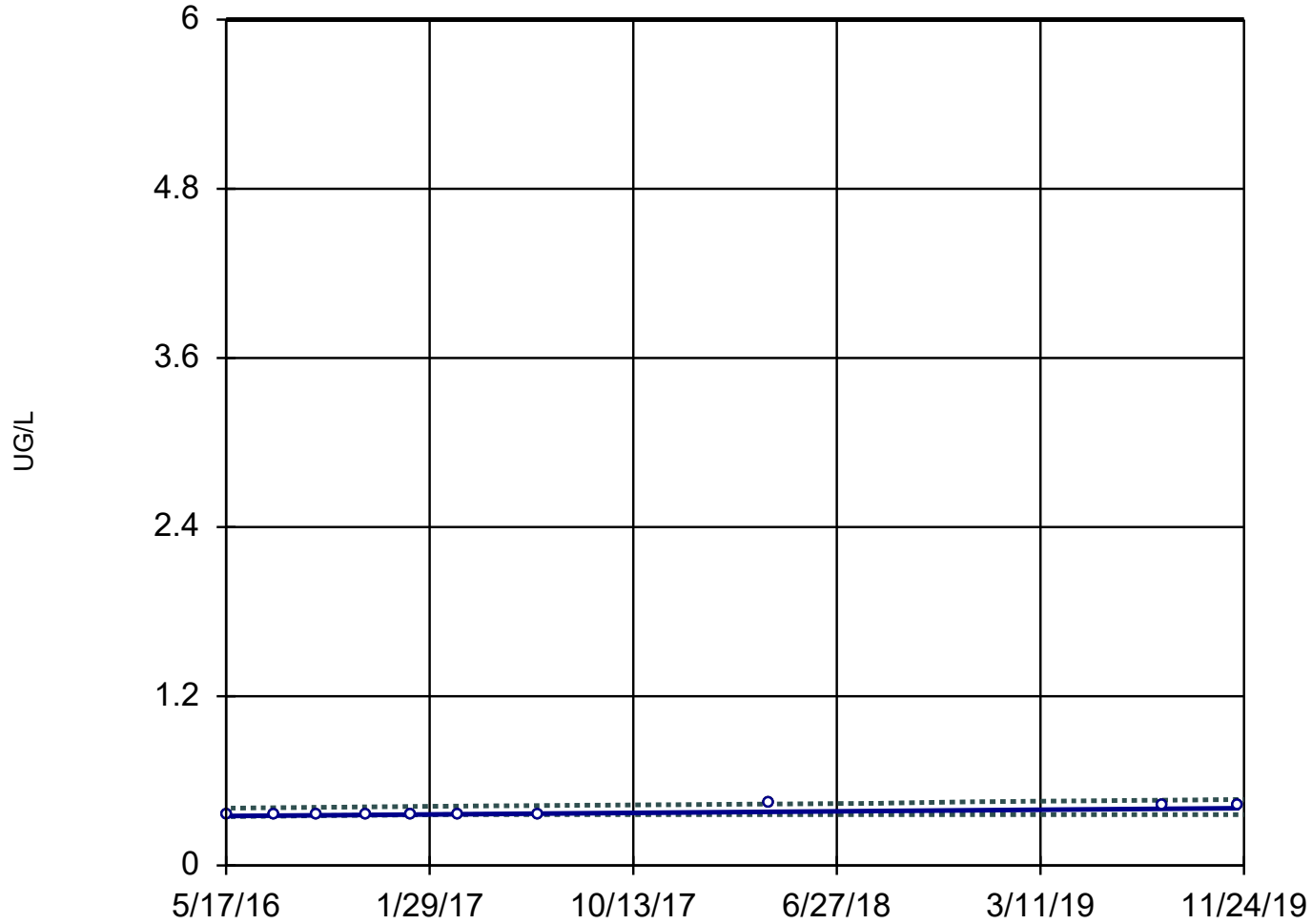
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-1



n = 10

Slope = 0.0156
units per year.

Mann-Kendall
statistic = 29
critical = 27

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

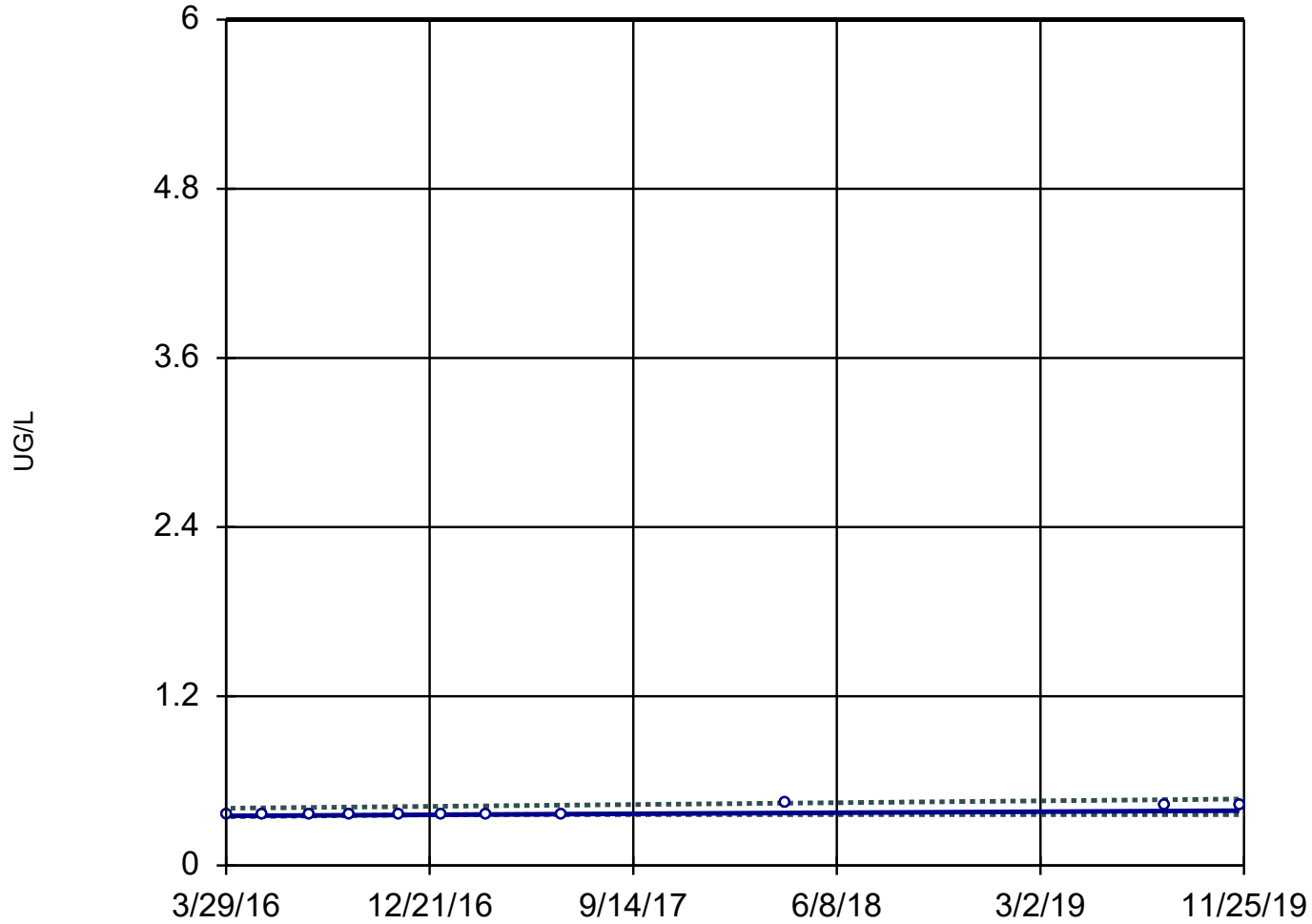
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-2



n = 11

Slope = 0.01014
units per year.

Mann-Kendall
statistic = 34
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

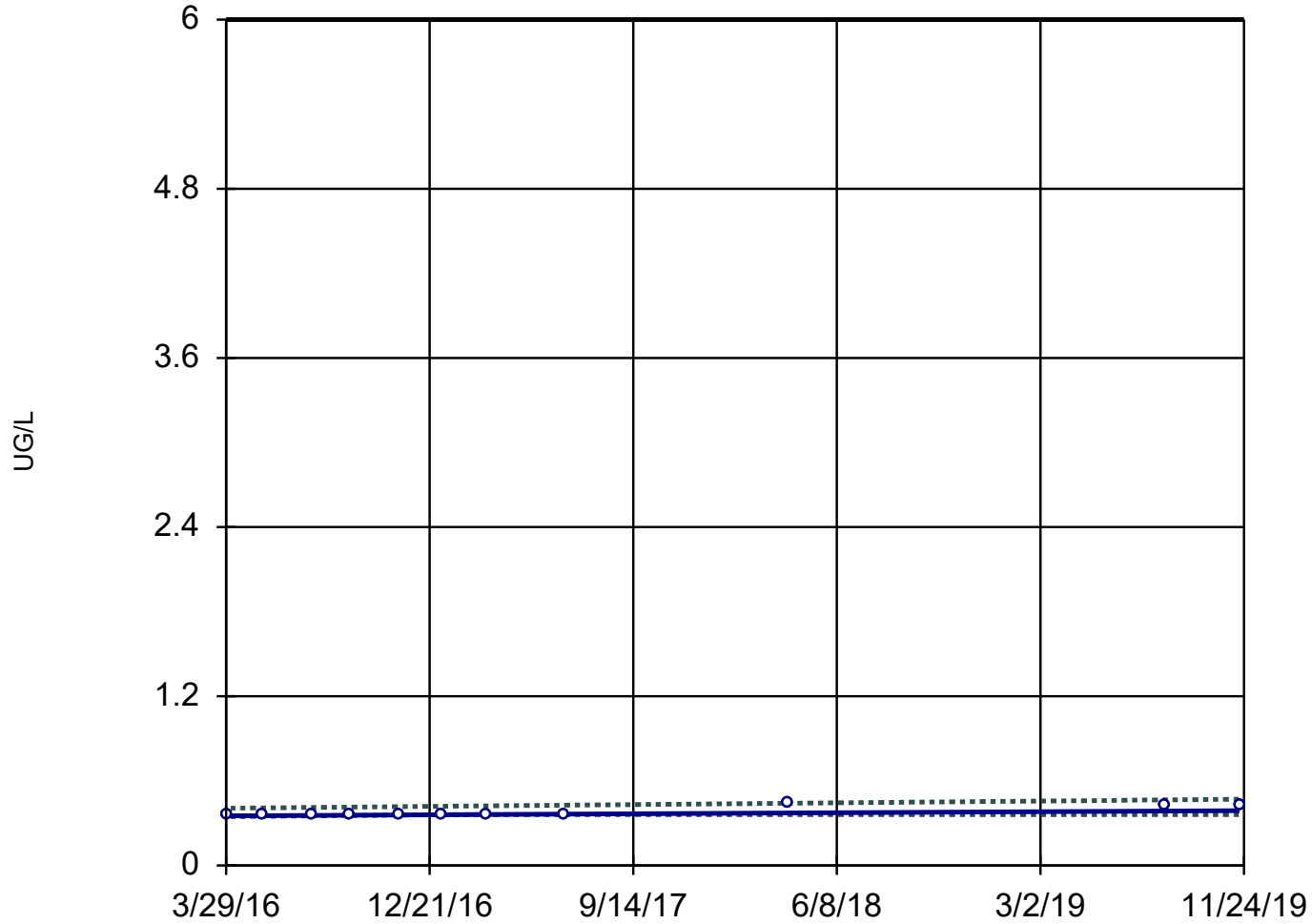
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-4



n = 11

Slope = 0.01014
units per year.

Mann-Kendall
statistic = 34
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

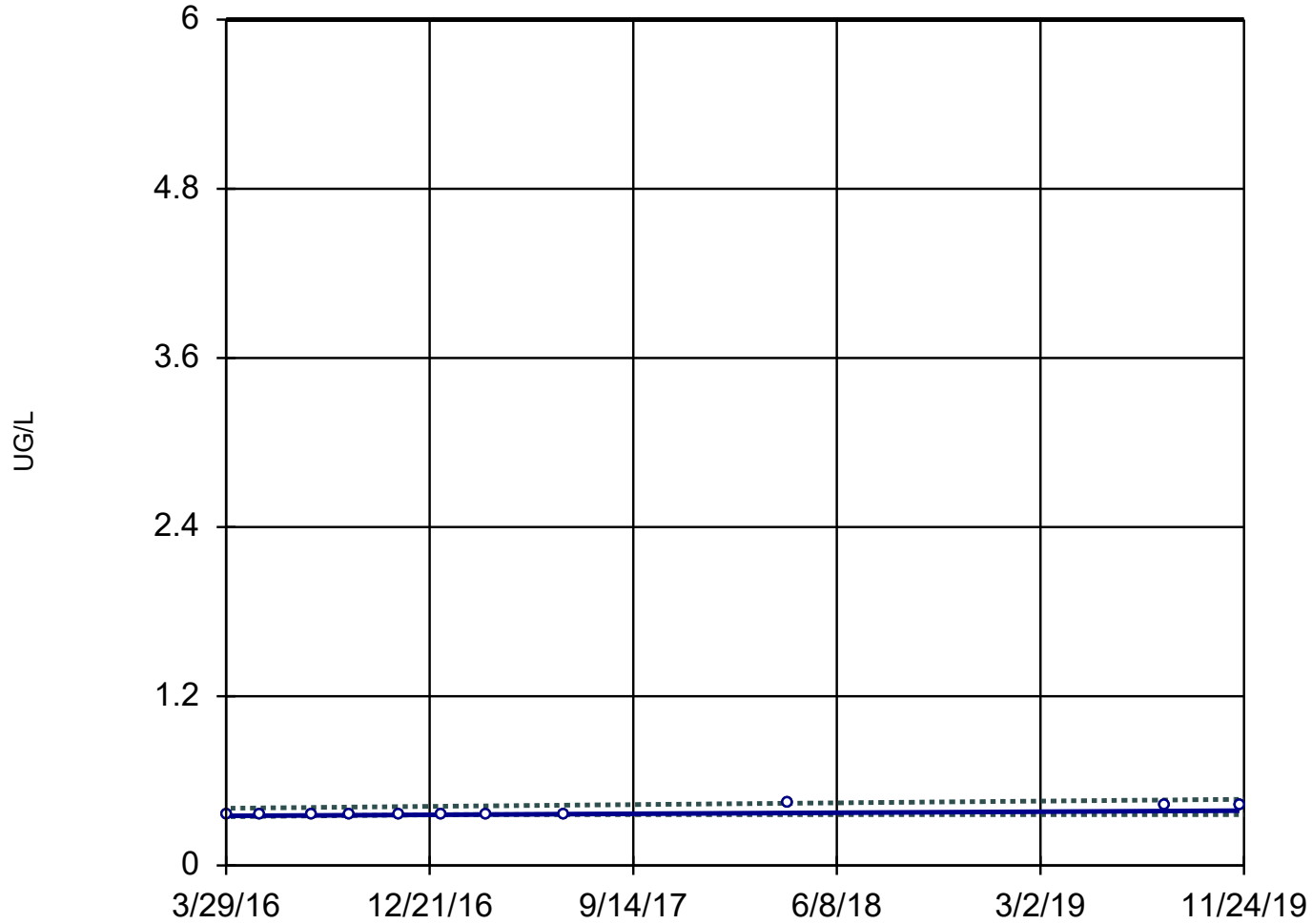
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-5



n = 11

Slope = 0.01014
units per year.

Mann-Kendall
statistic = 34
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

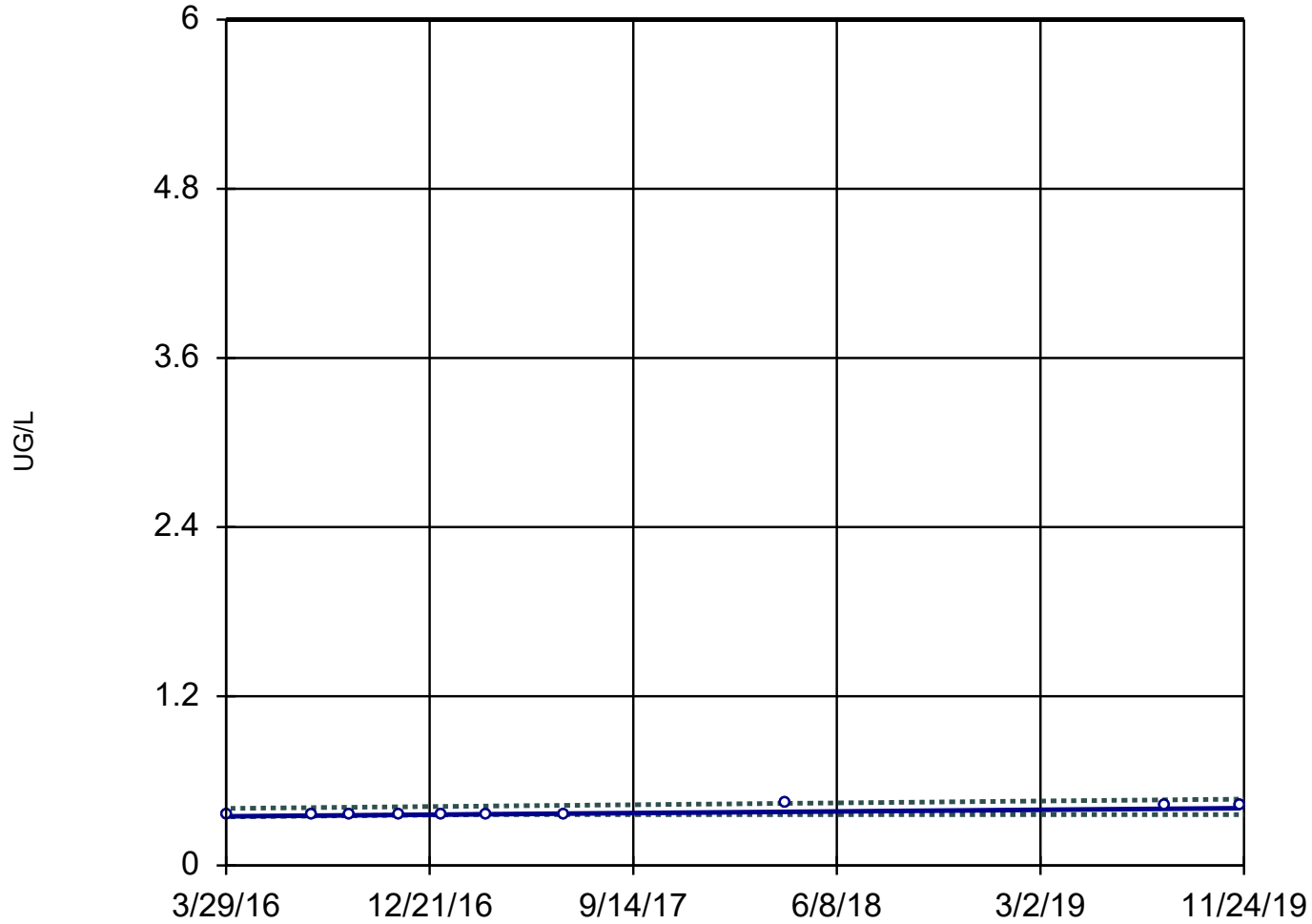
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-7



n = 10

Slope = 0.0156
units per year.

Mann-Kendall
statistic = 29
critical = 27

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

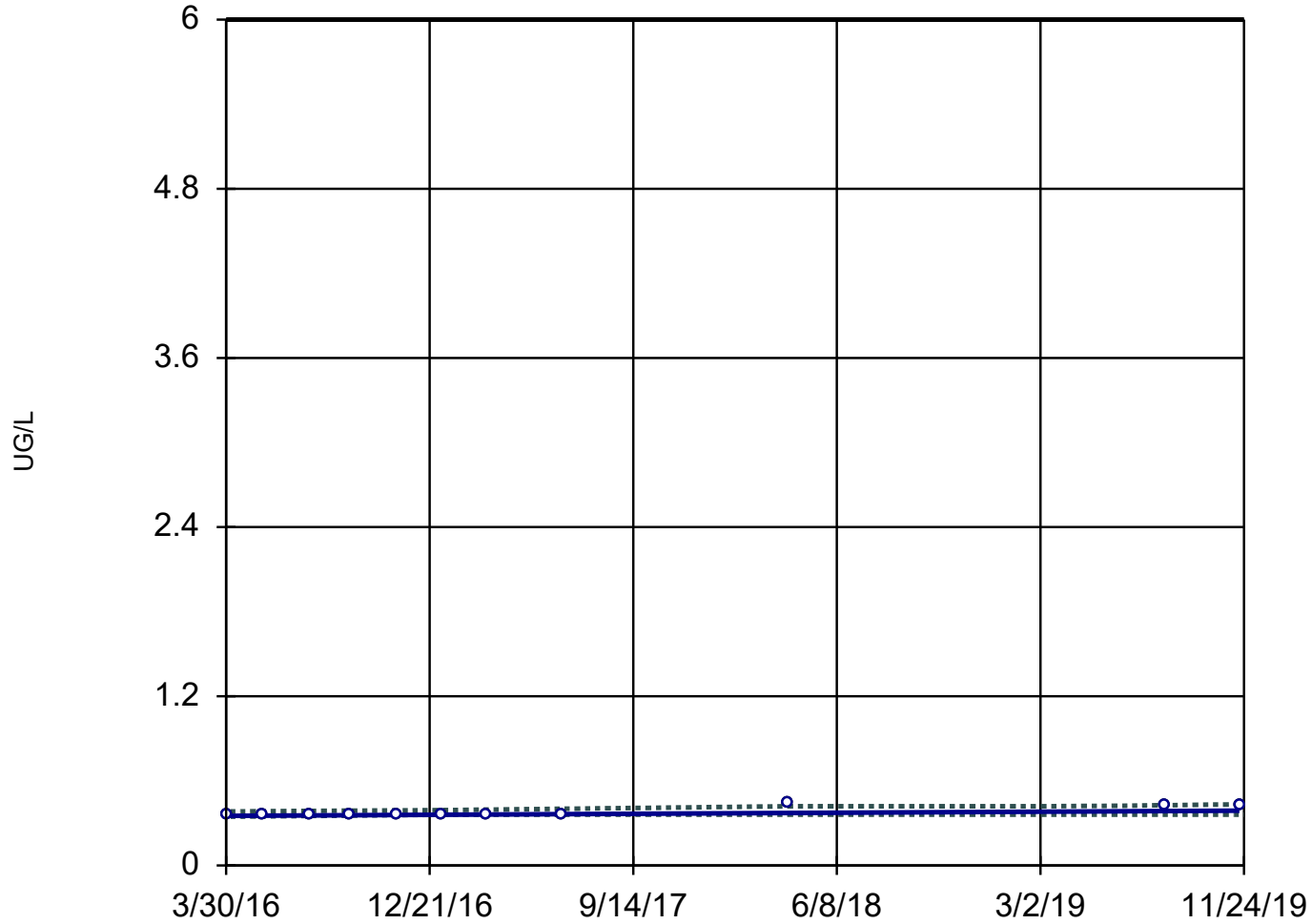
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-8



n = 11

Slope = 0.01014
units per year.

Mann-Kendall
statistic = 34
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

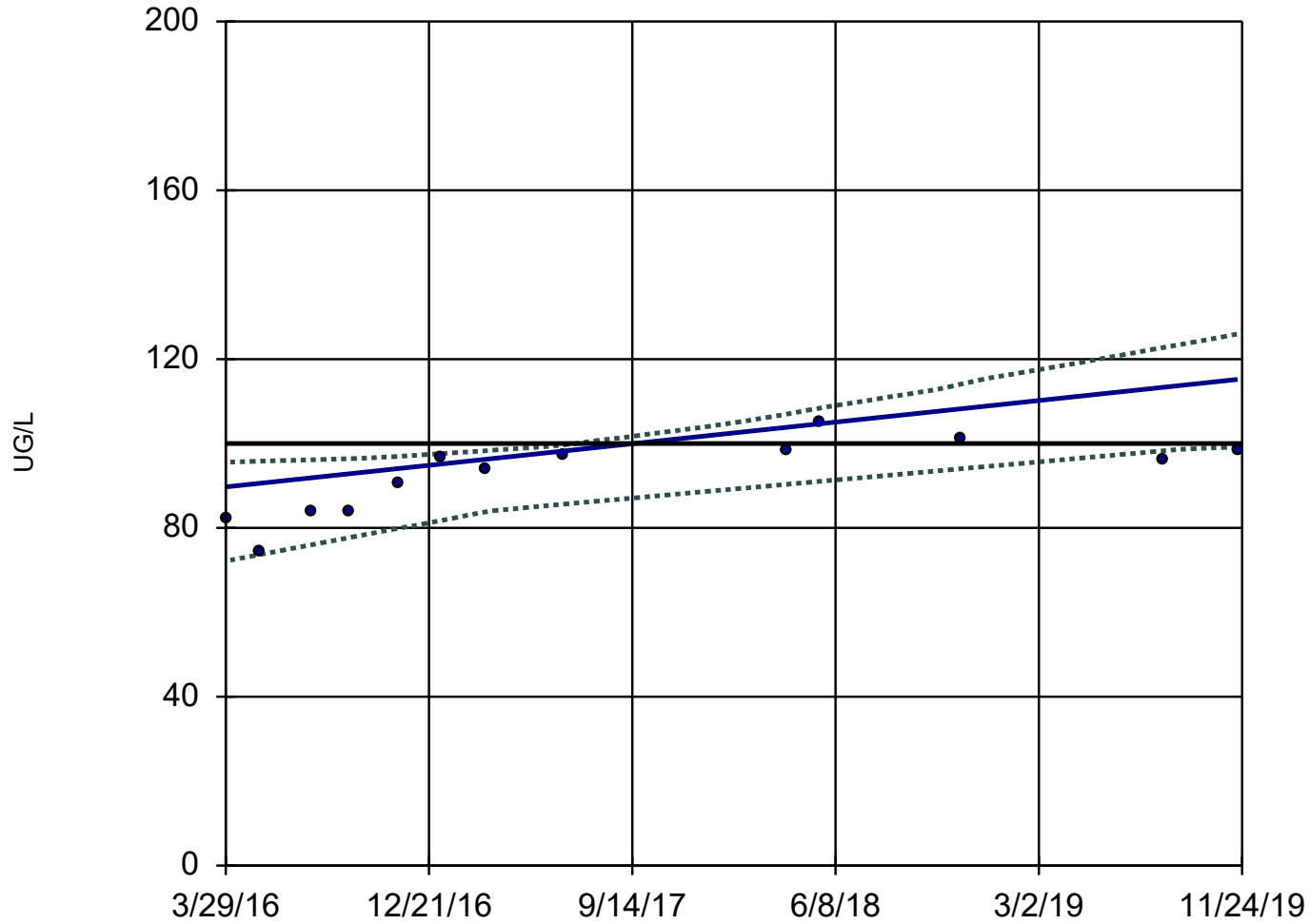
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-5



n = 13

Slope = 6.995
units per year.

Mann-Kendall
statistic = 56
critical = 39

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

GWPS = 100.

Constituent: MOLYBDENUM, TOTAL Analysis Run 2/18/2020 4:52 PM

Meramec E.C. Client: Ameren Data: MEC Data

Trend Test

Meramec E.C. Client: Ameren Data: MEC Data Printed 2/18/2020, 4:54 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
ARSENIC, TOTAL (UG/L)	M-MW-1	0.01851	12	35	No	12	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-2	0	4	39	No	13	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-3	0.2548	12	31	No	11	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-4	0.7165	37	31	Yes	11	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-5	1.125	32	31	Yes	11	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-6	-0.5155	-18	-35	No	12	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-7	0	2	39	No	13	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-8	-0.04815	-5	-35	No	12	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-AMW-1	-0.1494	0	10	No	5	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-AMW-2	-0.4333	0	8	No	4	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-1	-2.628	-19	-39	No	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-2	-65.33	-54	-39	Yes	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-3	-10.63	-27	-39	No	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-4	-6.7	-40	-39	Yes	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-5	-16.14	-18	-39	No	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-6	-9.38	-70	-39	Yes	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-7	-4.813	-44	-39	Yes	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-8	-21.98	-34	-39	No	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-AMW-1	-109.5	-6	-10	No	5	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-AMW-2	35.24	4	8	No	4	0	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-1	0.0156	29	27	Yes	10	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-2	0.01014	34	31	Yes	11	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-3	0.006207	6	31	No	11	63.64	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-4	0.01014	34	31	Yes	11	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-5	0.01014	34	31	Yes	11	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-6	0.9836	14	31	No	11	0	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-7	0.0156	29	27	Yes	10	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-8	0.01014	34	31	Yes	11	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-AMW-1	0	1	10	No	5	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-AMW-2	1.979	2	8	No	4	50	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-1	0	3	44	No	14	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-2	0.000...	8	39	No	13	7.692	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-3	-0.00...	-8	-44	No	14	28.57	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-4	-0.01318	-16	-39	No	13	7.692	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-5	-0.00...	-9	-44	No	14	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-6	-0.00...	-11	-44	No	14	7.143	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-7	0.04759	27	53	No	16	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-8	0	4	39	No	13	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-AMW-1	0.02767	6	10	No	5	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-AMW-2	-0.1365	-4	-8	No	4	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-1	0	15	35	No	12	83.33	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-2	0.4815	18	35	No	12	33.33	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-3	0.04491	1	35	No	12	33.33	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-4	-0.7393	-7	-35	No	12	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-5	-0.9096	-14	-35	No	12	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-6	0	1	31	No	11	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-7	2.991	10	35	No	12	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-8	1.391	34	35	No	12	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-AMW-1	-0.9497	-2	-10	No	5	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-AMW-2	-0.2489	0	8	No	4	0	n/a	n/a	0.02	NP

Trend Test

Meramec E.C. Client: Ameren Data: MEC Data Printed 2/18/2020, 4:54 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
MOLYBDENUM, TOTAL (UG/L)	M-MW-1	0.1474	35	39	No	13	92.31	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-2	0.1012	21	39	No	13	76.92	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-3	1.453	38	39	No	13	23.08	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-4	0.5563	12	39	No	13	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-5	6.995	56	39	Yes	13	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-6	-0.5123	-3	-39	No	13	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-7	17.87	14	39	No	13	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-8	-8.447	-28	-39	No	13	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-AMW-1	-2.526	-8	-10	No	5	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-AMW-2	-0.666	0	8	No	4	0	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-1	-0.0282	-17	-31	No	11	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-2	0.006965	6	39	No	13	69.23	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-3	0.04625	12	39	No	13	38.46	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-4	-0.04136	-20	-39	No	13	92.31	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-5	0.08111	6	39	No	13	46.15	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-6	-0.02341	-12	-39	No	13	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-7	0.04311	9	31	No	11	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-8	0.01831	8	39	No	13	76.92	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-AMW-1	-0.2409	0	10	No	5	80	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-AMW-2	-0.8321	-4	-8	No	4	50	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-1	0	-5	-31	No	11	81.82	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-2	0	-1	-31	No	11	81.82	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-3	0	-13	-31	No	11	81.82	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-4	0	-5	-31	No	11	81.82	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-5	0	-17	-31	No	11	90.91	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-6	-0.00...	-31	-31	No	11	90.91	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-7	0.2109	5	31	No	11	9.091	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-8	0	-10	-27	No	10	80	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-AMW-1	0.04335	6	10	No	5	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-AMW-2	0.02532	3	8	No	4	75	n/a	n/a	0.02	NP

APPENDIX D

**May 2020 Assessment Monitoring
Statistical Evaluation**

TECHNICAL MEMORANDUM

DATE September 1, 2020 **Project No.** 153-140602

TO Bill Kutosky
Ameren Missouri

CC Susan Knowles, Craig Giesmann, Paul Pike, Charlie Henderson

FROM Jeffrey Ingram, Sean Paulsen, Mark Haddock **EMAIL** JIngram@Golder.com

ASSESSMENT MONITORING STATISTICAL EVALUATION MULTI-UNIT SURFACE IMPOUNDMENT NETWORK, MERAMEC ENERGY CENTER, ST LOUIS COUNTY, MISSOURI

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation for the May 2020 sampling event at the Multi-unit Surface Impoundment Network of the Meramec Energy Center located in St. Louis 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 Appendix IV parameters (**Appendix A** and **Appendix B**).

As a part of the updated Corrective Action Plan, monitoring wells AMW-1 (MW-9) and AMW-2 (MW-10) were removed from the Detection and Assessment monitoring well network and added to the Corrective Action Network. Statistical analysis for these wells will now be completed as a part of the Corrective Action statistical analysis and not the Assessment Monitoring Analysis. All other monitoring wells in the network have remained the same.

The Appendix IV constituents were evaluated for SSLs using the methods and procedures outlined in the Statistical Analysis Plan (SAP). The following outliers were removed prior to the calculation of confidence limits:

- Barium
 - MW-4 at 168 micrograms per liter (µg/L) on 8/12/2019: Value was statistically lower than other values at the same well. The low result has not been confirmed during subsequent sampling events.
- Lithium
 - MW-1 at 7.4 µg/L on 4/4/2018: Value was statistically higher than other values at the same well. The high results have not been confirmed during subsequent sampling events.

One (1) new SSL was noted for Molybdenum at MW-5 based on the trend tests. A summary of the SSLs is as follows:

- Arsenic at MW-4 and MW-5
- Lithium at MW-6 and MW-7

■ Molybdenum at MW-5, MW-6, MW-7, and MW-8

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.
Project Geologist



Sean Paulsen, P.G.
Associate, Senior Consultant

JSI/SCP

Enclosures:

Table 1 – MEC Groundwater Protection Standards

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

**Table 1 - MEC Groundwater Protection Standards
MEC Surface Impoundments
Meramec 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	10	2.319
Barium	µg/L	2000	2000	566
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	2.517
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.5214
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	40	20.3
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.676
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 August 2019 from monitoring wells BMW-1 and BMW-2.

Prepared by: JSI

Checked by: EMS

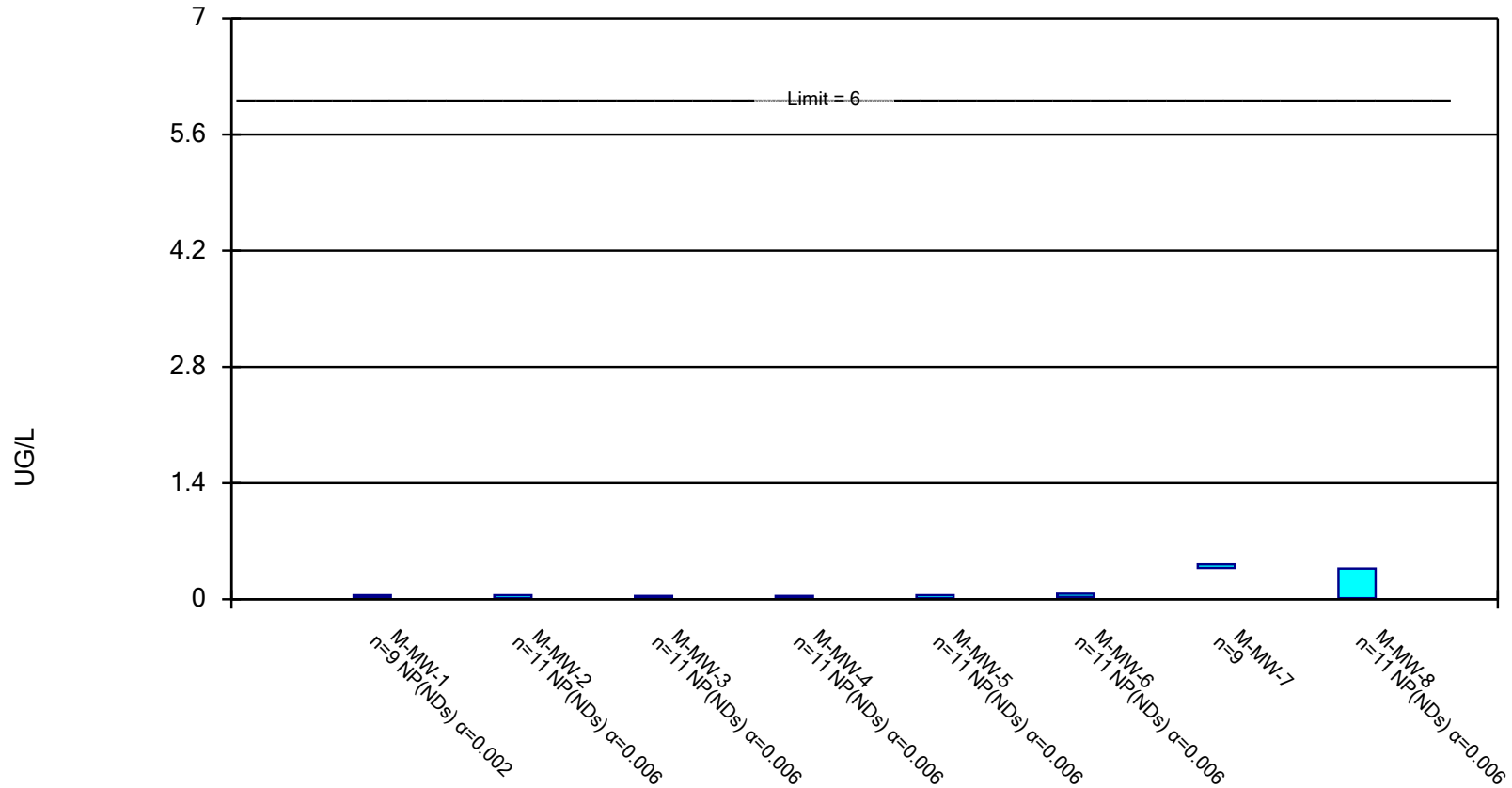
Reviewed by: SCP

APPENDIX A

**Sanitas Confidence Interval
Statistical Output**

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

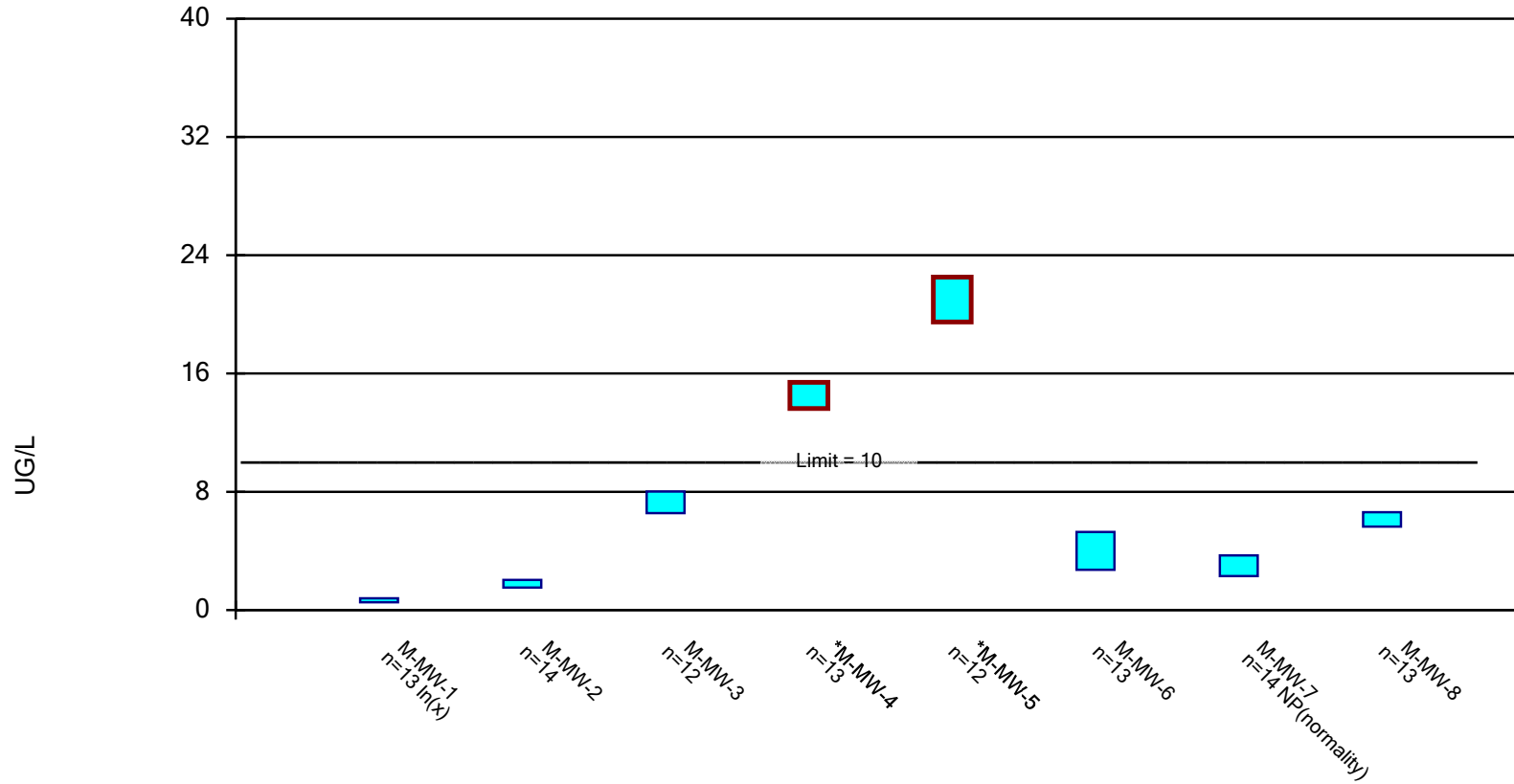


Constituent: ANTIMONY, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC Data

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

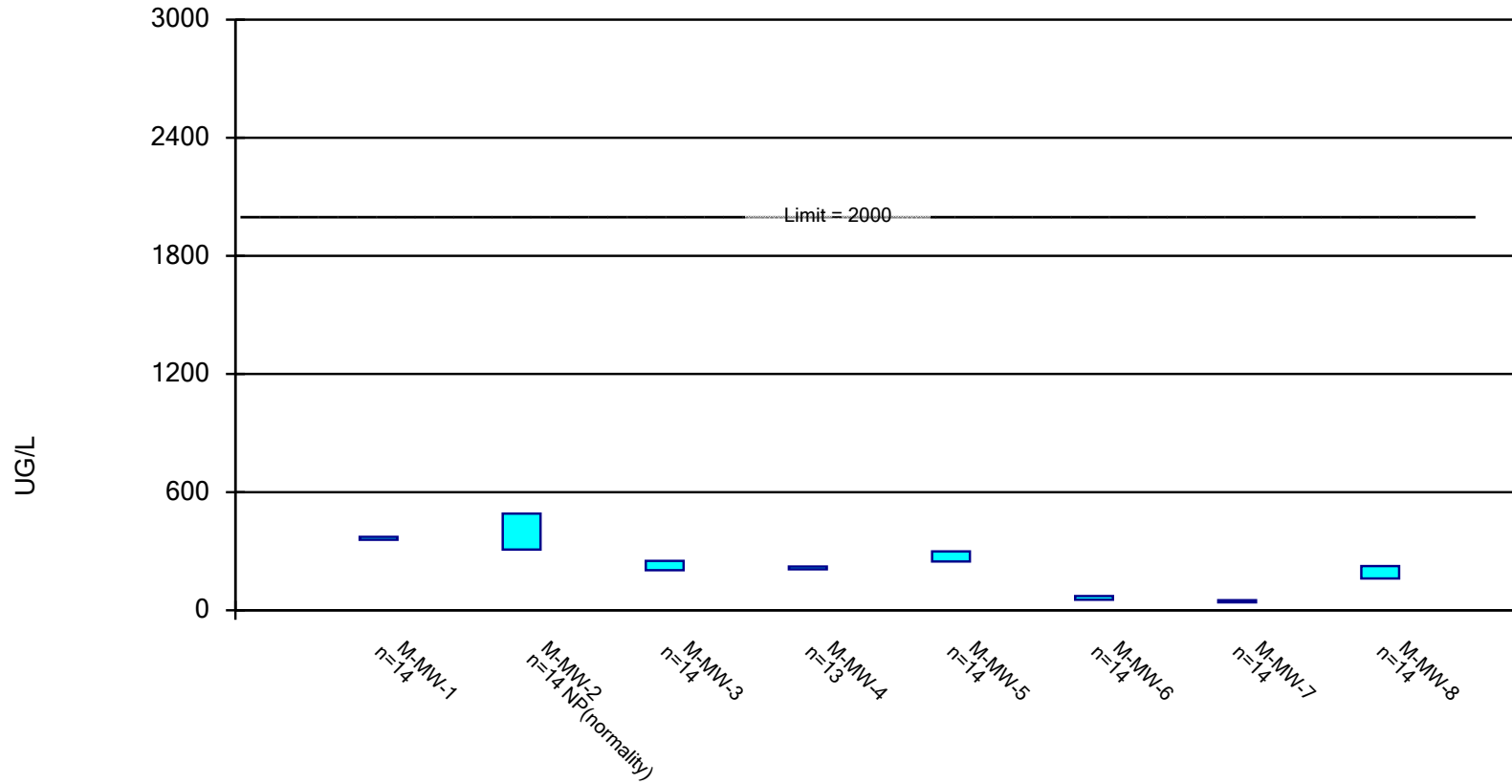


Constituent: ARSENIC, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC Data

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

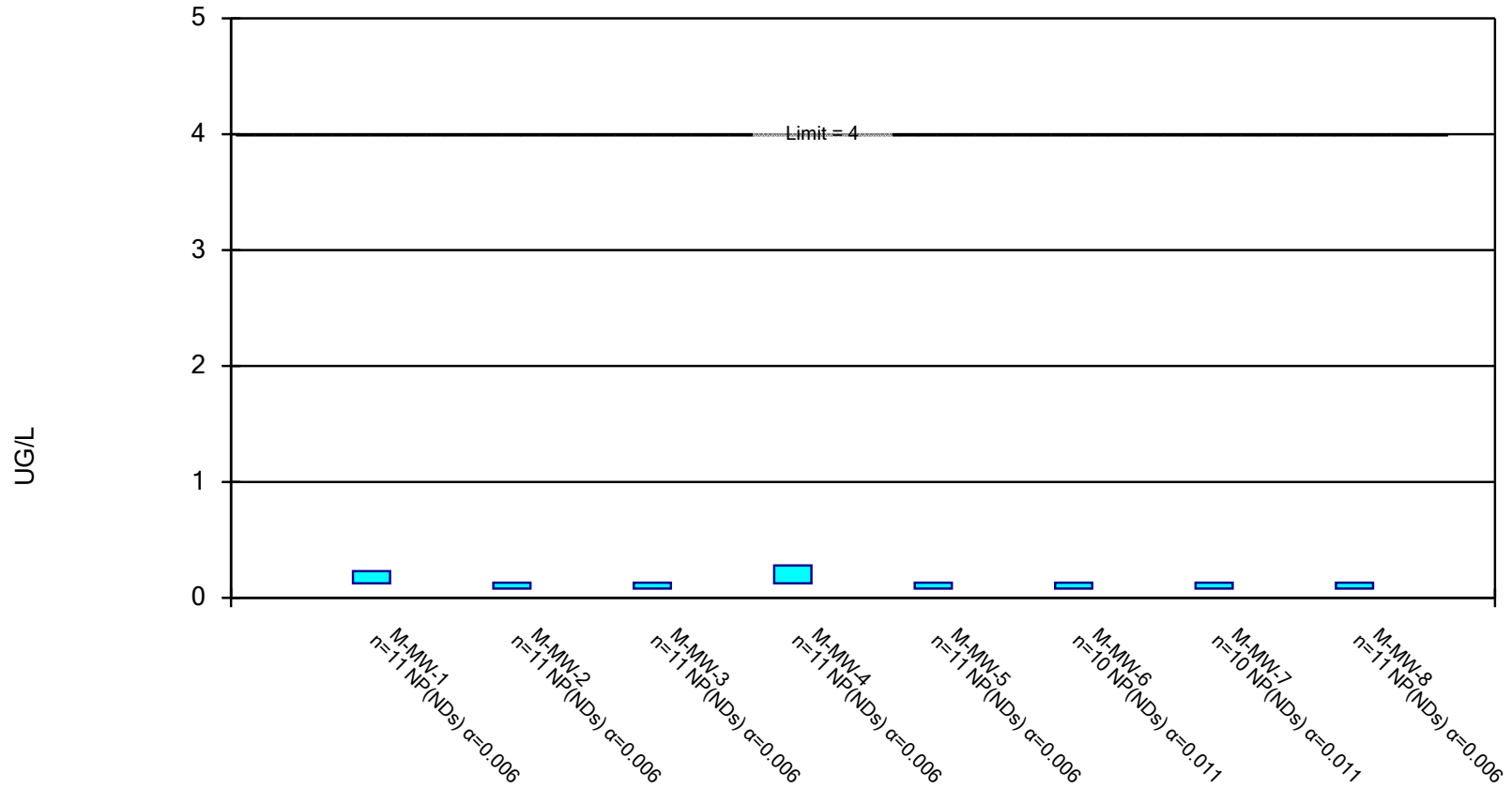


Constituent: BARIUM, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

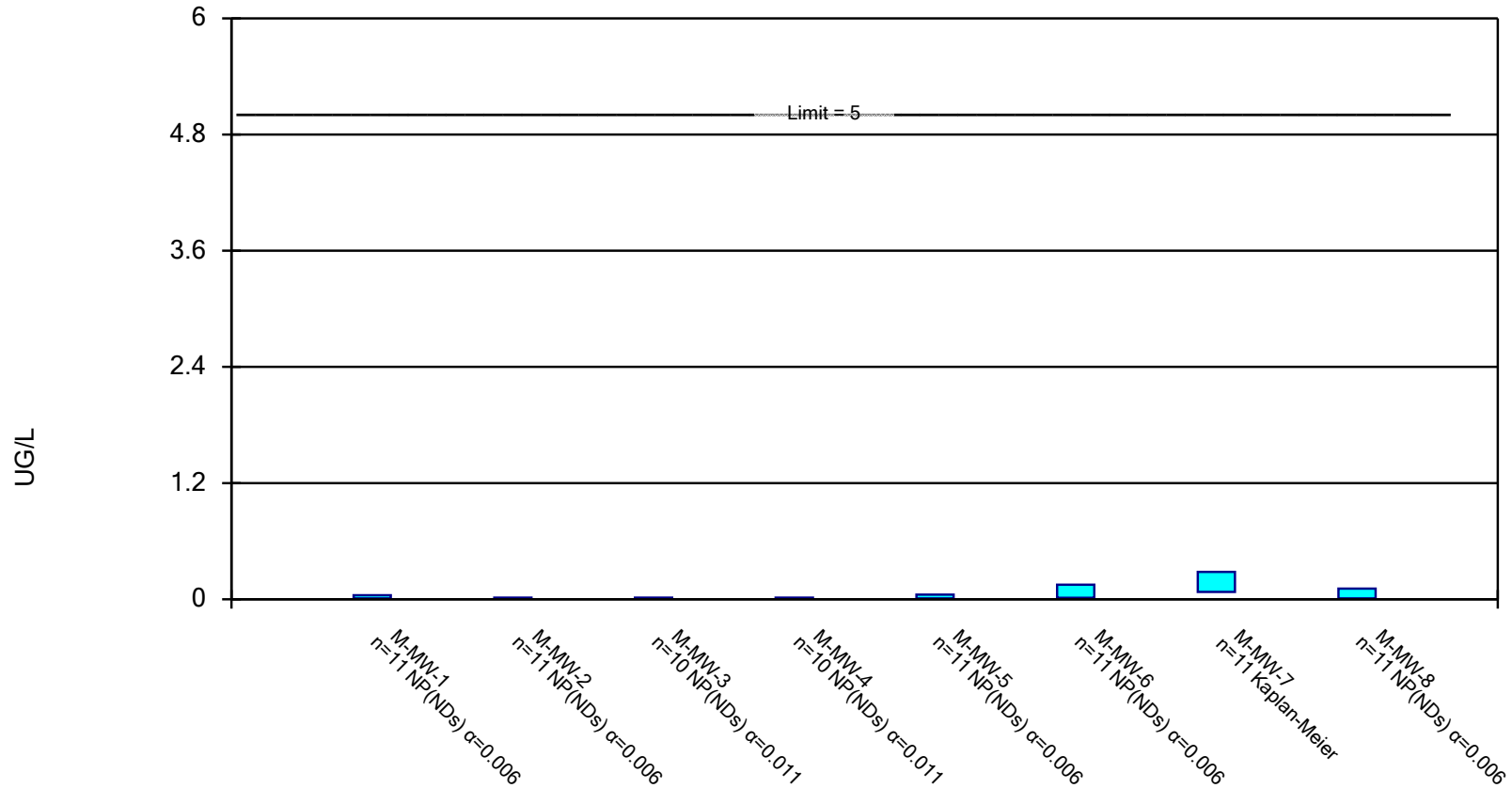


Constituent: BERYLLIUM, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC 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.

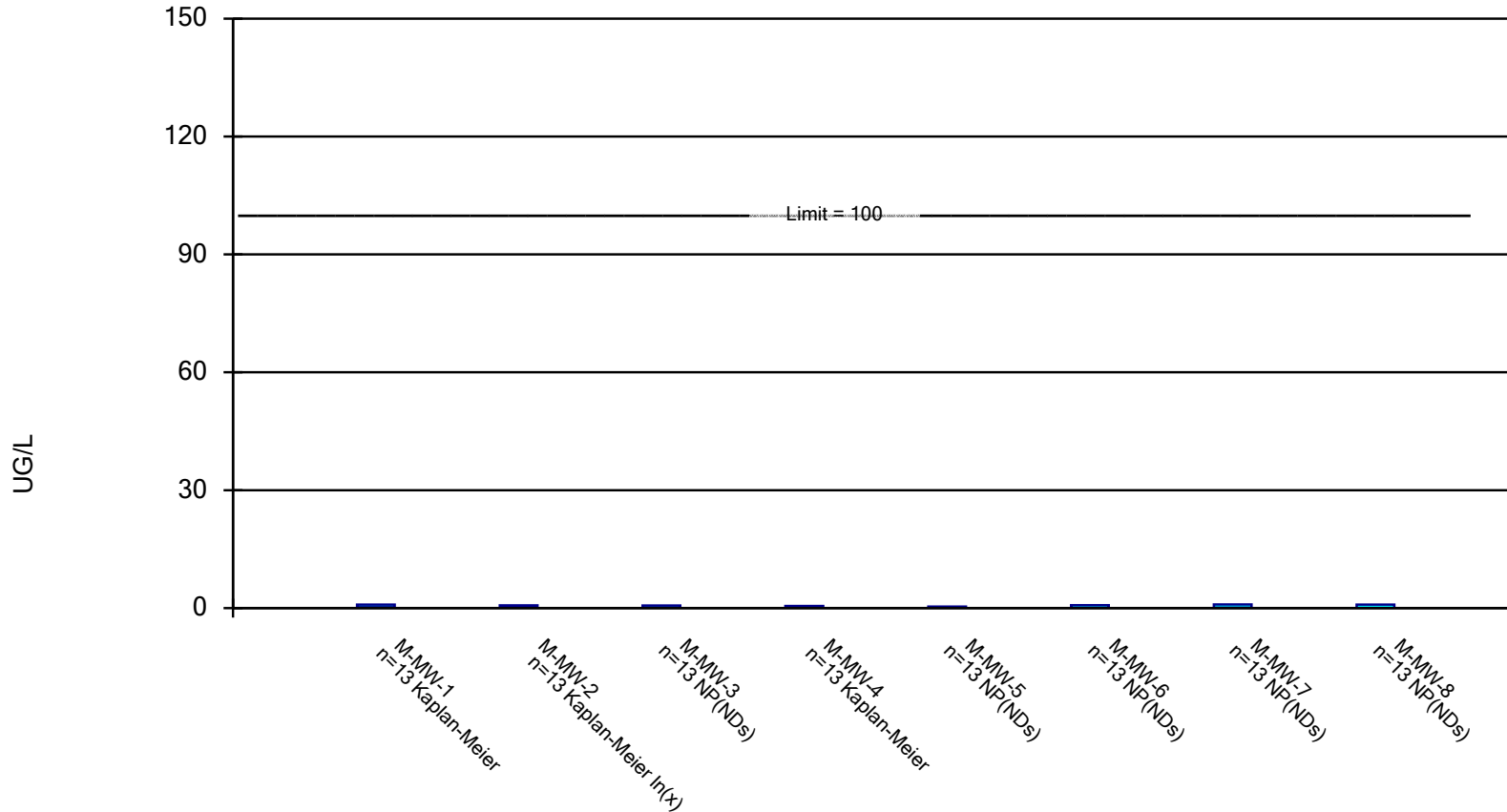


Constituent: CADMIUM, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC Data

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

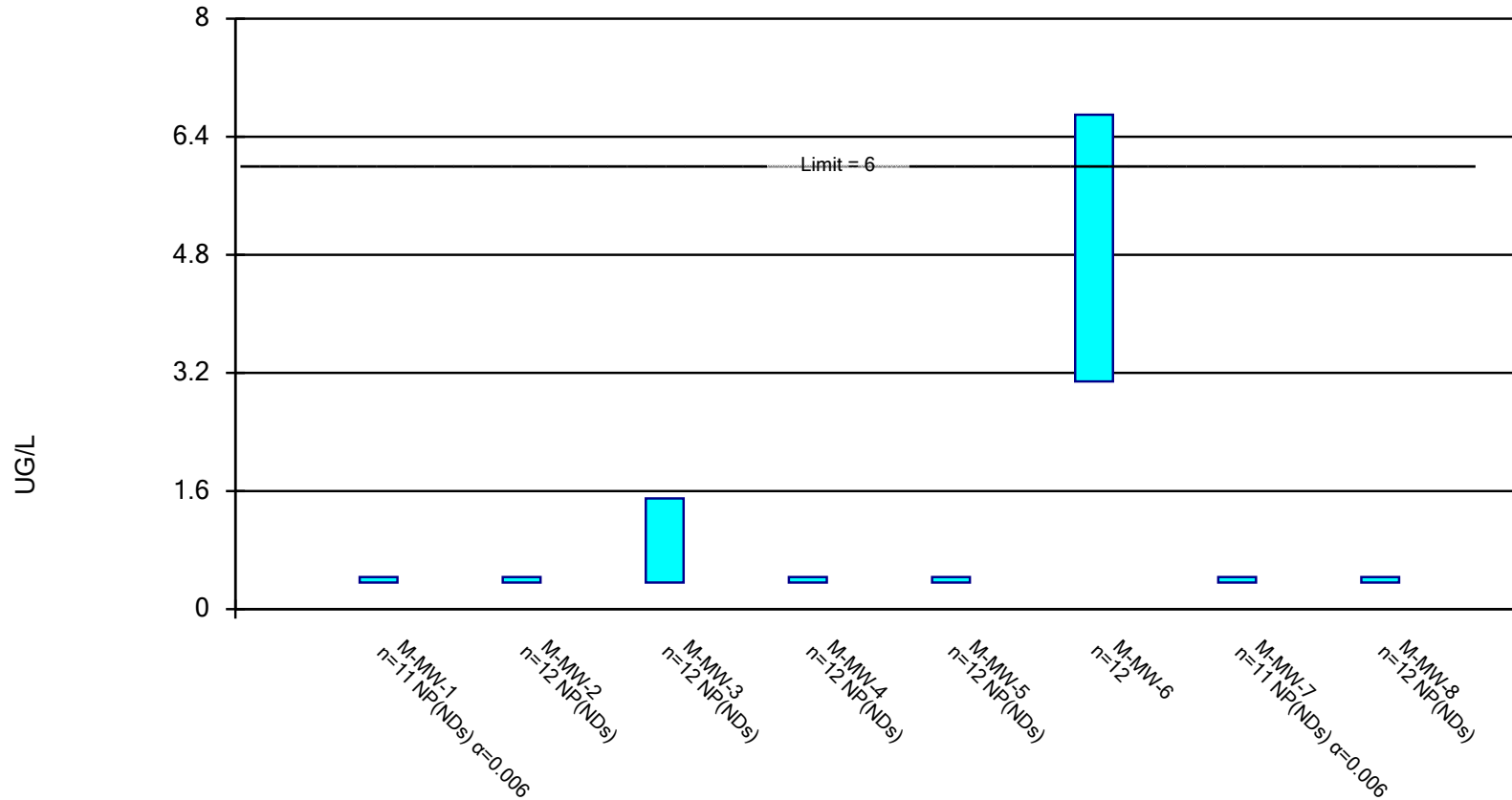


Constituent: CHROMIUM, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC 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.

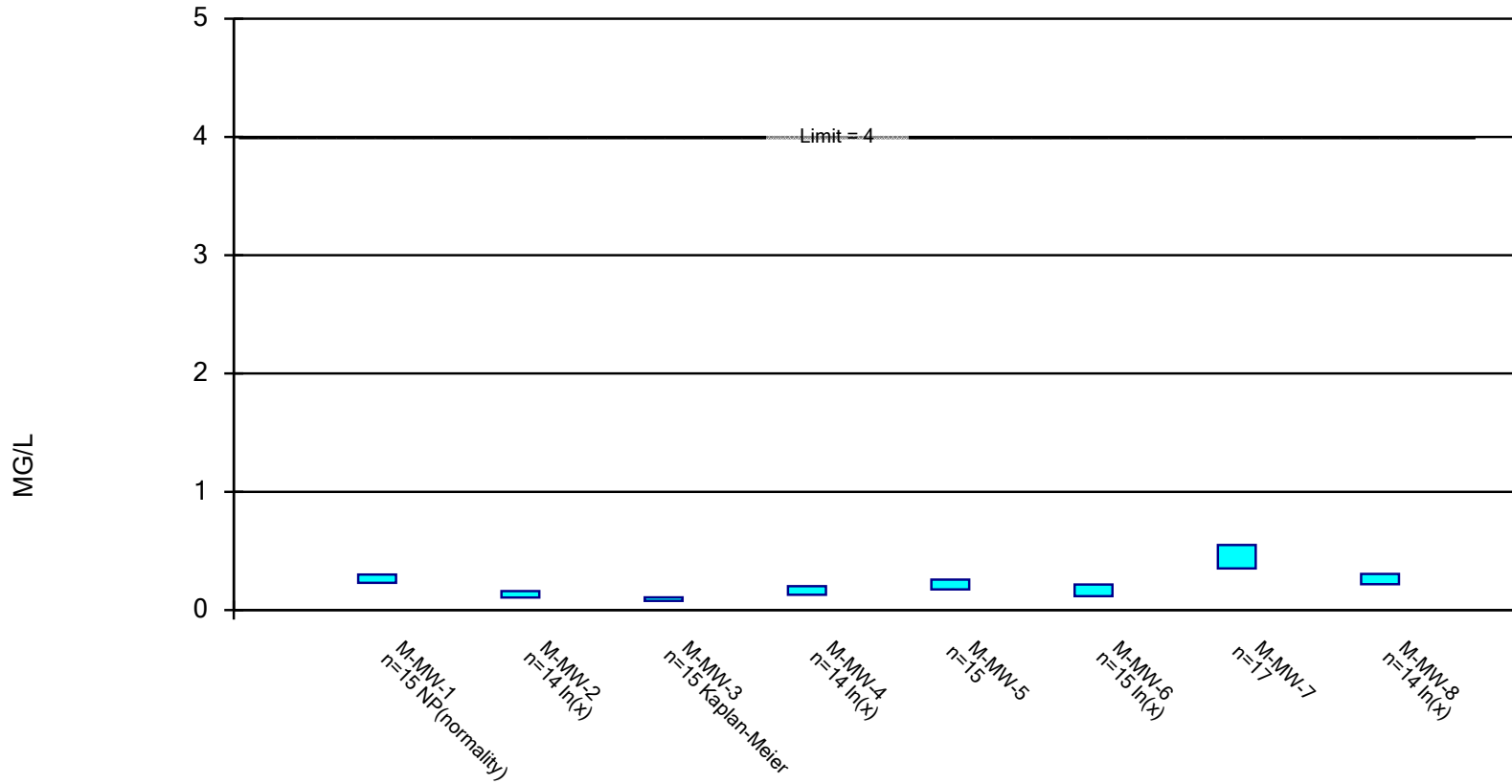


Constituent: COBALT, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC Data

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

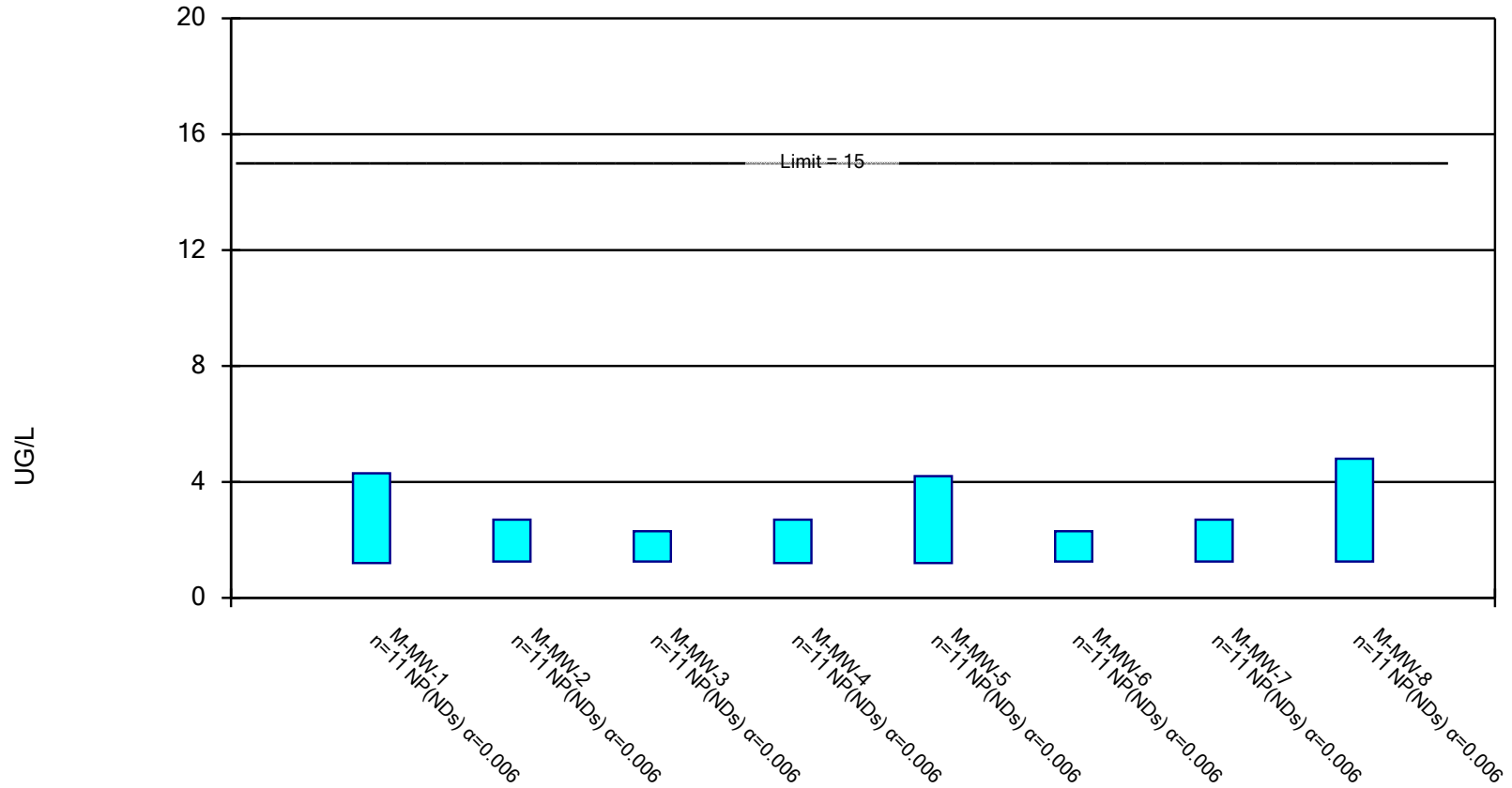


Constituent: FLUORIDE, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

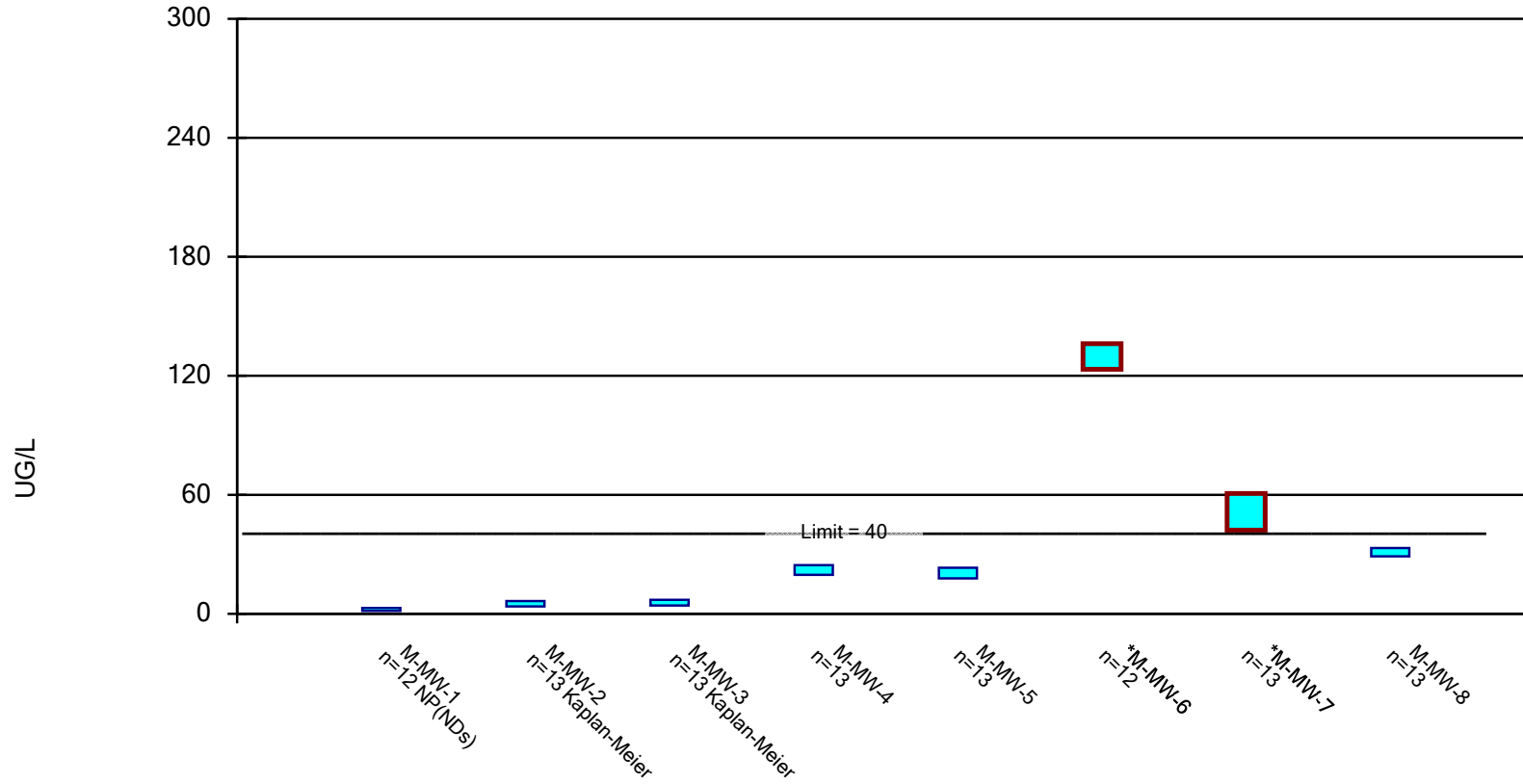


Constituent: LEAD, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC 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.

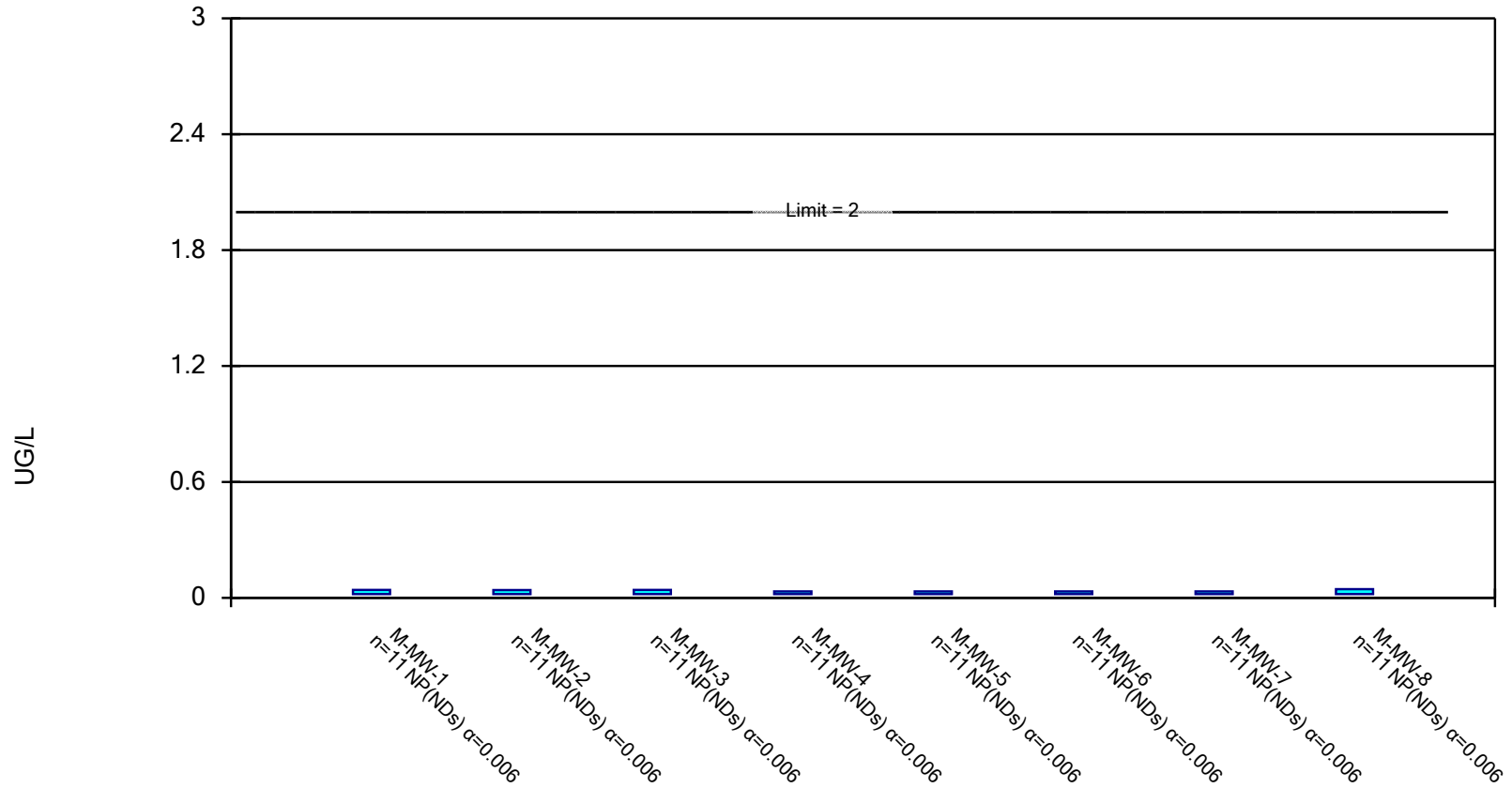


Constituent: LITHIUM, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

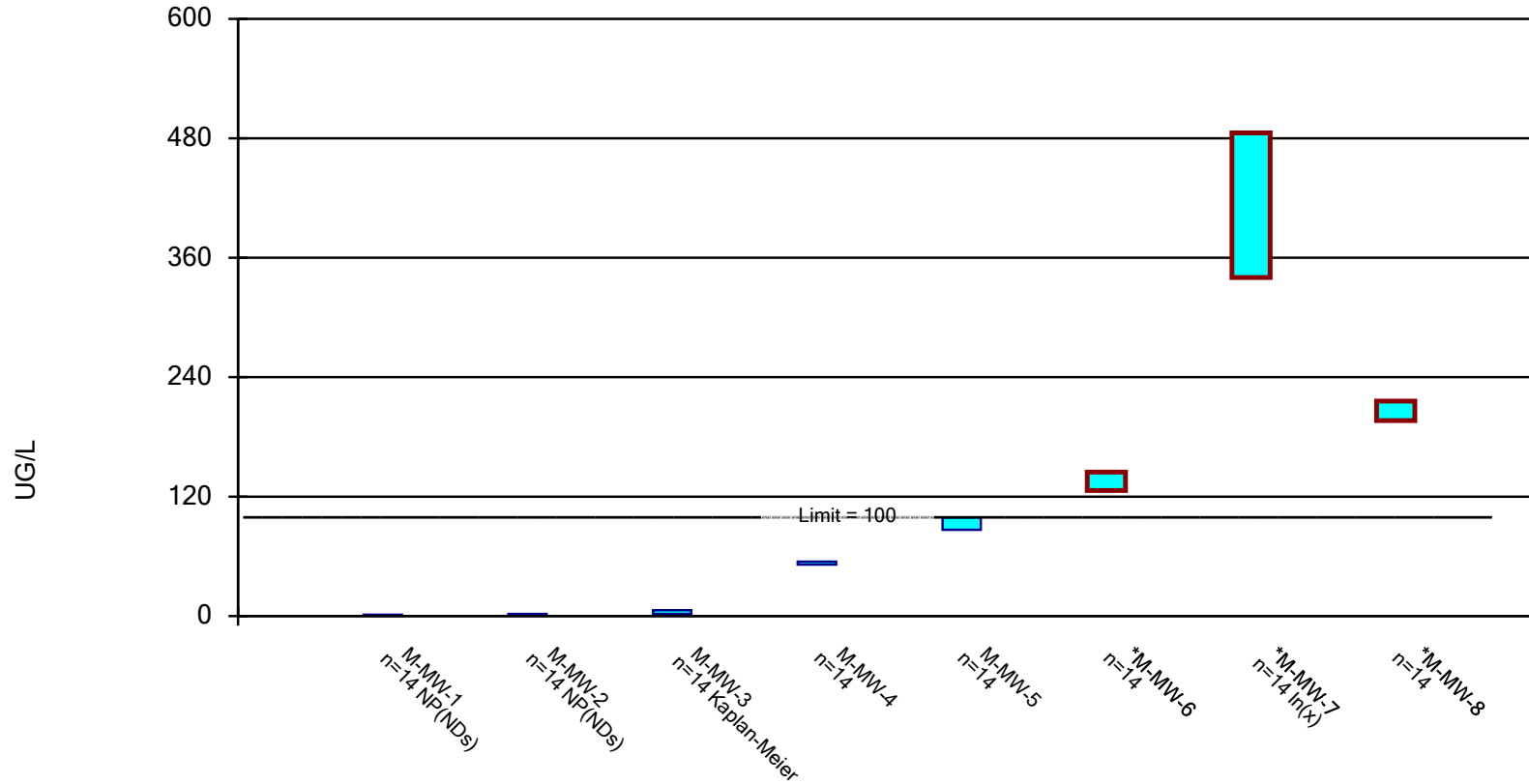


Constituent: MERCURY, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC Data

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

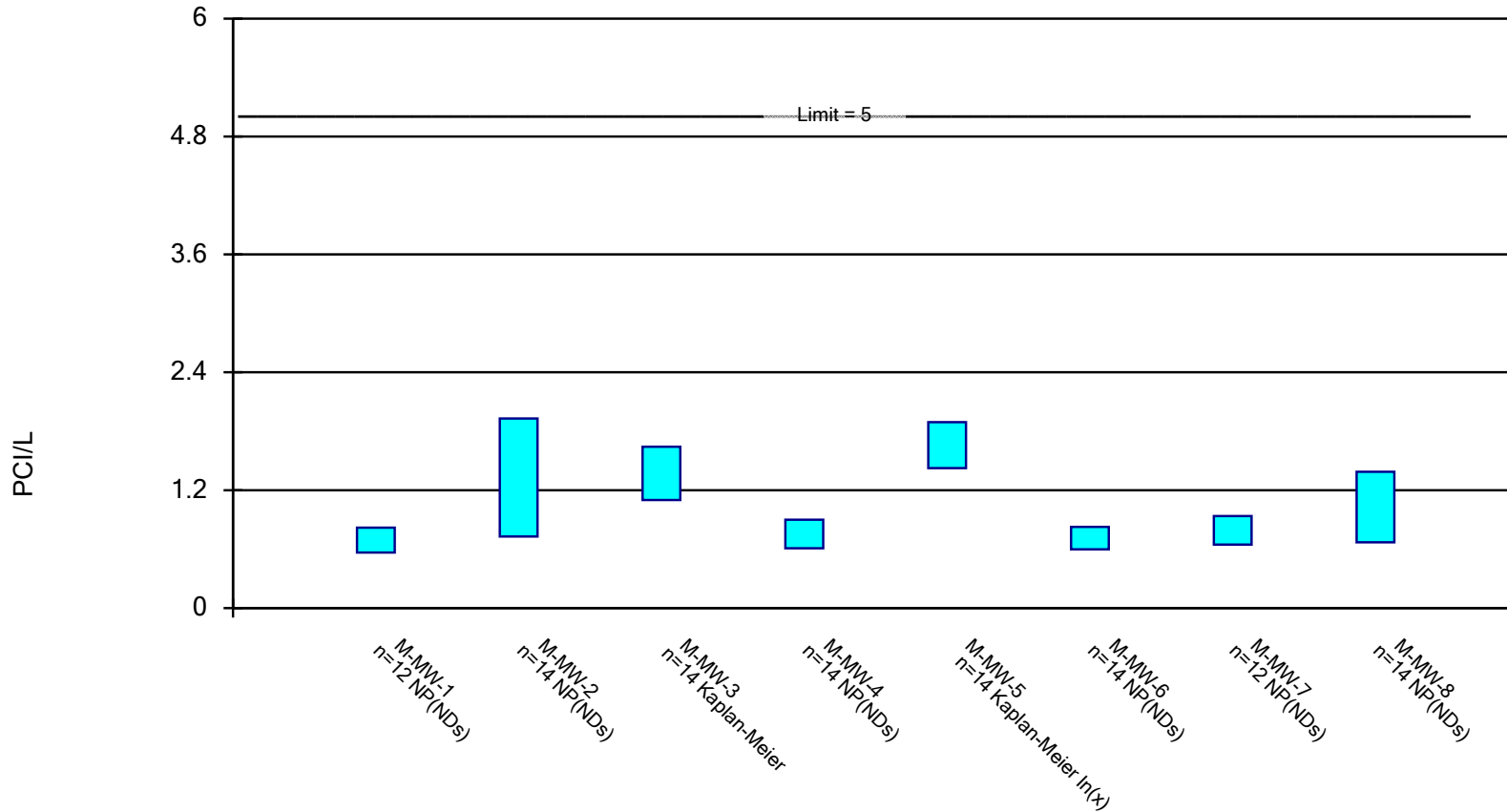


Constituent: MOLYBDENUM, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC 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.

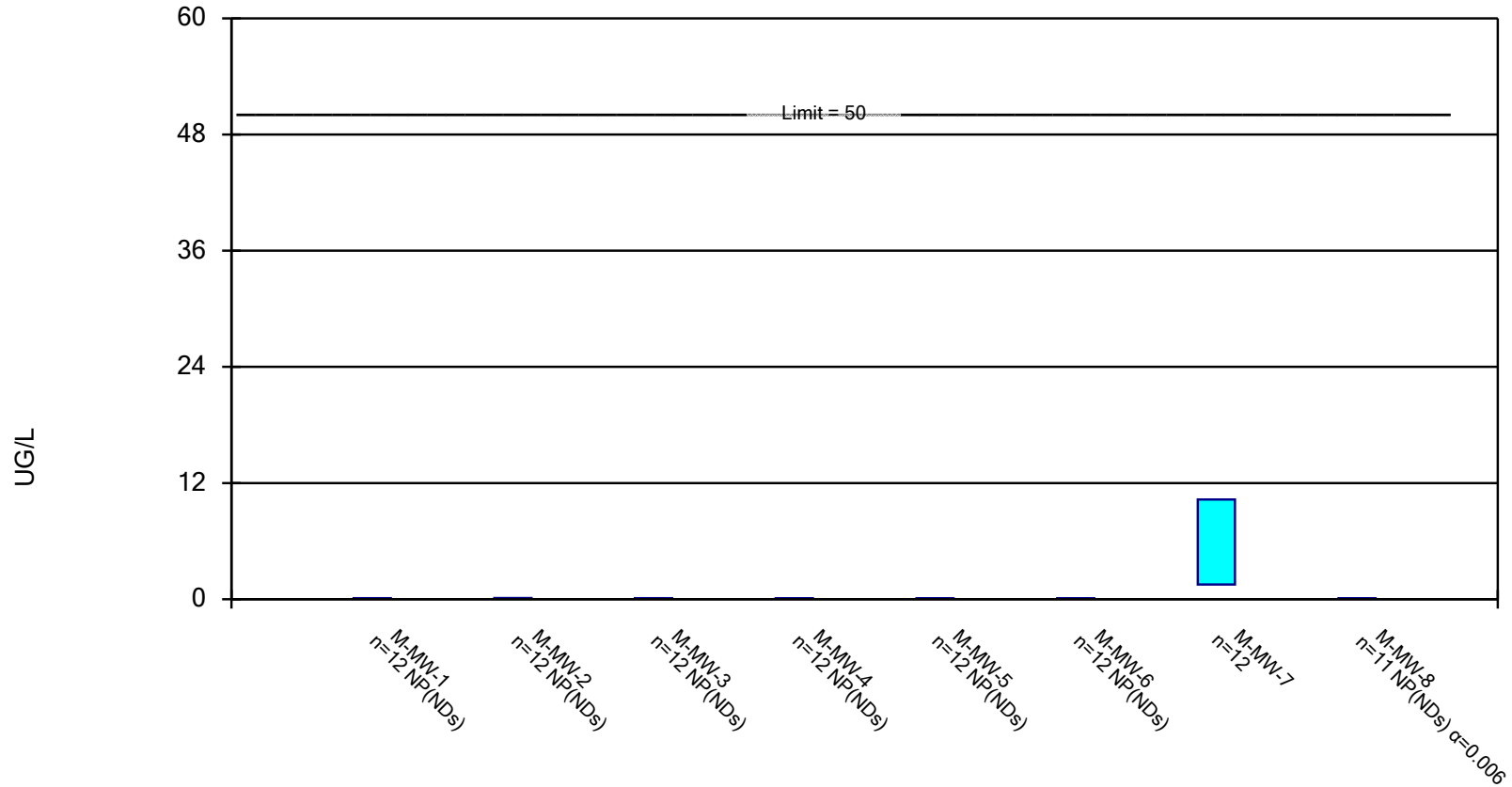


Constituent: Radium [226 + 228] Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC 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.

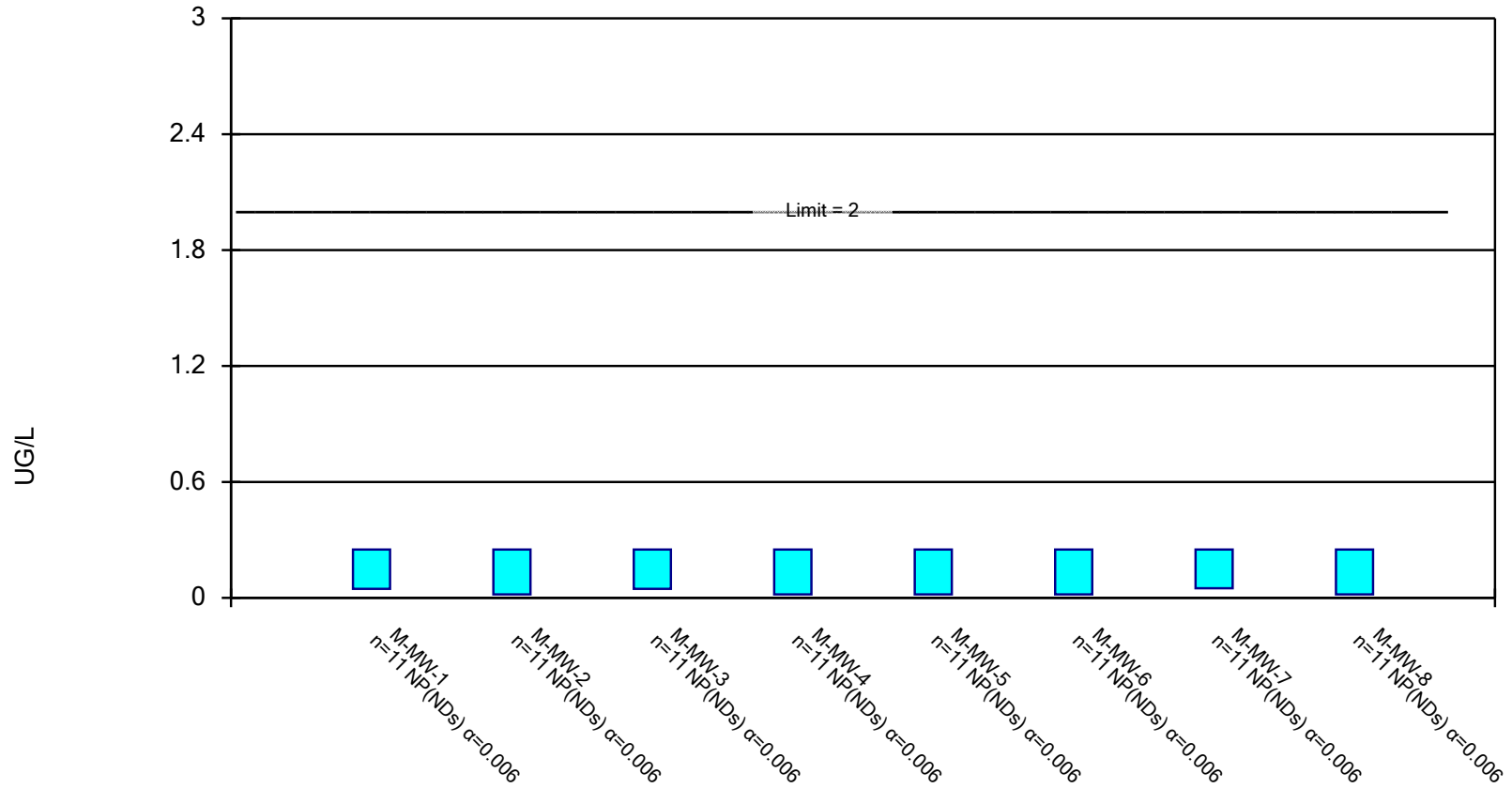


Constituent: SELENIUM, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: THALLIUM, TOTAL Analysis Run 7/8/2020 3:21 PM

Meramec E.C. Client: Ameren Data: MEC Data

Confidence Interval

Meramec E.C. Client: Ameren Data: MEC Data Printed 7/8/2020, 3:26 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)	M-MW-1	0.0485	0.028	6	No	9	77.78	No	0.002	NP (NDs)
ANTIMONY, TOTAL (UG/L)	M-MW-2	0.0485	0.013	6	No	11	90.91	No	0.006	NP (NDs)
ANTIMONY, TOTAL (UG/L)	M-MW-3	0.039	0.013	6	No	11	90.91	No	0.006	NP (NDs)
ANTIMONY, TOTAL (UG/L)	M-MW-4	0.039	0.013	6	No	11	90.91	No	0.006	NP (NDs)
ANTIMONY, TOTAL (UG/L)	M-MW-5	0.0485	0.013	6	No	11	90.91	No	0.006	NP (NDs)
ANTIMONY, TOTAL (UG/L)	M-MW-6	0.066	0.029	6	No	11	54.55	No	0.006	NP (NDs)
ANTIMONY, TOTAL (UG/L)	M-MW-7	0.4198	0.3758	6	No	9	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	M-MW-8	0.37	0.013	6	No	11	72.73	No	0.006	NP (NDs)
ARSENIC, TOTAL (UG/L)	M-MW-1	0.7953	0.5241	10	No	13	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-2	2.035	1.522	10	No	14	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-3	8.013	6.554	10	No	12	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-4	15.4	13.63	10	Yes	13	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-5	22.52	19.48	10	Yes	12	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-6	5.277	2.723	10	No	13	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	M-MW-7	3.7	2.3	10	No	14	0	No	0.01	NP (normality)
ARSENIC, TOTAL (UG/L)	M-MW-8	6.62	5.642	10	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-MW-1	372.5	357.7	2000	No	14	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-MW-2	491	308	2000	No	14	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	M-MW-3	250.7	203.7	2000	No	14	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-MW-4	222.4	208.4	2000	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-MW-5	298.8	247.6	2000	No	14	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-MW-6	71.91	53.05	2000	No	14	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-MW-7	51.05	39.83	2000	No	14	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	M-MW-8	224.3	161.7	2000	No	14	0	No	0.01	Param.
BERYLLIUM, TOTAL (UG/L)	M-MW-1	0.23	0.125	4	No	11	81.82	No	0.006	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	M-MW-2	0.13	0.08	4	No	11	100	No	0.006	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	M-MW-3	0.13	0.08	4	No	11	100	No	0.006	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	M-MW-4	0.28	0.125	4	No	11	72.73	No	0.006	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	M-MW-5	0.13	0.08	4	No	11	100	No	0.006	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	M-MW-6	0.13	0.08	4	No	10	100	No	0.011	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	M-MW-7	0.13	0.08	4	No	10	100	No	0.011	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	M-MW-8	0.13	0.08	4	No	11	100	No	0.006	NP (NDs)
CADMIUM, TOTAL (UG/L)	M-MW-1	0.042	0.009	5	No	11	81.82	No	0.006	NP (NDs)
CADMIUM, TOTAL (UG/L)	M-MW-2	0.0165	0.009	5	No	11	100	No	0.006	NP (NDs)
CADMIUM, TOTAL (UG/L)	M-MW-3	0.0165	0.009	5	No	10	100	No	0.011	NP (NDs)
CADMIUM, TOTAL (UG/L)	M-MW-4	0.0165	0.009	5	No	10	100	No	0.011	NP (NDs)
CADMIUM, TOTAL (UG/L)	M-MW-5	0.048	0.009	5	No	11	81.82	No	0.006	NP (NDs)
CADMIUM, TOTAL (UG/L)	M-MW-6	0.15	0.0145	5	No	11	54.55	No	0.006	NP (NDs)
CADMIUM, TOTAL (UG/L)	M-MW-7	0.2831	0.0764	5	No	11	18.18	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	M-MW-8	0.11	0.009	5	No	11	54.55	No	0.006	NP (NDs)
CHROMIUM, TOTAL (UG/L)	M-MW-1	0.8826	0.2215	100	No	13	30.77	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	M-MW-2	0.7017	0.1697	100	No	13	30.77	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	M-MW-3	0.64	0.039	100	No	13	53.85	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	M-MW-4	0.5503	0.1263	100	No	13	46.15	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	M-MW-5	0.37	0.11	100	No	13	53.85	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	M-MW-6	0.71	0.039	100	No	13	61.54	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	M-MW-7	0.91	0.11	100	No	13	53.85	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	M-MW-8	0.88	0.039	100	No	13	69.23	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	M-MW-1	0.435	0.36	6	No	11	100	No	0.006	NP (NDs)
COBALT, TOTAL (UG/L)	M-MW-2	0.435	0.36	6	No	12	100	No	0.01	NP (NDs)

Confidence Interval

Meramec E.C. Client: Ameren Data: MEC Data Printed 7/8/2020, 3:26 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
COBALT, TOTAL (UG/L)	M-MW-3	1.5	0.36	6	No	12	66.67	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	M-MW-4	0.435	0.36	6	No	12	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	M-MW-5	0.435	0.36	6	No	12	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	M-MW-6	6.698	3.085	6	No	12	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	M-MW-7	0.435	0.36	6	No	11	100	No	0.006	NP (NDs)
COBALT, TOTAL (UG/L)	M-MW-8	0.435	0.36	6	No	12	100	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	M-MW-1	0.3	0.23	4	No	15	0	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	M-MW-2	0.1599	0.1053	4	No	14	7.143	ln(x)	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-3	0.1078	0.07682	4	No	15	26.67	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-4	0.2016	0.1297	4	No	14	7.143	ln(x)	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-5	0.2572	0.1748	4	No	15	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-6	0.2166	0.1175	4	No	15	6.667	ln(x)	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-7	0.5497	0.3515	4	No	17	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	M-MW-8	0.3058	0.2185	4	No	14	0	ln(x)	0.01	Param.
LEAD, TOTAL (UG/L)	M-MW-1	4.3	1.2	15	No	11	81.82	No	0.006	NP (NDs)
LEAD, TOTAL (UG/L)	M-MW-2	2.7	1.25	15	No	11	63.64	No	0.006	NP (NDs)
LEAD, TOTAL (UG/L)	M-MW-3	2.3	1.25	15	No	11	90.91	No	0.006	NP (NDs)
LEAD, TOTAL (UG/L)	M-MW-4	2.7	1.2	15	No	11	81.82	No	0.006	NP (NDs)
LEAD, TOTAL (UG/L)	M-MW-5	4.2	1.2	15	No	11	63.64	No	0.006	NP (NDs)
LEAD, TOTAL (UG/L)	M-MW-6	2.3	1.25	15	No	11	90.91	No	0.006	NP (NDs)
LEAD, TOTAL (UG/L)	M-MW-7	2.7	1.25	15	No	11	81.82	No	0.006	NP (NDs)
LEAD, TOTAL (UG/L)	M-MW-8	4.8	1.25	15	No	11	72.73	No	0.006	NP (NDs)
LITHIUM, TOTAL (UG/L)	M-MW-1	2.95	1.45	40	No	12	91.67	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	M-MW-2	6.398	3.74	40	No	13	30.77	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-3	7.071	4.155	40	No	13	38.46	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-4	24.56	19.67	40	No	13	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-5	23.21	17.85	40	No	13	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-6	136.2	123.3	40	Yes	12	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-7	60.69	42.14	40	Yes	13	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	M-MW-8	33.14	28.99	40	No	13	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	M-MW-1	0.041	0.0195	2	No	11	90.91	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	M-MW-2	0.04	0.0195	2	No	11	90.91	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	M-MW-3	0.041	0.0195	2	No	11	90.91	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	M-MW-4	0.033	0.0195	2	No	11	100	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	M-MW-5	0.033	0.0195	2	No	11	100	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	M-MW-6	0.033	0.0195	2	No	11	100	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	M-MW-7	0.033	0.0195	2	No	11	100	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	M-MW-8	0.045	0.0195	2	No	11	90.91	No	0.006	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	M-MW-1	1.3	0.26	100	No	14	92.86	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	M-MW-2	2.1	0.26	100	No	14	78.57	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	M-MW-3	5.924	2.063	100	No	14	21.43	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	M-MW-4	54.67	51.65	100	No	14	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	M-MW-5	99.04	86.74	100	No	14	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	M-MW-6	144.6	126.2	100	Yes	14	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	M-MW-7	485.4	340.1	100	Yes	14	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	M-MW-8	216	196.4	100	Yes	14	0	No	0.01	Param.
Radium [226 + 228] (PCI/L)	M-MW-1	0.8185	0.565	5	No	12	100	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	M-MW-2	1.93	0.728	5	No	14	71.43	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	M-MW-3	1.642	1.1	5	No	14	42.86	No	0.01	Param.
Radium [226 + 228] (PCI/L)	M-MW-4	0.9	0.6095	5	No	14	85.71	No	0.01	NP (NDs)

Confidence Interval

Meramec E.C. Client: Ameren Data: MEC Data Printed 7/8/2020, 3:26 PM

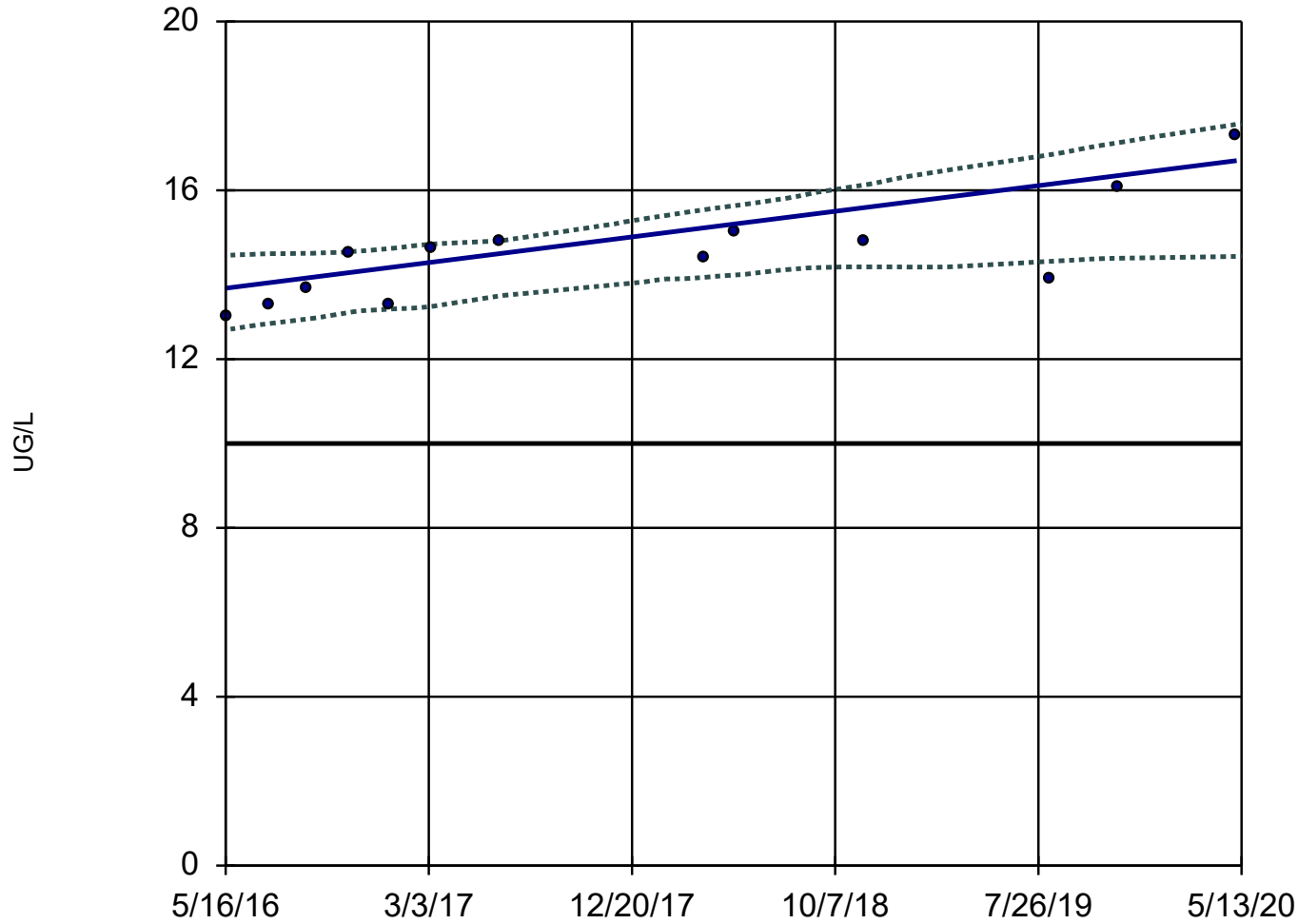
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Radium [226 + 228] (PCI/L)	M-MW-5	1.892	1.425	5	No	14	50	ln(x)	0.01	Param.
Radium [226 + 228] (PCI/L)	M-MW-6	0.827	0.5985	5	No	14	100	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	M-MW-7	0.937	0.6455	5	No	12	100	No	0.01	NP (NDs)
Radium [226 + 228] (PCI/L)	M-MW-8	1.387	0.67	5	No	14	78.57	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-1	0.1	0.043	50	No	12	83.33	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-2	0.12	0.043	50	No	12	83.33	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-3	0.1	0.043	50	No	12	83.33	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-4	0.093	0.043	50	No	12	83.33	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-5	0.093	0.0425	50	No	12	91.67	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-6	0.09	0.0425	50	No	12	91.67	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	M-MW-7	10.3	1.518	50	No	12	8.333	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	M-MW-8	0.09	0.043	50	No	11	81.82	No	0.006	NP (NDs)
THALLIUM, TOTAL (UG/L)	M-MW-1	0.25	0.0465	2	No	11	81.82	No	0.006	NP (NDs)
THALLIUM, TOTAL (UG/L)	M-MW-2	0.25	0.018	2	No	11	100	No	0.006	NP (NDs)
THALLIUM, TOTAL (UG/L)	M-MW-3	0.25	0.0465	2	No	11	81.82	No	0.006	NP (NDs)
THALLIUM, TOTAL (UG/L)	M-MW-4	0.25	0.018	2	No	11	100	No	0.006	NP (NDs)
THALLIUM, TOTAL (UG/L)	M-MW-5	0.25	0.018	2	No	11	100	No	0.006	NP (NDs)
THALLIUM, TOTAL (UG/L)	M-MW-6	0.25	0.018	2	No	11	90.91	No	0.006	NP (NDs)
THALLIUM, TOTAL (UG/L)	M-MW-7	0.25	0.0495	2	No	11	72.73	No	0.006	NP (NDs)
THALLIUM, TOTAL (UG/L)	M-MW-8	0.25	0.018	2	No	11	100	No	0.006	NP (NDs)

APPENDIX B

**Sanitas Trending Confidence
Bands Statistical Output**

Sen's Slope and 95% Confidence Band

M-MW-4



n = 13

Slope = 0.7608
units per year.

Mann-Kendall
statistic = 52
critical = 39

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

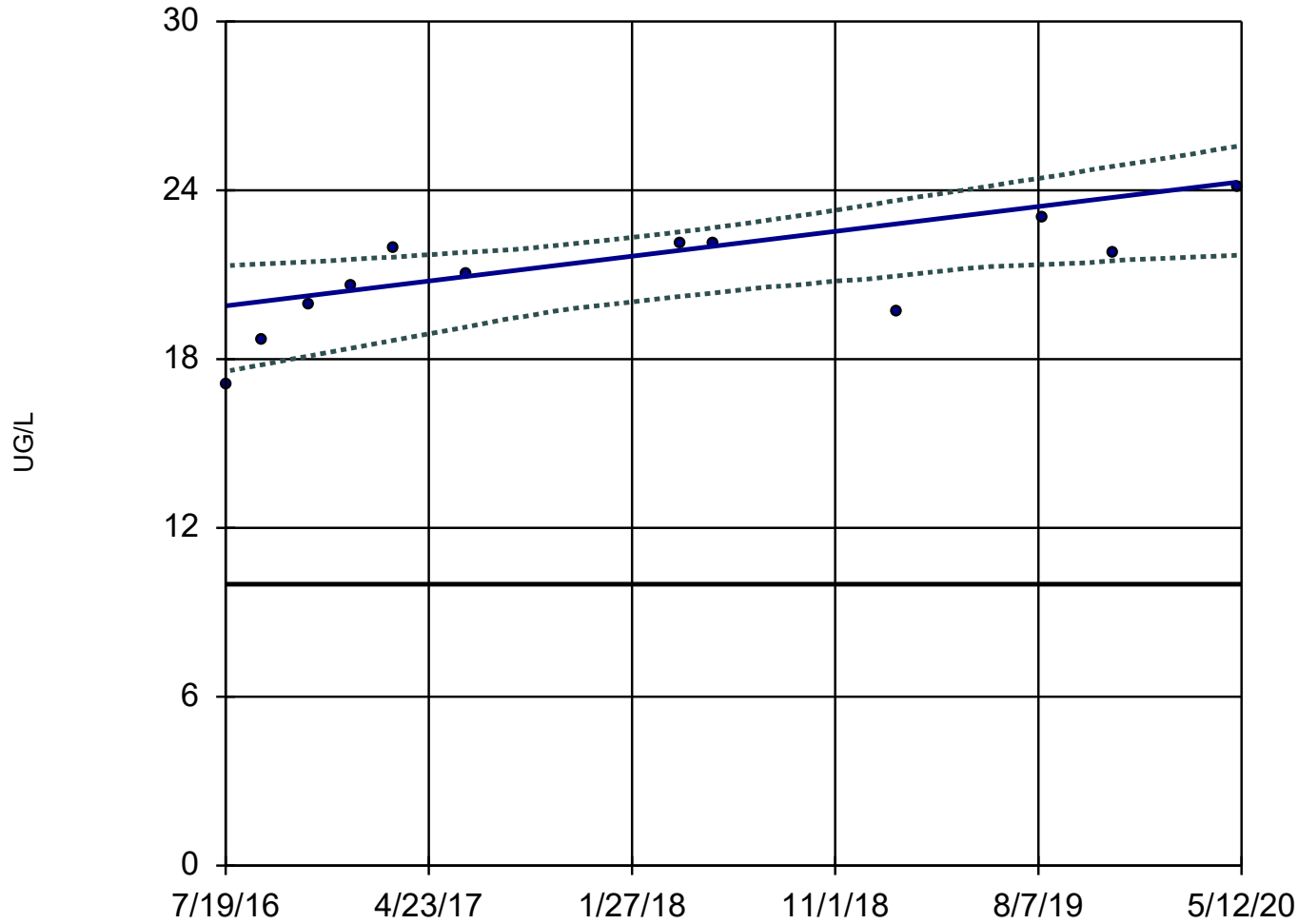
GWPS = 10.

Constituent: ARSENIC, TOTAL Analysis Run 7/8/2020 3:26 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-5



n = 12

Slope = 1.156
units per year.

Mann-Kendall
statistic = 43
critical = 35

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

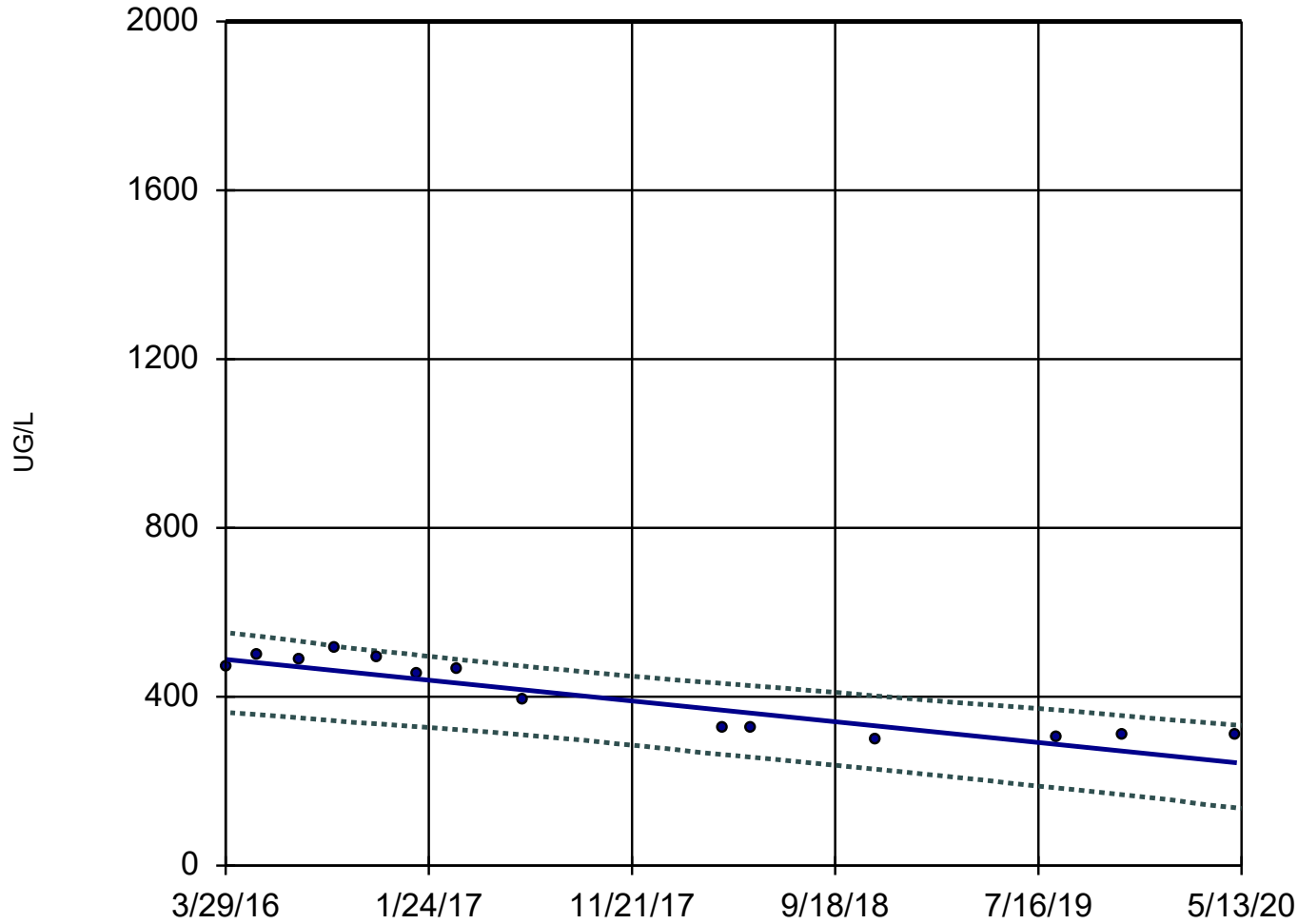
GWPS = 10.

Constituent: ARSENIC, TOTAL Analysis Run 7/8/2020 3:26 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-2



n = 14

Slope = -59.68
units per year.

Mann-Kendall
statistic = -63
critical = -44

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

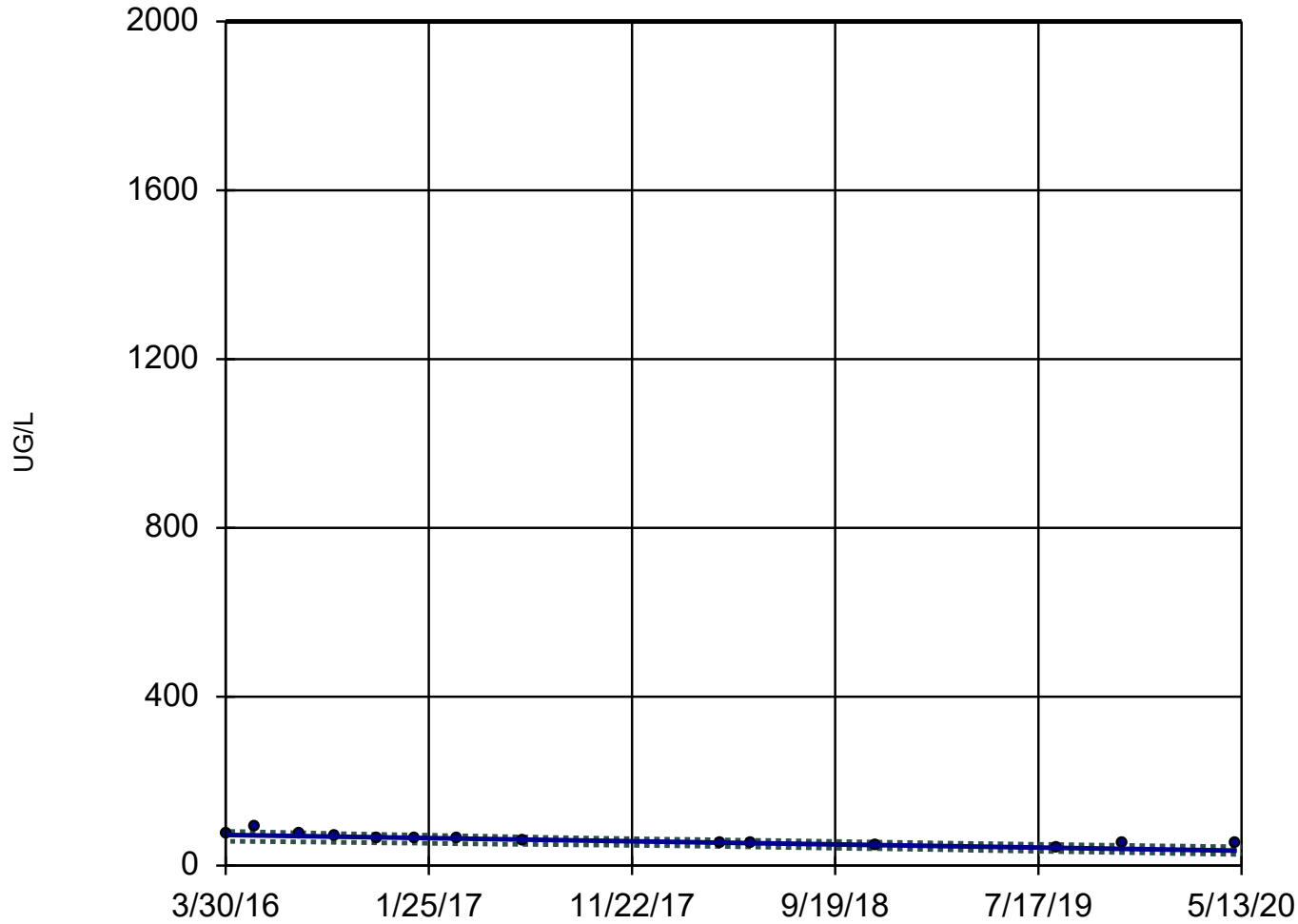
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 7/8/2020 3:26 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-6



n = 14

Slope = -9.057
units per year.

Mann-Kendall
statistic = -79
critical = -44

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

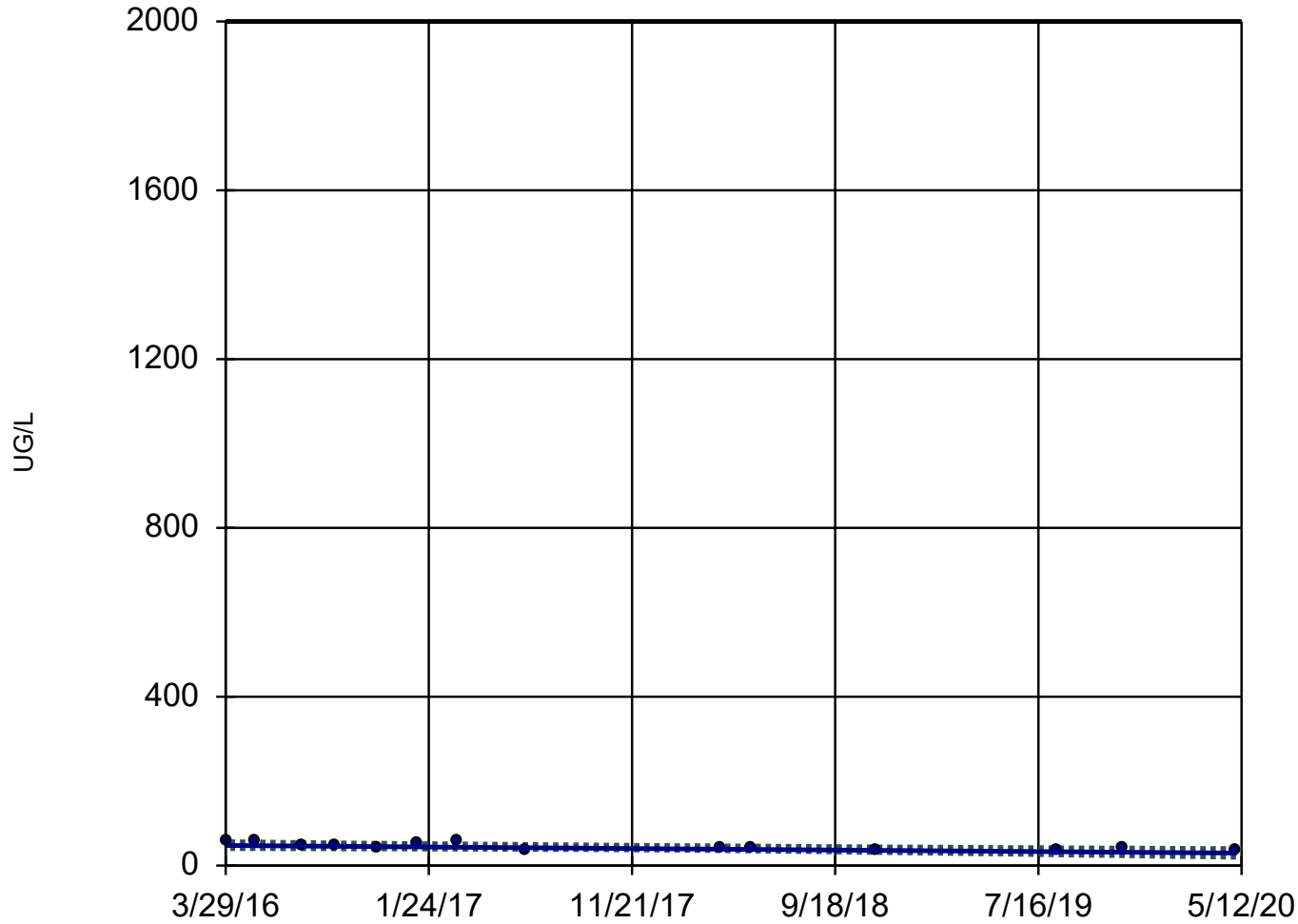
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 7/8/2020 3:27 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-7



n = 14

Slope = -4.409
units per year.

Mann-Kendall
statistic = -51
critical = -44

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

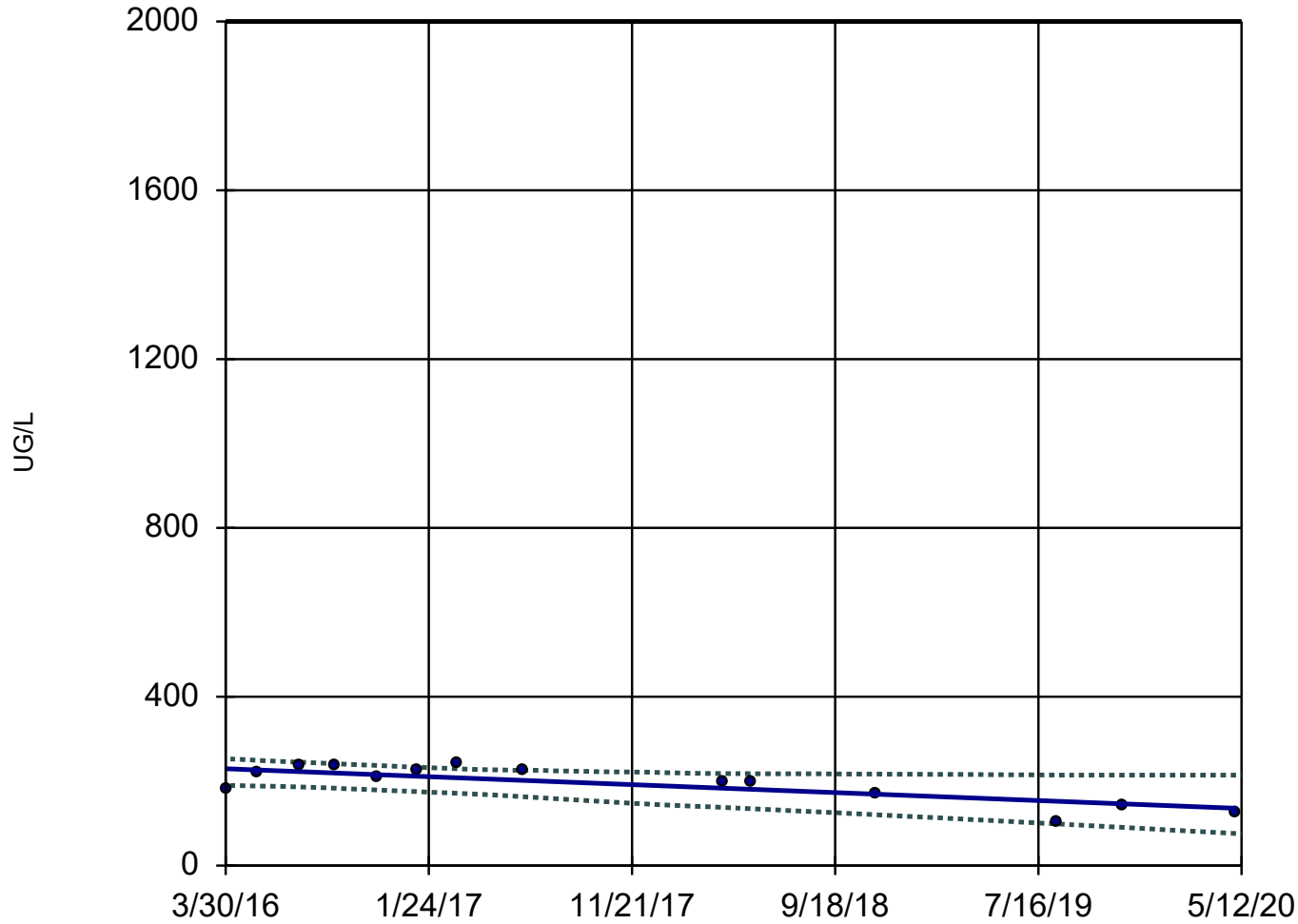
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 7/8/2020 3:27 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-8



n = 14

Slope = -22.83
units per year.

Mann-Kendall
statistic = -45
critical = -44

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

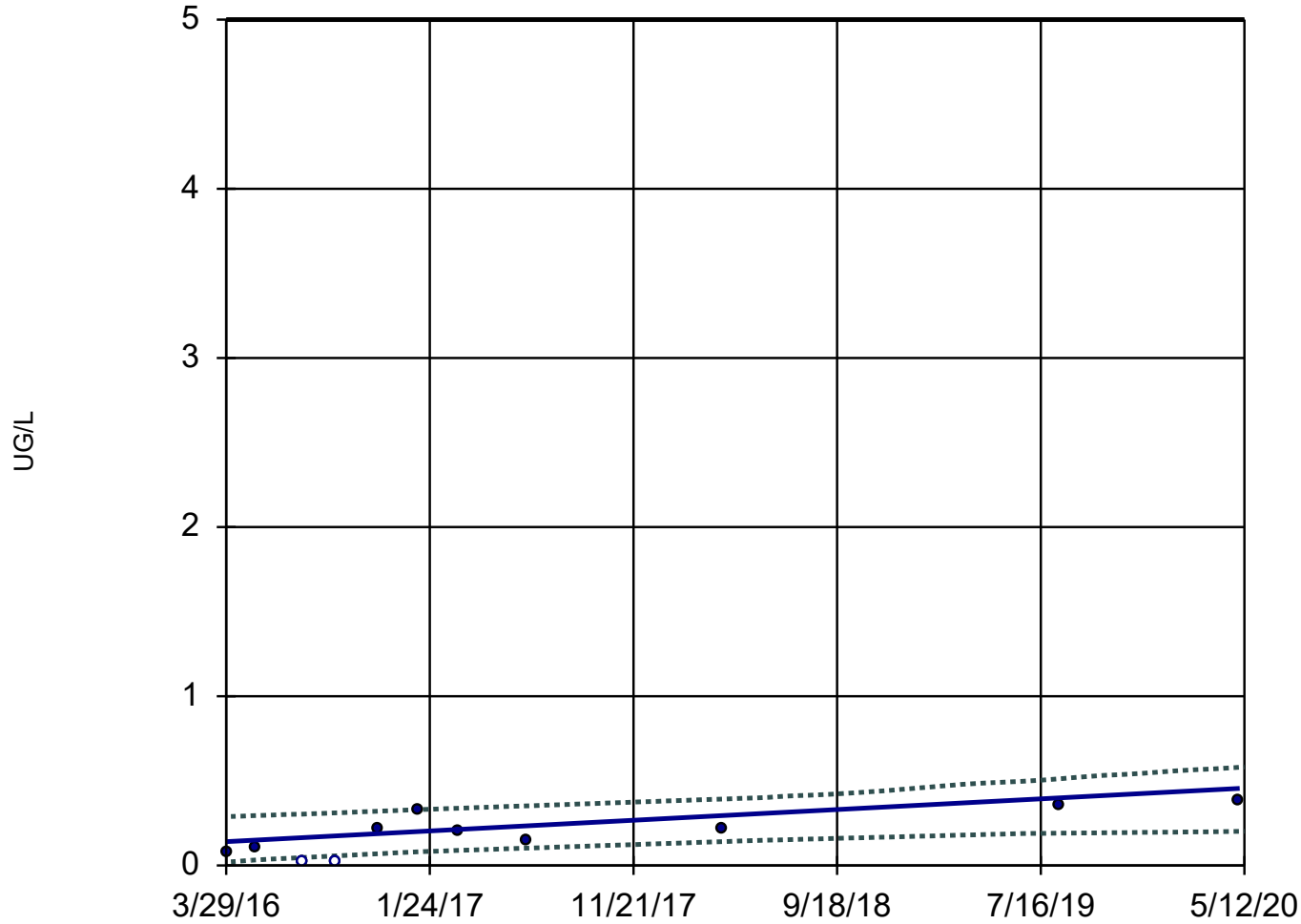
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 7/8/2020 3:27 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-7



n = 11

Slope = 0.07687
units per year.

Mann-Kendall
statistic = 33
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

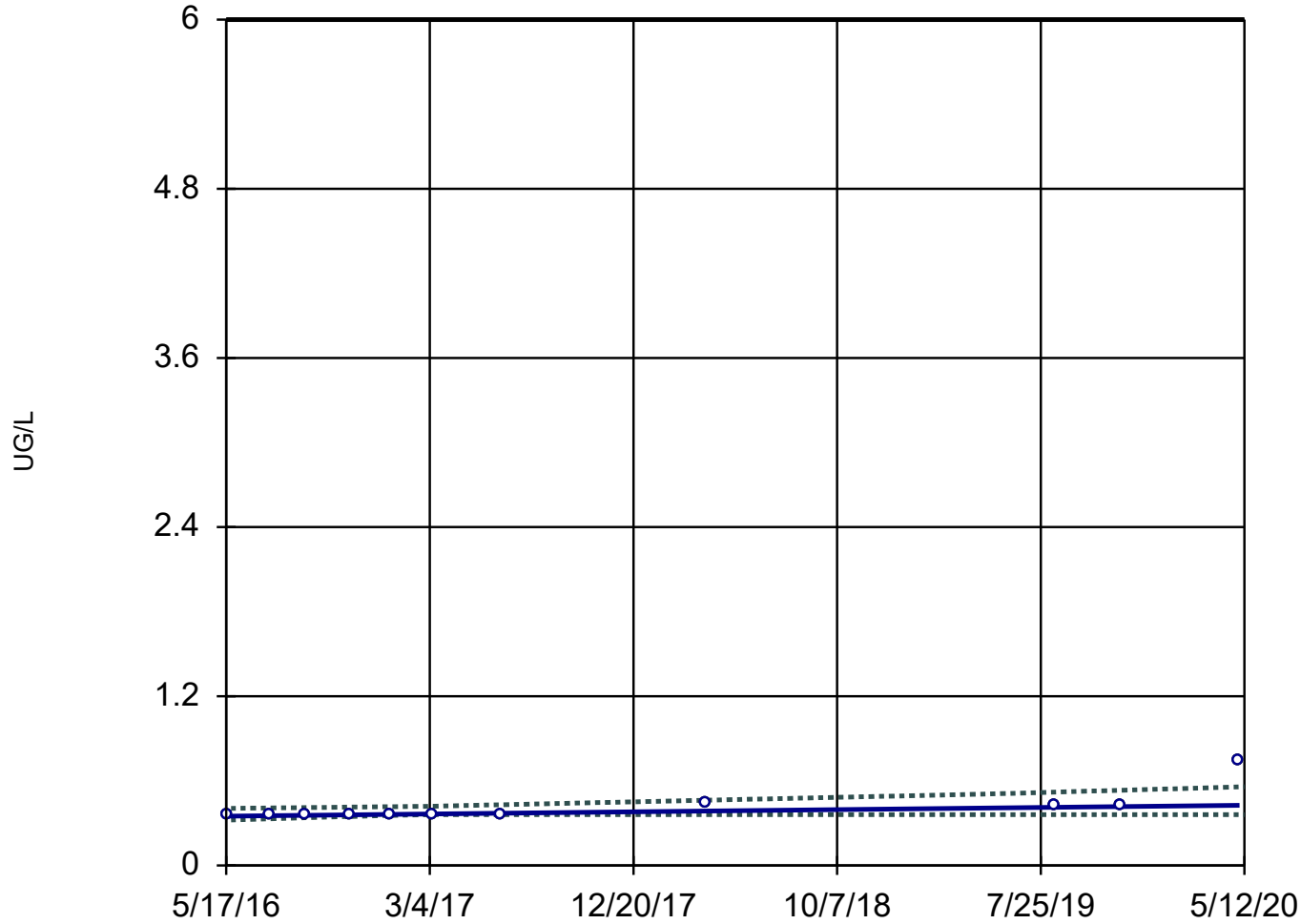
GWPS = 5.

Constituent: CADMIUM, TOTAL Analysis Run 7/8/2020 3:27 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-1



n = 11

Slope = 0.01952
units per year.

Mann-Kendall
statistic = 39
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

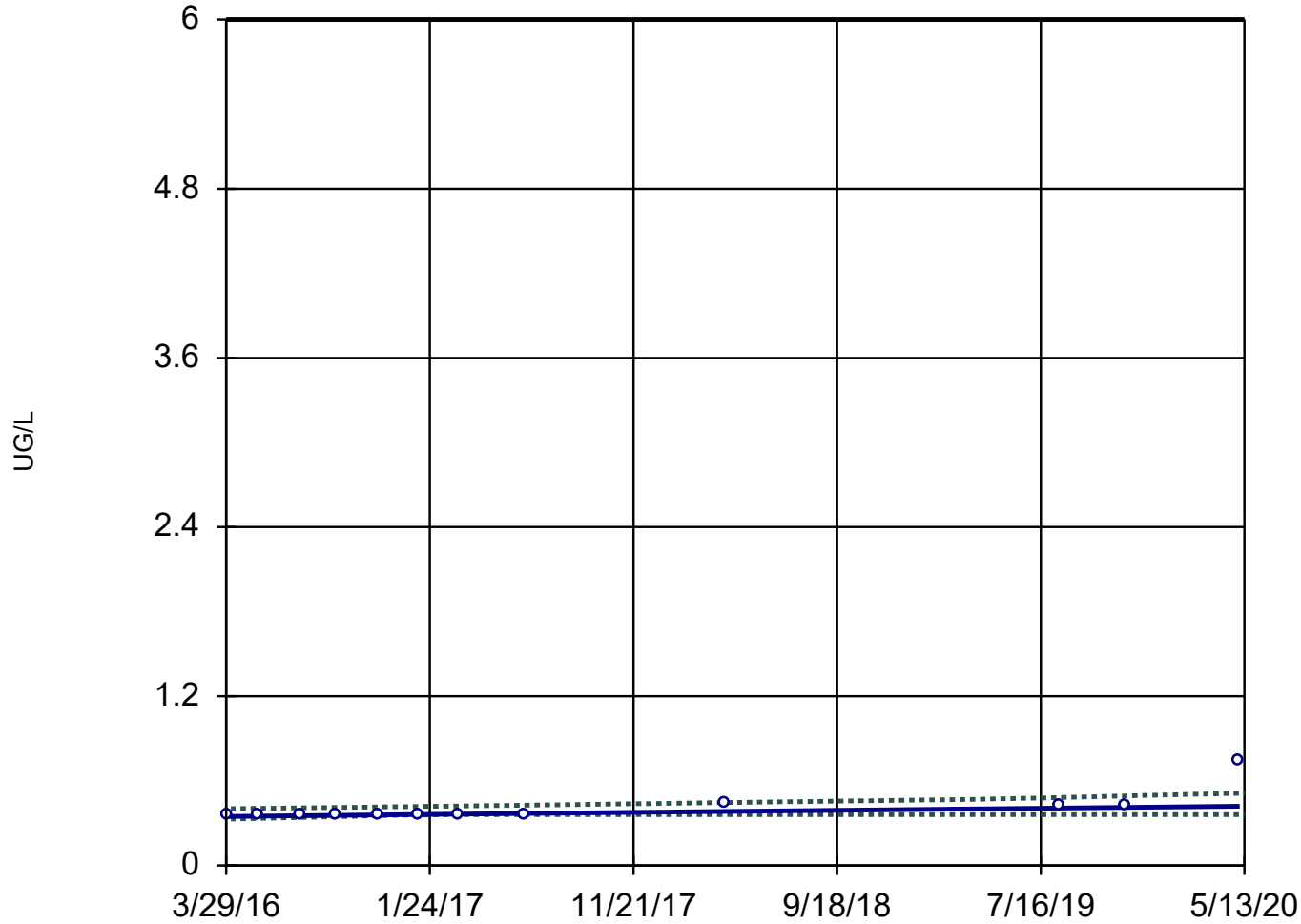
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 7/8/2020 3:27 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-2



n = 12

Slope = 0.01788
units per year.

Mann-Kendall
statistic = 45
critical = 35

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

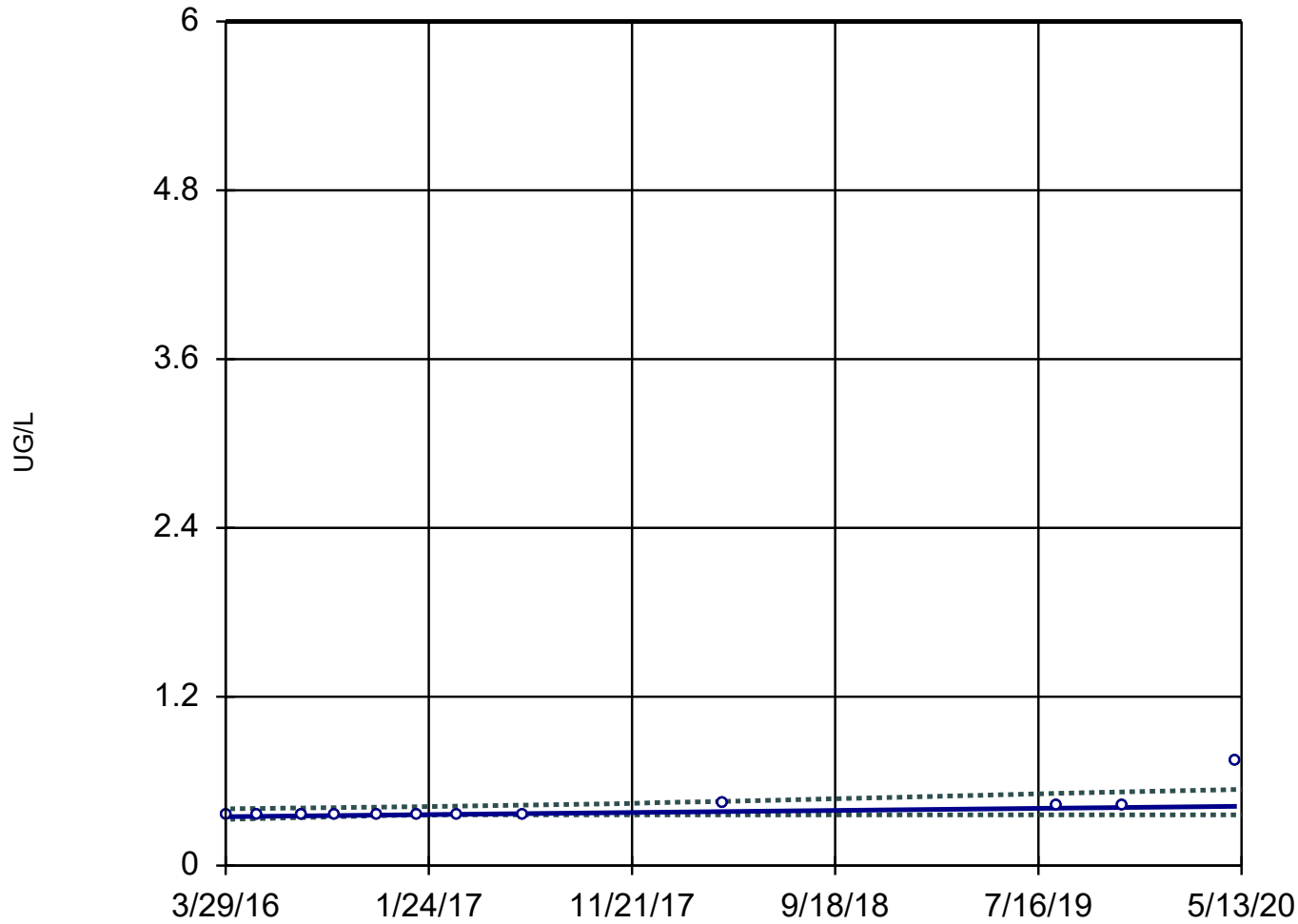
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 7/8/2020 3:27 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-4



n = 12

Slope = 0.01789
units per year.

Mann-Kendall
statistic = 45
critical = 35

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

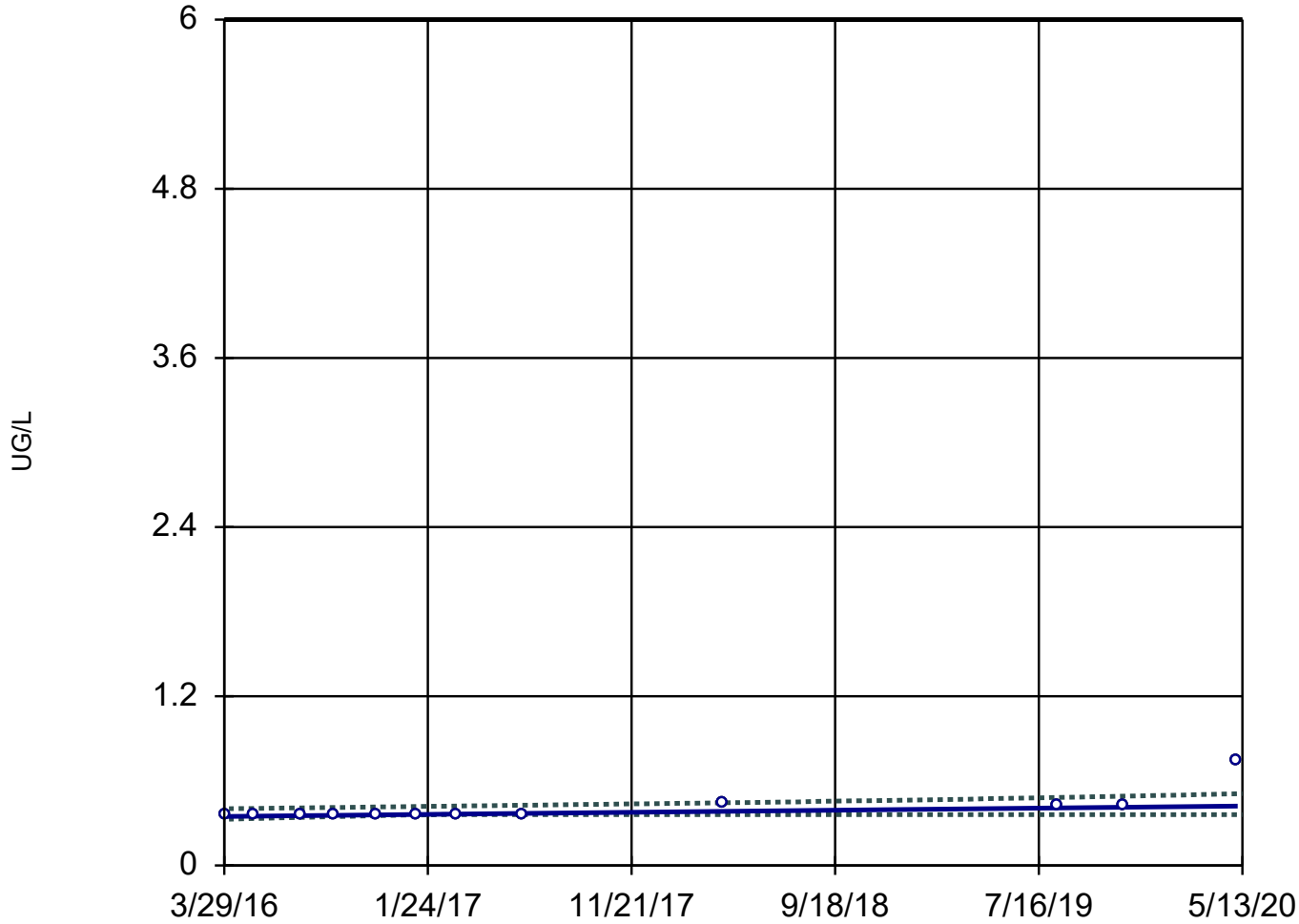
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 7/8/2020 3:27 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-5



n = 12

Slope = 0.01789
units per year.

Mann-Kendall
statistic = 45
critical = 35

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

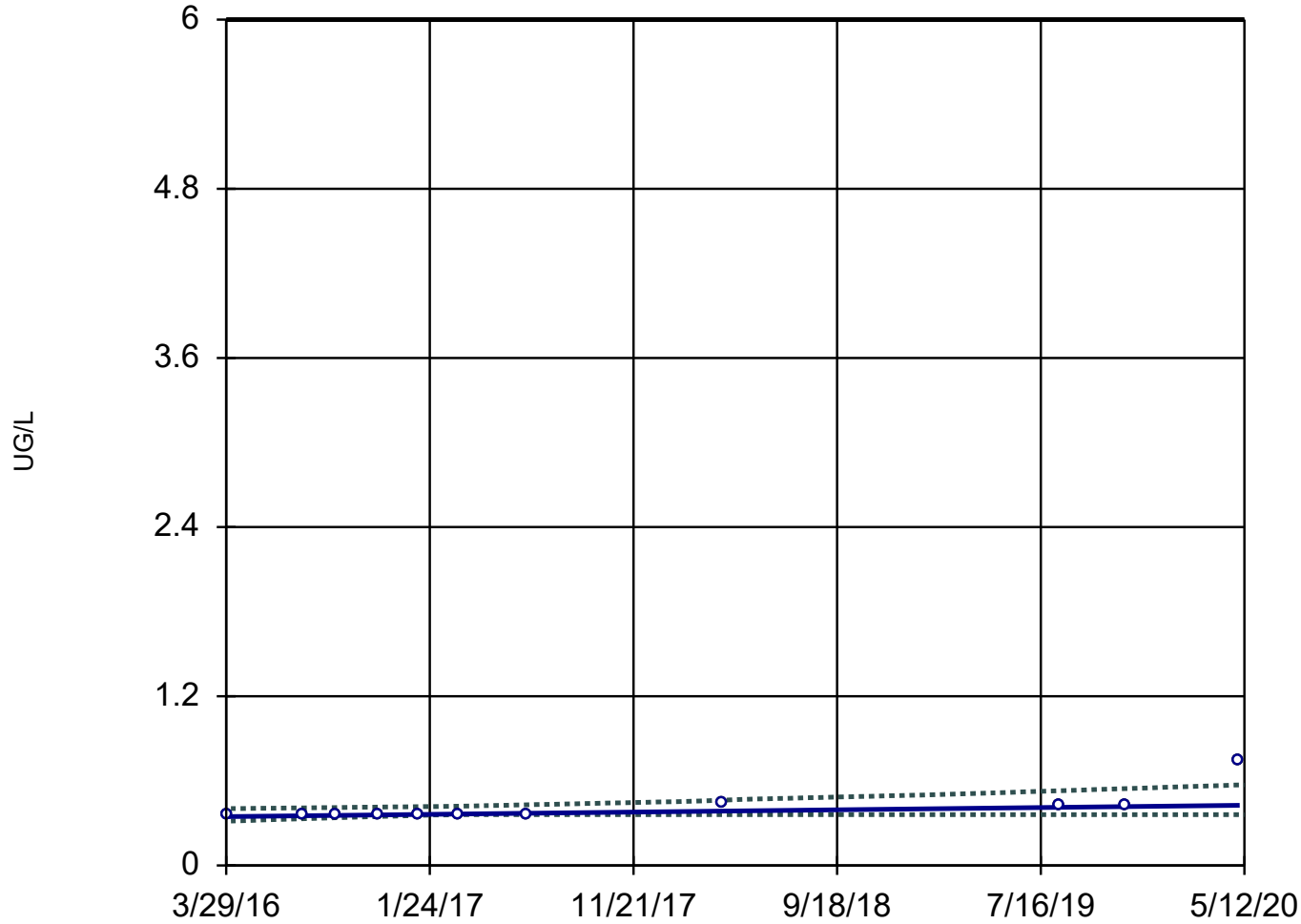
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 7/8/2020 3:27 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-7



n = 11

Slope = 0.01955
units per year.

Mann-Kendall
statistic = 39
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

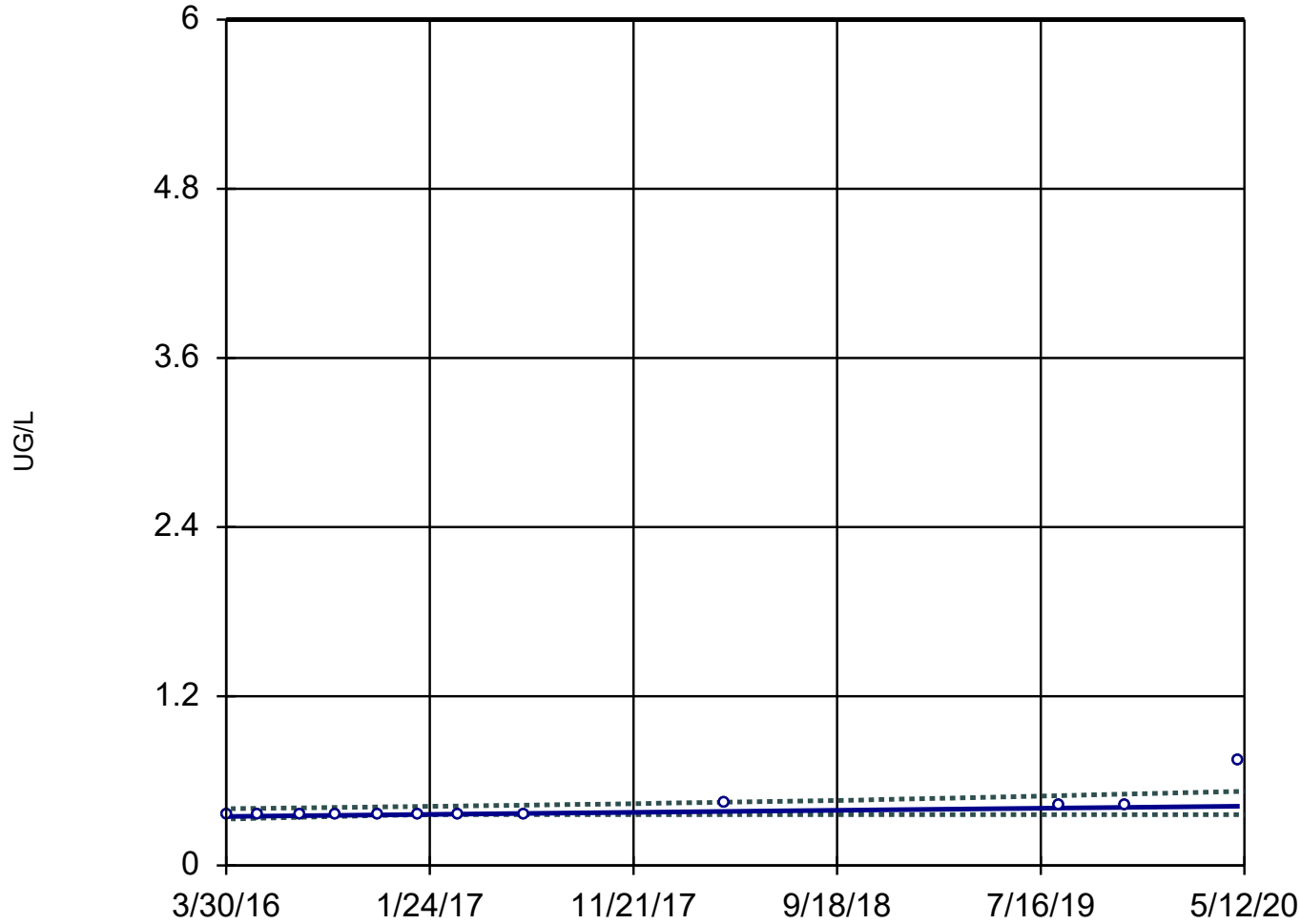
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 7/8/2020 3:27 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-8



n = 12

Slope = 0.01789
units per year.

Mann-Kendall
statistic = 45
critical = 35

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

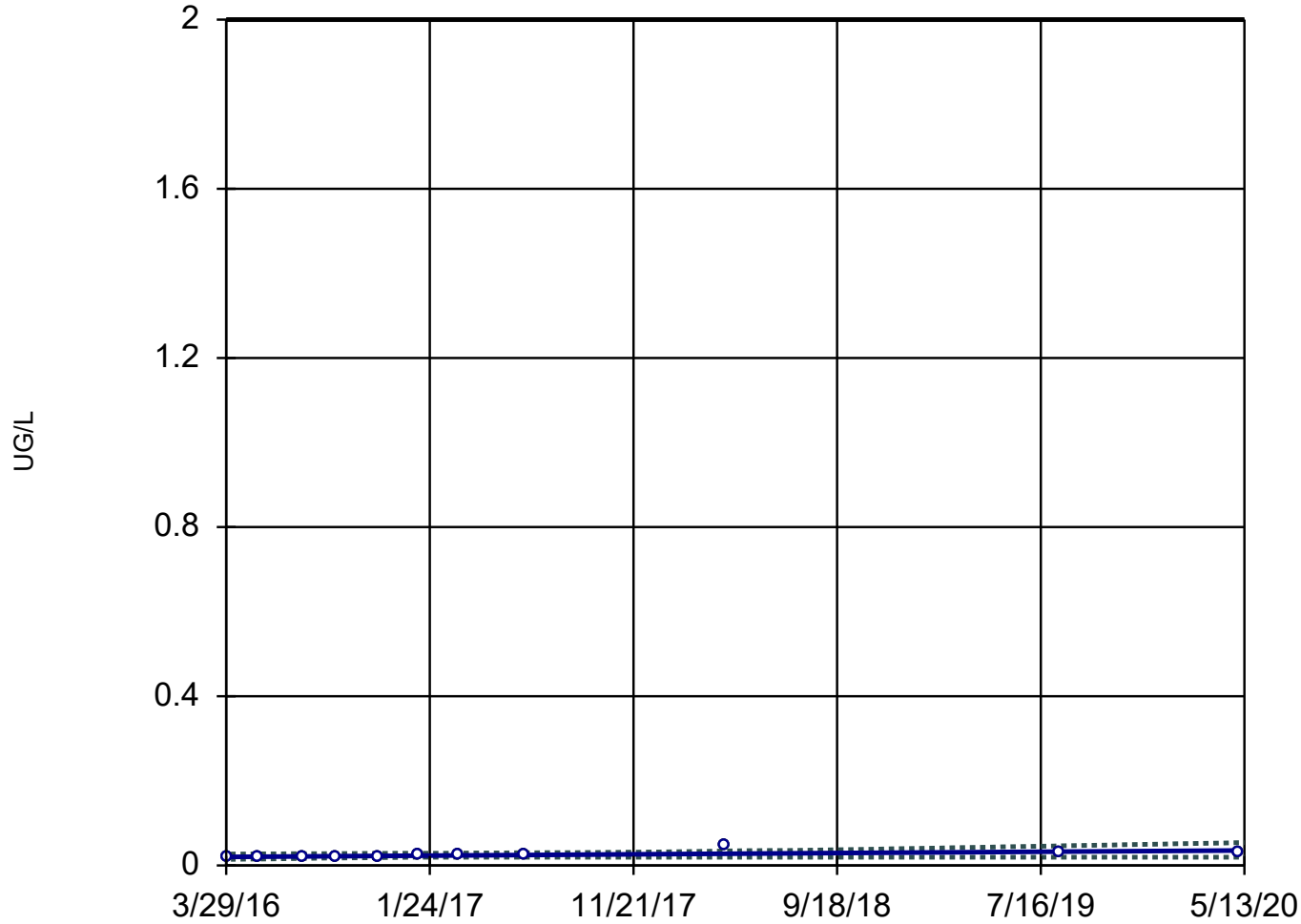
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 7/8/2020 3:27 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-4



n = 11

Slope = 0.003724
units per year.

Mann-Kendall
statistic = 34
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

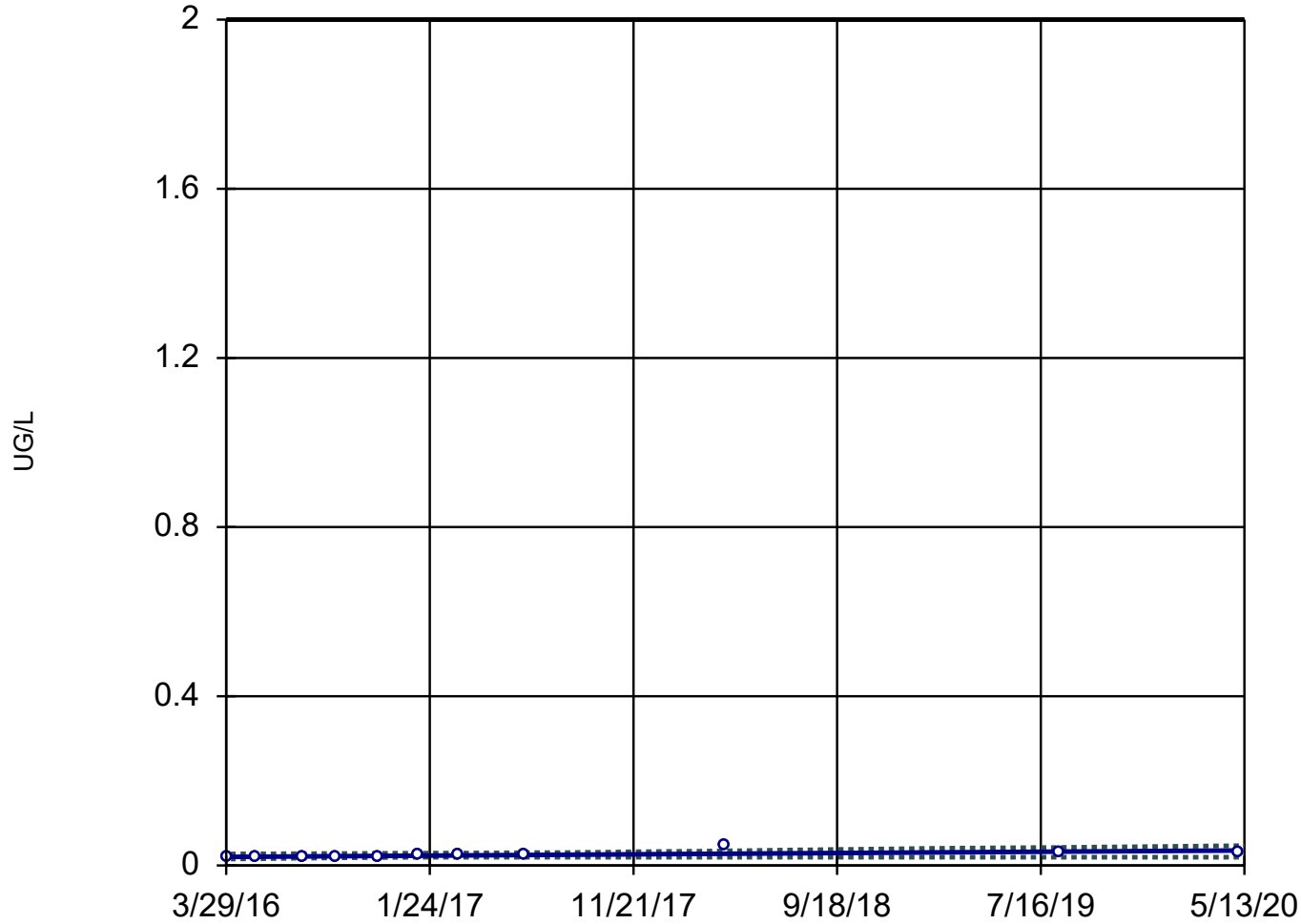
GWPS = 2.

Constituent: MERCURY, TOTAL Analysis Run 7/8/2020 3:27 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-5



n = 11

Slope = 0.003724
units per year.

Mann-Kendall
statistic = 34
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

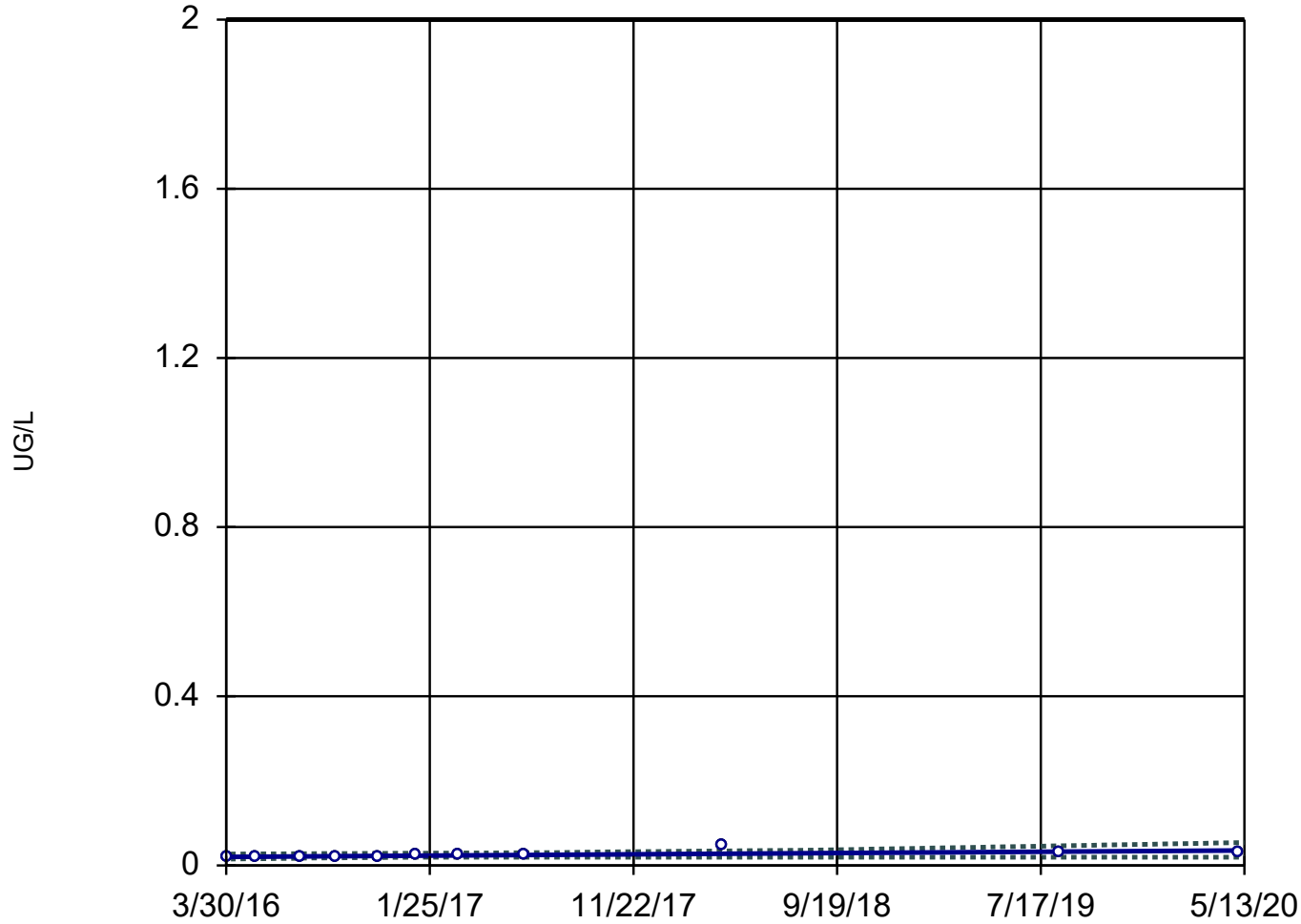
GWPS = 2.

Constituent: MERCURY, TOTAL Analysis Run 7/8/2020 3:28 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-6



n = 11

Slope = 0.003735
units per year.

Mann-Kendall
statistic = 34
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

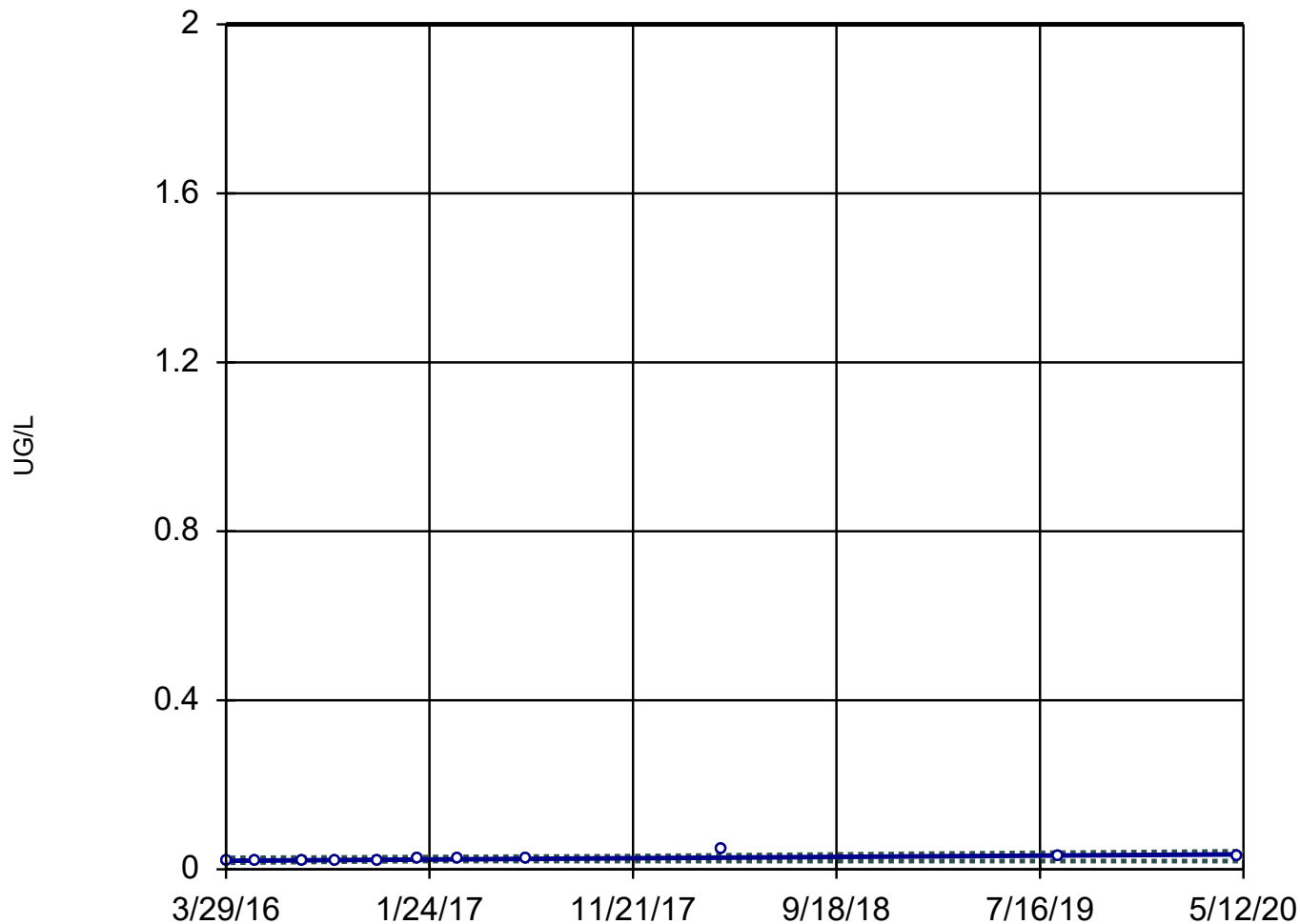
GWPS = 2.

Constituent: MERCURY, TOTAL Analysis Run 7/8/2020 3:28 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-7



n = 11

Slope = 0.003724
units per year.

Mann-Kendall
statistic = 34
critical = 31

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

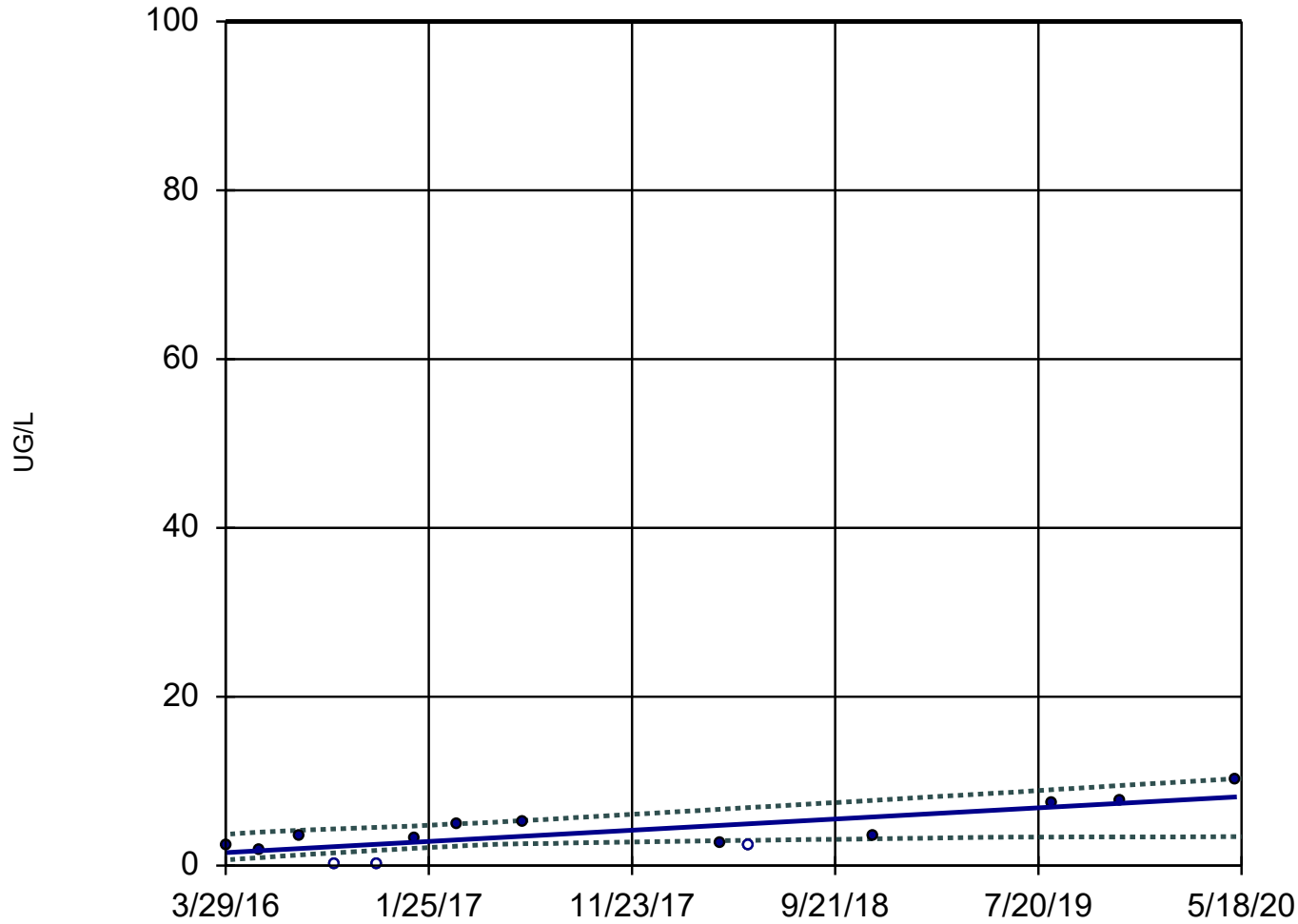
GWPS = 2.

Constituent: MERCURY, TOTAL Analysis Run 7/8/2020 3:28 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-3



n = 14

Slope = 1.604
units per year.

Mann-Kendall
statistic = 51
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

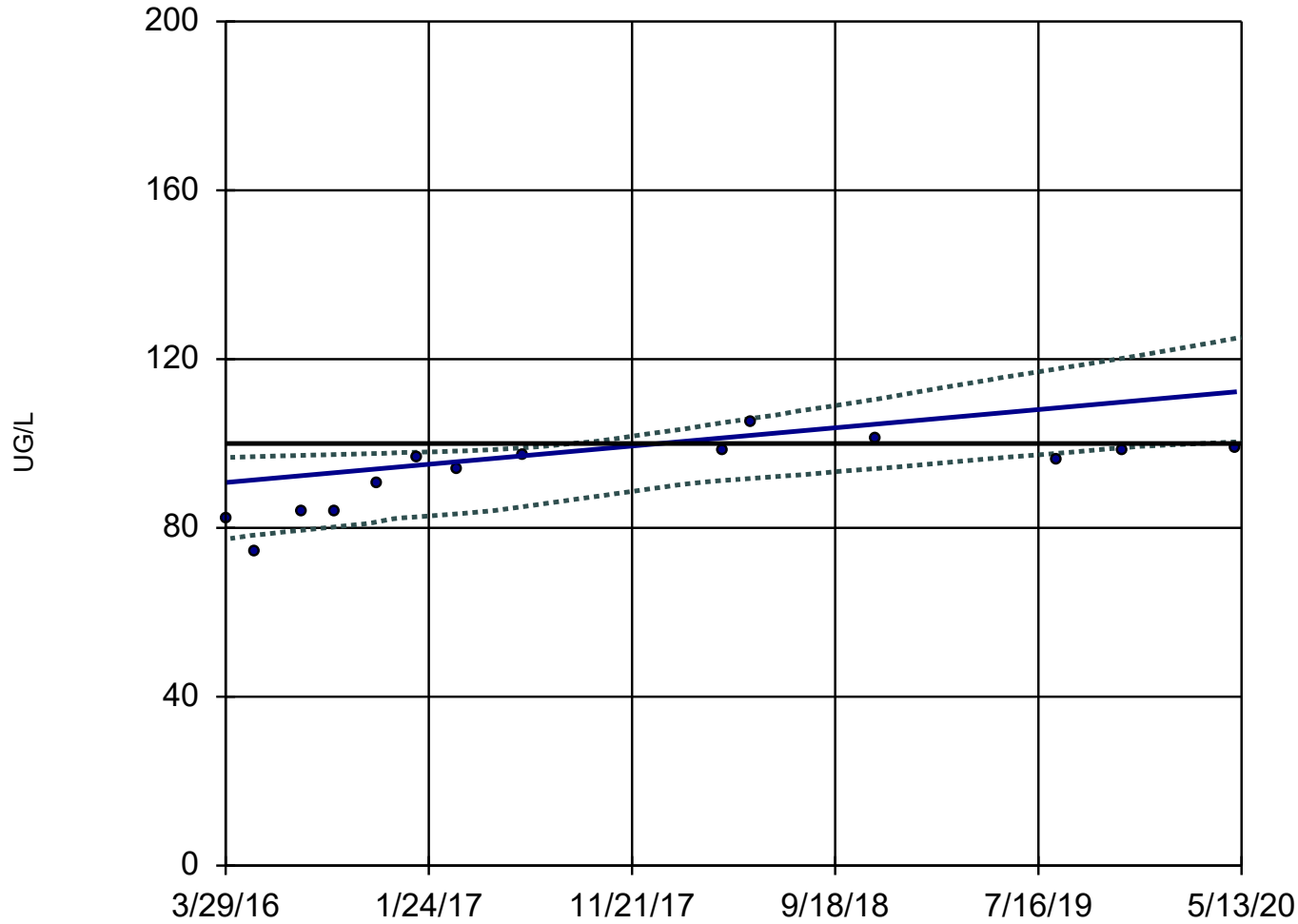
GWPS = 100.

Constituent: MOLYBDENUM, TOTAL Analysis Run 7/8/2020 3:28 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-5



n = 14

Slope = 5.235
units per year.

Mann-Kendall
statistic = 65
critical = 44

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

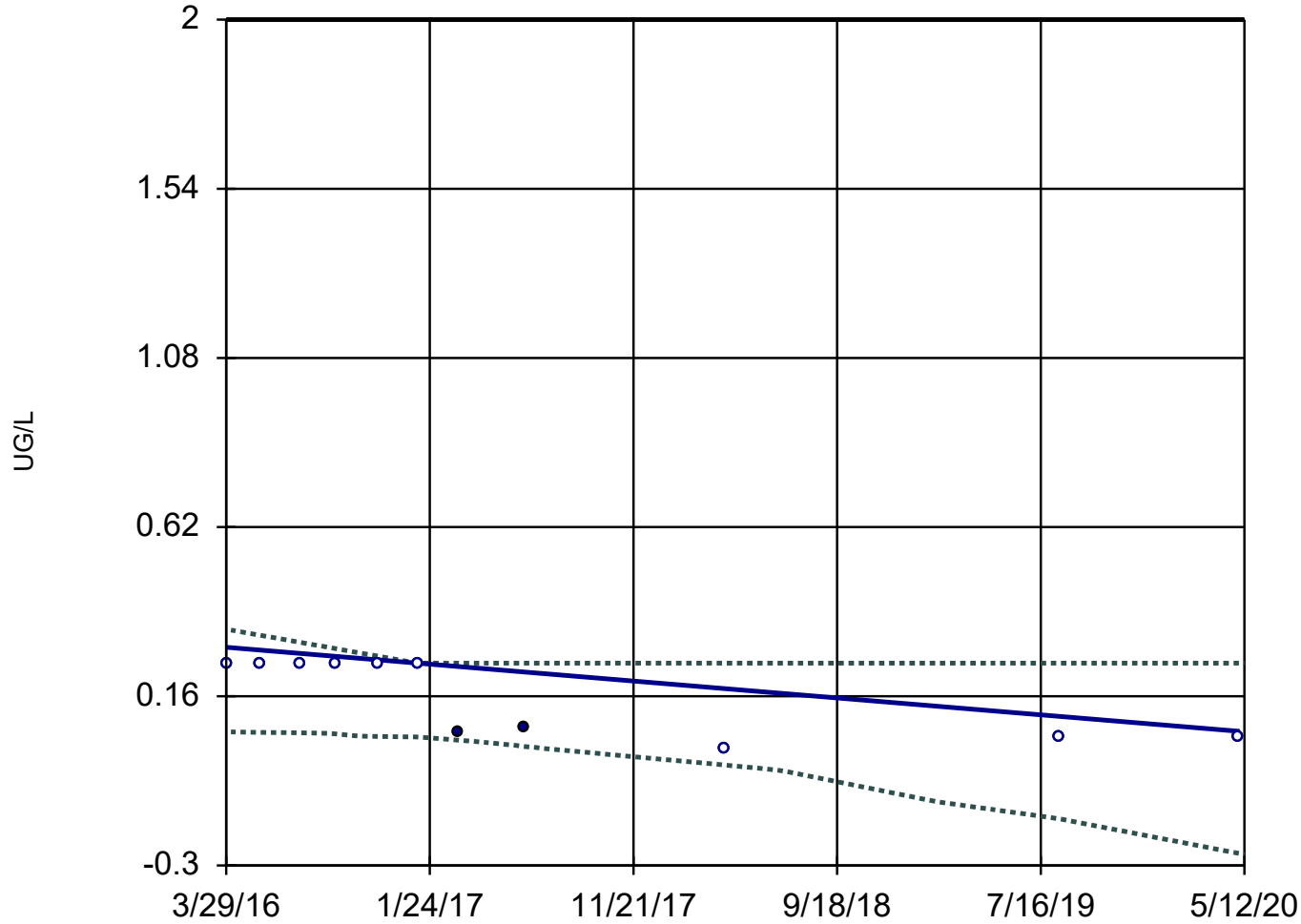
GWPS = 100.

Constituent: MOLYBDENUM, TOTAL Analysis Run 7/8/2020 3:28 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-1



n = 11

Slope = -0.05564
units per year.

Mann-Kendall
statistic = -34
critical = -31

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

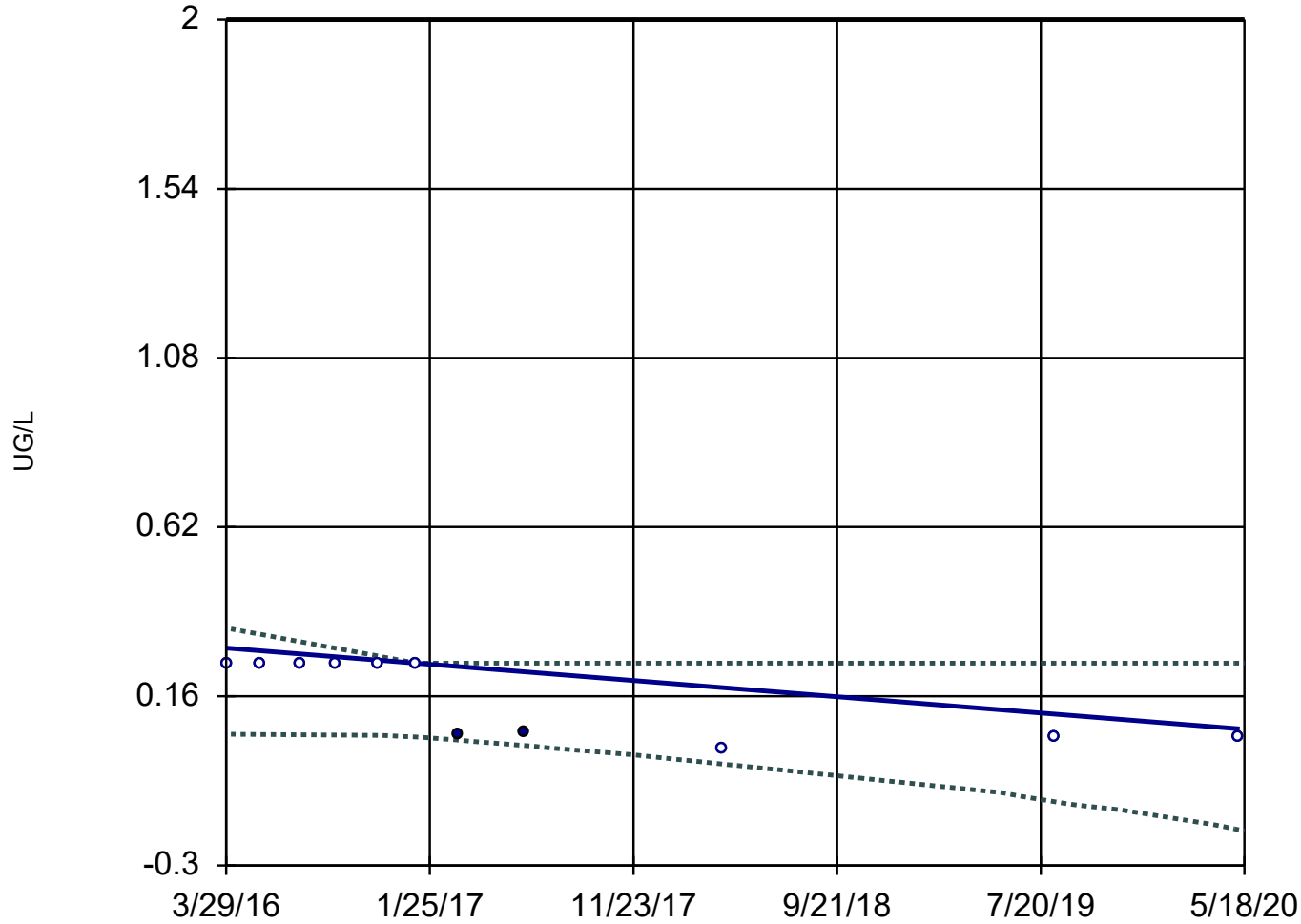
GWPS = 2.

Constituent: THALLIUM, TOTAL Analysis Run 7/8/2020 3:28 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-3



n = 11

Slope = -0.05338
units per year.

Mann-Kendall
statistic = -34
critical = -31

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

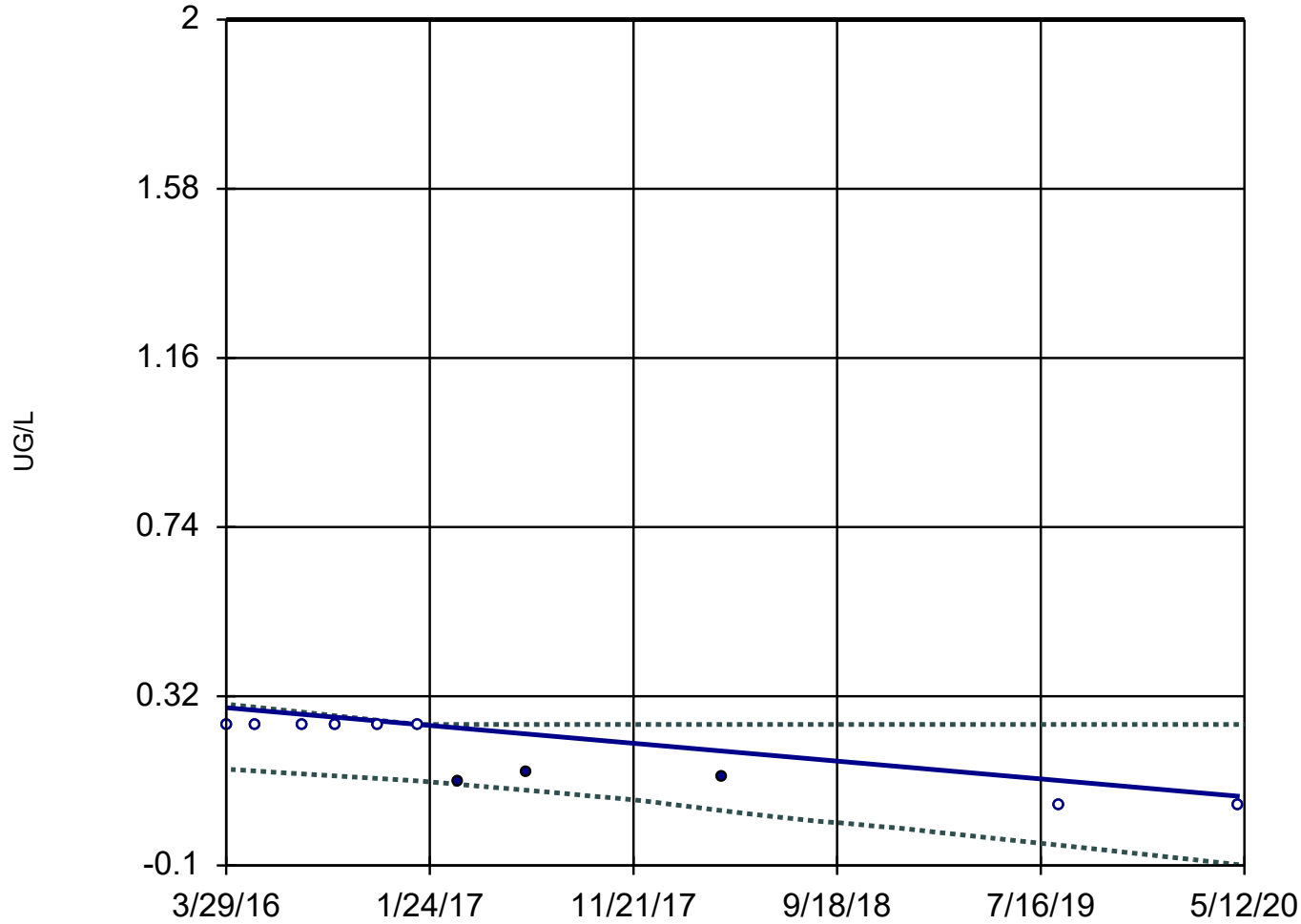
GWPS = 2.

Constituent: THALLIUM, TOTAL Analysis Run 7/8/2020 3:28 PM

Meramec E.C. Client: Ameren Data: MEC Data

Sen's Slope and 95% Confidence Band

M-MW-7



n = 11

Slope = -0.05359
units per year.

Mann-Kendall
statistic = -36
critical = -31

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

GWPS = 2.

Constituent: THALLIUM, TOTAL Analysis Run 7/8/2020 3:28 PM

Meramec E.C. Client: Ameren Data: MEC Data

Trend Test

Meramec E.C. Client: Ameren Data: MEC Data Printed 7/8/2020, 3:29 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
THALLIUM, TOTAL (UG/L)	M-MW-8	-0.05359	-25	-31	No	11	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	M-MW-1	0.003156	14	23	No	9	77.78	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	M-MW-2	0	11	31	No	11	90.91	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	M-MW-3	0	13	31	No	11	90.91	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	M-MW-4	0	3	31	No	11	90.91	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	M-MW-5	0	-1	-31	No	11	90.91	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	M-MW-6	0.003075	15	31	No	11	54.55	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	M-MW-7	-0.00...	-6	-23	No	9	0	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	M-MW-8	-0.00...	-8	-31	No	11	72.73	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-1	0.01611	17	39	No	13	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-2	0.04551	11	44	No	14	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-3	0.02276	1	35	No	12	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-4	0.7608	52	39	Yes	13	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-5	1.156	43	35	Yes	12	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-6	-0.5558	-29	-39	No	13	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-7	-0.02869	-9	-44	No	14	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	M-MW-8	0.08123	7	39	No	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-1	-1.728	-18	-44	No	14	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-2	-59.68	-63	-44	Yes	14	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-3	-15.87	-40	-44	No	14	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-4	-4.561	-38	-39	No	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-5	-14.75	-23	-44	No	14	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-6	-9.057	-79	-44	Yes	14	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-7	-4.409	-51	-44	Yes	14	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	M-MW-8	-22.83	-45	-44	Yes	14	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	M-MW-1	0	10	31	No	11	81.82	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	M-MW-2	0	-11	-31	No	11	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	M-MW-3	0	-11	-31	No	11	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	M-MW-4	0	1	31	No	11	72.73	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	M-MW-5	0	-11	-31	No	11	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	M-MW-6	0	-7	-27	No	10	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	M-MW-7	0	-7	-27	No	10	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	M-MW-8	0	-11	-31	No	11	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	M-MW-1	0	2	31	No	11	81.82	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	M-MW-2	0	1	31	No	11	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	M-MW-3	0	5	27	No	10	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	M-MW-4	0	5	27	No	10	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	M-MW-5	0	0	31	No	11	81.82	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	M-MW-6	0.03193	29	31	No	11	54.55	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	M-MW-7	0.07687	33	31	Yes	11	18.18	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	M-MW-8	0.01086	11	31	No	11	54.55	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	M-MW-1	-0.1845	-29	-39	No	13	30.77	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	M-MW-2	-0.03502	-11	-39	No	13	30.77	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	M-MW-3	-0.08177	-23	-39	No	13	53.85	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	M-MW-4	-0.1632	-25	-39	No	13	46.15	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	M-MW-5	-0.05461	-23	-39	No	13	53.85	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	M-MW-6	-0.01892	-17	-39	No	13	61.54	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	M-MW-7	-0.09339	-19	-39	No	13	53.85	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	M-MW-8	0	-5	-39	No	13	69.23	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-1	0.01952	39	31	Yes	11	100	n/a	n/a	0.02	NP

Trend Test

Meramec E.C. Client: Ameren Data: MEC Data Printed 7/8/2020, 3:29 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
COBALT, TOTAL (UG/L)	M-MW-2	0.01788	45	35	Yes	12	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-3	0.01248	9	35	No	12	66.67	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-4	0.01789	45	35	Yes	12	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-5	0.01789	45	35	Yes	12	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-6	1.038	24	35	No	12	0	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-7	0.01955	39	31	Yes	11	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	M-MW-8	0.01789	45	35	Yes	12	100	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-1	0.01201	17	48	No	15	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-2	0.0132	21	44	No	14	7.143	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-3	-0.00...	-8	-48	No	15	26.67	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-4	0	-3	-44	No	14	7.143	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-5	0	5	48	No	15	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-6	0	1	48	No	15	6.667	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-7	0.01678	21	58	No	17	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	M-MW-8	0.01396	17	44	No	14	0	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	M-MW-1	0	0	31	No	11	81.82	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	M-MW-2	-0.07866	-8	-31	No	11	63.64	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	M-MW-3	0.139	22	31	No	11	90.91	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	M-MW-4	0	4	31	No	11	81.82	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	M-MW-5	0	-3	-31	No	11	63.64	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	M-MW-6	0.1334	20	31	No	11	90.91	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	M-MW-7	0.1465	19	31	No	11	81.82	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	M-MW-8	0	7	31	No	11	72.73	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-1	0	3	35	No	12	91.67	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-2	0.4132	24	39	No	13	30.77	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-3	-0.1196	-10	-39	No	13	38.46	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-4	-0.1534	-5	-39	No	13	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-5	-0.5688	-12	-39	No	13	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-6	-0.9463	-10	-35	No	12	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-7	3.217	14	39	No	13	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	M-MW-8	1.101	28	39	No	13	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	M-MW-1	0.002597	22	31	No	11	90.91	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	M-MW-2	0.002653	22	31	No	11	90.91	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	M-MW-3	0.002586	22	31	No	11	90.91	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	M-MW-4	0.003724	34	31	Yes	11	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	M-MW-5	0.003724	34	31	Yes	11	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	M-MW-6	0.003735	34	31	Yes	11	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	M-MW-7	0.003724	34	31	Yes	11	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	M-MW-8	0.002597	20	31	No	11	90.91	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-1	0.1438	42	44	No	14	92.86	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-2	0.1008	22	44	No	14	78.57	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-3	1.604	51	44	Yes	14	21.43	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-4	0.5849	25	44	No	14	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-5	5.235	65	44	Yes	14	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-6	-1.374	-15	-44	No	14	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-7	4.199	10	44	No	14	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	M-MW-8	-4.885	-19	-44	No	14	0	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-1	-0.0332	-28	-35	No	12	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-2	-0.0113	-7	-44	No	14	71.43	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-3	0.03706	9	44	No	14	42.86	n/a	n/a	0.02	NP

Trend Test

Meramec E.C. Client: Ameren Data: MEC Data Printed 7/8/2020, 3:29 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)	M-MW-4	-0.02323	-7	-44	No	14	85.71	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-5	0.01778	3	44	No	14	50	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-6	0.001067	1	44	No	14	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-7	0.00703	0	35	No	12	100	n/a	n/a	0.02	NP
Radium [226 + 228] (PCI/L)	M-MW-8	-0.00...	-1	-44	No	14	78.57	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-1	0	-4	-35	No	12	83.33	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-2	0	0	35	No	12	83.33	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-3	0	-10	-35	No	12	83.33	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-4	0	-4	-35	No	12	83.33	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-5	0	-14	-35	No	12	91.67	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-6	-0.00...	-26	-35	No	12	91.67	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-7	0.198	4	35	No	12	8.333	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	M-MW-8	0	-7	-31	No	11	81.82	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	M-MW-1	-0.05564	-34	-31	Yes	11	81.82	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	M-MW-2	-0.05351	-25	-31	No	11	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	M-MW-3	-0.05338	-34	-31	Yes	11	81.82	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	M-MW-4	-0.05355	-25	-31	No	11	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	M-MW-5	-0.05355	-25	-31	No	11	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	M-MW-6	-0.0556	-27	-31	No	11	90.91	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	M-MW-7	-0.05359	-36	-31	Yes	11	72.73	n/a	n/a	0.02	NP

APPENDIX E

2020 Potentiometric Surface Maps



LEGEND

- Meramec Energy Center Property Boundary
- All Surface Impoundments
- Groundwater Elevation Contours**
- Groundwater Elevation Contours (FT MSL)
- Ground/Surface Water Measurement Locations**
- Groundwater Monitoring Well
- Mississippi River Gauge
- Groundwater Flow Direction

NOTES

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDR.
- 3.) WELL MW-1 NOT USED FOR POTENTIOMETRIC SURFACE MAP CONTOURING BECAUSE IT IS SUSPECTED TO BE INFLUENCED BY NATURAL SPRING CONDITIONS.
- 4.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
- 5.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.

REFERENCES

- 1.) AMEREN MISSOURI MERAMEC ENERGY CENTER, MERAMEC PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATEPLANE MISSOURI EAST FIPS 2401 FEET.

0 500 1,000 1,500 2,000 Feet

CLIENT
AMEREN MISSOURI
MERAMEC ENERGY CENTER



PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
POTENTIOMETRIC SURFACE MAP - JANUARY 08, 2020

CONSULTANT	DATE	BY
	YYYY-MM-DD	2020-02-04
	PREPARED	BTT
	DESIGN	JSI
	REVIEW	EMS
	APPROVED	MNH

PROJECT No. 153-140602 PHASE 0004 FIGURE E1



Path: C:\Users\jgramm\OneDrive\Documents\153140602_00_Ameren CCR GWM Monitoring Program 2020_15314108_A8 Project Files\5 Technical\Work\0004-MEC-4.4\Figures\Drawings\PRODUCTION\153140602_Pot Map.mxd

1in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:





LEGEND

- Meramec Energy Center Property Boundary
- All Surface Impoundments
- Groundwater Elevation Contours**
- Groundwater Elevation Contours (FT MSL)
- Ground/Surface Water Measurement Locations**
- Groundwater Monitoring Well
- Mississippi River Gauge
- Groundwater Flow Direction



- NOTES**
- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 - 2.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDR.
 - 3.) WELL MW-1 NOT USED FOR POTENTIOMETRIC SURFACE MAP CONTOURING BECAUSE IT IS SUSPECTED TO BE INFLUENCED BY NATURAL SPRING CONDITIONS.
 - 4.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
 - 5.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.
 - 6.) BMW-3, BMW-4, BMW-5, MW-9, AND TP-1 WERE NOT ACCESSIBLE DUE TO FLOODING.
 - 7.) WELL MW-7 WAS NOT USED FOR POTENTIOMETRIC SURFACE MAP CONTOURING DUE TO WATER LEVEL MEASUREMENT ERROR.

REFERENCES

- 1.) AMEREN MISSOURI MERAMEC ENERGY CENTER, MERAMEC PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATEPLANE MISSOURI EAST FIPS 2401 FEET.

0 500 1,000 1,500 2,000 Feet

CLIENT		
AMEREN MISSOURI MERAMEC ENERGY CENTER		
PROJECT CCR GROUNDWATER MONITORING PROGRAM		
TITLE POTENTIOMETRIC SURFACE MAP - MAY 04, 2020		
CONSULTANT	YYYY-MM-DD	2020-05-13
	PREPARED	BTT
	DESIGN	JSI
	REVIEW	KAB
	APPROVED	MNH
PROJECT No. 153-140602	PHASE 0004	FIGURE E2

Path: C:\Users\jgramm\Golder Associates\153140602_02_Ameren CCR GWM Monitoring Program 2020_15314106_A8 Project Files\Technical\153140602_02_Ameren CCR GWM Monitoring Program 2020_15314106_A8 Project Files\Drawings\PRODUCTION\153140602_02_Ameren CCR GWM Monitoring Program 2020_15314106_A8 Project Files\Drawings\PRODUCTION\153140602_02_Ameren CCR GWM Monitoring Program 2020_15314106_A8 Project Files\Map.mxd



1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:

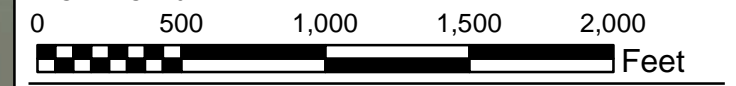


LEGEND

- Meramec Energy Center Property Boundary
- All Surface Impoundments
- Groundwater Elevation Contours**
- Groundwater Elevation Contours (FT MSL)
- Ground/Surface Water Measurement Locations**
- Groundwater Monitoring Well
- Mississippi River Gauge
- Groundwater Flow Direction

- NOTES**
- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 - 2.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
 - 3.) WELL MW-1 NOT USED FOR POTENTIOMETRIC SURFACE MAP CONTOURING BECAUSE IT IS SUSPECTED TO BE INFLUENCED BY NATURAL SPRING CONDITIONS.
 - 4.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
 - 5.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.
 - 6.) MW-9 AND TP-1 WERE NOT ACCESSIBLE DUE TO FLOODING.

- REFERENCES**
- 1.) AMEREN MISSOURI MERAMEC ENERGY CENTER, MERAMEC PROPERTY CONTROL MAP, FEBRUARY 2011.
 - 2.) COORDINATE SYSTEM: NAD 1983 STATEPLANE MISSOURI EAST FIPS 2401 FEET.



CLIENT
 AMEREN MISSOURI
 MERAMEC ENERGY CENTER



PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
POTENTIOMETRIC SURFACE MAP - JUNE 22, 2020

CONSULTANT	DATE	BY
	YYYY-MM-DD	2020-06-24
	PREPARED	BTT
	DESIGN	JSI
	REVIEW	EMS
	APPROVED	MNH

PROJECT No. 153-140602 PHASE 0004 FIGURE **E3**



Path: C:\Users\jgramm\Golder Associates\153140602_00_Ameren CCR GWM Monitoring Program 2020_15314106_A8 Project Files\5 Technical\Work\0004-MEC-4.4\Figures\Drawings\PRODUCTION\MAPS\2020_Aerial Report\2020_Pot Map.mxd
 1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:





LEGEND

- Meramec Energy Center Property Boundary
- All Surface Impoundments
- Groundwater Elevation Contours**
- Groundwater Elevation Contours (FT MSL)
- Ground/Surface Water Measurement Locations**
- Groundwater Monitoring Well
- Mississippi River Gauge
- Groundwater Flow Direction

- NOTES**
- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 - 2.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDR.
 - 3.) WELL MW-1 NOT USED FOR POTENTIOMETRIC SURFACE MAP CONTOURING BECAUSE IT IS SUSPECTED TO BE INFLUENCED BY NATURAL SPRING CONDITIONS.
 - 4.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
 - 5.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.

REFERENCES

- 1.) AMEREN MISSOURI MERAMEC ENERGY CENTER, MERAMEC PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATEPLANE MISSOURI EAST FIPS 2401 FEET.

0 500 1,000 1,500 2,000 Feet

CLIENT		
AMEREN MISSOURI MERAMEC ENERGY CENTER		
PROJECT CCR GROUNDWATER MONITORING PROGRAM		
TITLE POTENTIOMETRIC SURFACE MAP - JULY 23, 2020		
CONSULTANT	YYYY-MM-DD	2020-08-11
	PREPARED	BTT
	DESIGN	JSI
	REVIEW	KAB
	APPROVED	MNH
PROJECT No. 153-140602	PHASE 0004	FIGURE E4

Path: C:\Users\jgramm\Golder\Associates\153140602_00 - Ameren CCR GWM Monitoring Program 2020 - 15314106 - All Project Files\5 Technical Work\0004-MEC-4.4-Figures-Drawings\PRODUCTION\DOT MAPS\2020 Annual Report\2020 Pot. Map.mxd

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:





LEGEND

- Meramec Energy Center Property Boundary
- All Surface Impoundments
- Groundwater Elevation Contours**
- Groundwater Elevation Contours (FT MSL)
- Ground/Surface Water Measurement Locations**
- Groundwater Monitoring Well
- Mississippi River Gauge
- Groundwater Flow Direction

- NOTES**
- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 - 2.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDR.
 - 3.) WELL MW-1 NOT USED FOR POTENTIOMETRIC SURFACE MAP CONTOURING BECAUSE IT IS SUSPECTED TO BE INFLUENCED BY NATURAL SPRING CONDITIONS.
 - 4.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
 - 5.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.
 - 6.) WELL TP-1 NOT USED FOR POTENTIOMETRIC SURFACE MAP CONTOURING BECAUSE OF WATER LEVEL MEASUREMENT ERROR.

REFERENCES

- 1.) AMEREN MISSOURI MERAMEC ENERGY CENTER, MERAMEC PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATEPLANE MISSOURI EAST FIPS 2401 FEET.

0 500 1,000 1,500 2,000 Feet

CLIENT		
AMEREN MISSOURI MERAMEC ENERGY CENTER		
PROJECT CCR GROUNDWATER MONITORING PROGRAM		
TITLE POTENTIOMETRIC SURFACE MAP - AUGUST 26, 2020		
CONSULTANT	YYYY-MM-DD	2020-08-31
	PREPARED	BTT
	DESIGN	JSI
	REVIEW	EMS
	APPROVED	MNH
PROJECT No. 153-140602	PHASE 0004	FIGURE E5

Path: C:\Users\jgram\OneDrive\Documents\153140602_00 - Ameren CCR GWM Monitoring Program 2020 - 15314106 - All Project Files\5 Technical Work\0004-MEC-4.4-Figures\Drawings\PRODUCTION\DWG\153140602_00_Pot Map.mxd

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:





LEGEND

- Meramec Energy Center Property Boundary
- All Surface Impoundments
- Groundwater Elevation Contours**
- Groundwater Elevation Contours (FT MSL)
- Ground/Surface Water Measurement Locations**
- Groundwater Monitoring Well
- Mississippi River Gauge
- Groundwater Flow Direction

- NOTES**
- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 - 2.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDR.
 - 3.) WELL MW-1 NOT USED FOR POTENTIOMETRIC SURFACE MAP CONTOURING BECAUSE IT IS SUSPECTED TO BE INFLUENCED BY NATURAL SPRING CONDITIONS.
 - 4.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
 - 5.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.
 - 6.) WELL TP-1 NOT USED FOR POTENTIOMETRIC SURFACE MAP CONTOURING BECAUSE OF WATER LEVEL MEASUREMENT ERROR.

REFERENCES

- 1.) AMEREN MISSOURI MERAMEC ENERGY CENTER, MERAMEC PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATEPLANE MISSOURI EAST FIPS 2401 FEET.

0 500 1,000 1,500 2,000 Feet

CLIENT		
AMEREN MISSOURI MERAMEC ENERGY CENTER		
PROJECT CCR GROUNDWATER MONITORING PROGRAM		
TITLE POTENTIOMETRIC SURFACE MAP - NOVEMBER 9, 2020		
CONSULTANT	YYYY-MM-DD	2020-11-25
	PREPARED	BTT
	DESIGN	JSI
	REVIEW	EMS
	APPROVED	MNH
PROJECT No. 153-140602	PHASE 0004	FIGURE E6

Path: C:\Users\jgram\OneDrive\Documents\153140602_00_Ameren CCR GWM Monitoring Program 2020_15314106_A8 Project Files\Technical\Work\0004-MEC-4.4-Figures\Drawings\PRODUCTION\153140602_P01_Map.mxd

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:





golder.com