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2020 – 2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

BOTTOM ASH POND
JEFFREY ENERGY CENTER
ST. MARYS, KANSAS

by Haley & Aldrich, Inc.
Cleveland, Ohio

for Evergy Kansas Central, Inc.
Topeka, Kansas

File No. 0129778-045
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Revision No.	Date	Notes

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This Annual Groundwater Monitoring and Corrective Action Report documents the groundwater monitoring program for the Jeffrey Energy Center (JEC) inactive Bottom Ash Pond (BAP) consistent with applicable sections of Code of Federal Regulations Title 40 §§ 257.90 through 257.98, and describes activities conducted from July 2020 through June 2021 and documents compliance with the U.S. Environmental Protection Agency Coal Combustion Residual Rule. I certify that the 2020 – 2021 Annual Groundwater Monitoring and Corrective Action Report for the JEC BAP is, to the best of my knowledge, accurate and complete.

Signed: 

Professional Geologist

Print Name:	Mark Nicholls
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Title:	Technical Expert 2
Company:	Haley & Aldrich, Inc.

1. Introduction

This 2020 – 2021 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) addresses the inactive Bottom Ash Pond (BAP) at the Jeffrey Energy Center (JEC), operated by Evergy Kansas Central, Inc. (Evergy). This Annual Report was developed in accordance with the U.S. Environmental Protection Agency (USEPA) Coal Combustion Residual (CCR) Rule (Rule) effective October 19, 2015, including subsequent revisions, specifically Code of Federal Regulations Title 40 (40 CFR), subsection § 257.90(e). The Annual Report documents the groundwater monitoring system for the BAP consistent with applicable sections of 257.90 through 257.98, and describes activities conducted in the prior calendar year (July 2020 through June 2021) and documents compliance with the Rule. The specific requirements for the Annual Report listed in § 257.90(e) of the Rule are provided in Sections 1 and 2 of this Annual Report and are in bold italic font, followed by a narrative describing how each Rule requirement has been met.

Evergy prepared and placed in the facility's operating record a notification of intent to initiate closure of the BAP by December 17, 2015. Due to the USEPA Extension of Compliance Deadlines for Certain Inactive Surface Impoundments, Response to Partial Vacatur effective October 4, 2016, in accordance with the requirement under § 257.100(e)(1), the alternative reporting timeframes specified in § 257.100(e)(2) through (6) are applicable for the BAP.

1.1 40 CFR § 257.90(E)(6) SUMMARY

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:

1.1.1 40 CFR § 257.90(e)(6)(i) – Initial Monitoring Program

At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95;

At the start of the current annual reporting period (July 1, 2020), the BAP was operating under an assessment monitoring program in compliance with 40 CFR § 257.95.

1.1.2 40 CFR § 257.90(e)(6)(ii) – Final Monitoring Program

At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95;

At the end of the current annual reporting period (June 30, 2021), the BAP was operating under an assessment monitoring program in compliance with 40 CFR § 257.95.

1.1.3 40 CFR § 257.90(e)(6)(iii) – Statistically Significant Increases

If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to § 257.94(e):

1.1.3.1 40 CFR § 257.90(e)(6)(iii)(a)

Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase; and

The BAP is operating under an assessment monitoring program; therefore, no statistical evaluations were completed on Appendix III constituents from July 2020 through June 2021.

1.1.3.2 40 CFR § 257.90(e)(6)(iii)(b)

Provide the date when the assessment monitoring program was initiated for the CCR unit.

An assessment monitoring program was initiated on January 13, 2020 for the BAP with a notification establishing assessment monitoring provided February 12, 2020 to meet the requirements of 40 CFR § 257.95. The BAP remained in assessment monitoring from July 2020 through June 2021.

1.1.4 40 CFR § 257.90(e)(6)(iv) – Statistically Significant Levels

If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in appendix IV to this part pursuant to § 257.95(g) include all of the following:

1.1.4.1 40 CFR § 257.90(e)(6)(iv)(A) – Statistically Significant Level Constituents

Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase;

No statistically significant levels were identified above the groundwater protection standard for those constituents listed in Appendix IV to this part from July 2020 through June 2021 for the BAP.

1.1.4.2 40 CFR § 257.90(e)(6)(iv)(B) – Initiation of the Assessment of Corrective Measures

Provide the date when the assessment of corrective measures was initiated for the CCR unit;

No assessment of corrective measures was required to be initiated from July 2020 through June 2021 for this unit. The BAP remained in assessment monitoring during this annual period.

1.1.4.3 40 CFR § 257.90(e)(6)(iv)(C) – Assessment of Corrective Measures Public Meeting

Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and

An assessment of corrective measures was not required for the BAP from July 2020 through June 2021; therefore, a public meeting was not held.

1.1.4.4 40 CFR § 257.90(e)(6)(iv)(D) – Completion of the Assessment of Corrective Measures

Provide the date when the assessment of corrective measures was completed for the CCR unit.

No assessment of corrective measures was required to be initiated from July 2020 through June 2021 for this unit. The BAP remained in assessment monitoring during this annual period.

1.1.5 40 CFR § 257.90(e)(6)(v) – Selection of Remedy

Whether a remedy was selected pursuant to § 257.97 during the current annual reporting period, and if so, the date of remedy selection; and

The BAP remains in assessment monitoring, and no remedy was required to be selected.

1.1.6 40 CFR § 257.90(e)(6)(vi) – Remedial Activities

Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.

No remedial activities were required from July 2020 through June 2021.

2. 40 CFR § 257.90 Applicability

2.1 40 CFR § 257.90(a)

All CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under §§ 257.90 through 257.99, except as provided in paragraph (g) of this section.

Evergy has installed and certified a groundwater monitoring system at the JEC BAP. The BAP is subject to the groundwater monitoring and corrective action requirements described under 40 CFR §§ 257.90 through 257.98. This document addresses the requirement for the Owner/Operator to prepare an Annual Report per § 257.90(e).

2.2 40 CFR § 257.90(e) – SUMMARY

Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1).

This Annual Report describes monitoring completed and actions taken for the groundwater monitoring system at the JEC BAP as required by the Rule. Groundwater sampling and analysis was conducted in accordance with the requirements described in § 257.93, and the status of the groundwater monitoring program described in § 257.94 and § 257.95 is also provided in this report. This Annual Report documents the applicable groundwater-related activities completed in the calendar year from July 2020 through June 2021.

2.2.1 Status of the Groundwater Monitoring Program

The BAP remained in the assessment monitoring program through June 2021.

2.2.2 Key Actions Completed

The 2019 – 2020 Annual Groundwater Monitoring and Corrective Action Report was completed in July 2020 for the time period July 2019 through June 2020. Statistical evaluation was completed in July 2020 on analytical data from the March 2020 assessment monitoring sampling event.

A semi-annual assessment monitoring sampling event was completed in September 2020 for detected Appendix IV constituents identified from the December 2019 annual assessment monitoring sampling event. Statistical evaluation was completed in January 2021 on analytical data from the September 2020 semi-annual assessment monitoring sampling event.

An annual assessment monitoring sampling event was completed on November 30, 2020 to identify detected Appendix IV constituents for subsequent semi-annual sampling events planned for March 2021 and September 2021. Semi-annual assessment monitoring sampling was completed in March 2021 for detected Appendix IV constituents identified during the November 2021 annual monitoring event. Statistical evaluation of the results from the March 2021 semi-annual assessment monitoring sampling event are due to be completed in July 2021 and will be reported in the next annual report. The JEC BAP Groundwater Monitoring System Certification was updated in May 2021 to document monitoring system changes as described in Section 2.3.2.

2.2.3 Problems Encountered

No noteworthy problems (i.e., problems could include damaged wells, issues with sample collection or lack of sampling, or problems with analytical analysis) were encountered at the BAP from July 2020 through June 2021.

2.2.4 Actions to Resolve Problems

No problems were encountered at the BAP from July 2020 through June 2021; therefore, no actions to resolve the problems were required.

2.2.5 Project Key Activities for Upcoming Year

Key activities planned for July 2021 through June 2022 include the 2020 – 2021 Annual Groundwater Monitoring and Corrective Action Report, statistical analysis of assessment monitoring analytical data collected in March 2021, semi-annual assessment monitoring and subsequent statistical evaluations, and annual assessment monitoring.

2.3 40 CFR § 257.90(e) – INFORMATION

At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

2.3.1 40 CFR § 257.90(e)(1) – CCR Unit and Monitoring Well Network

A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

As required by § 257.90(e)(1), a map showing the locations of the CCR unit and associated upgradient and downgradient monitoring wells for the JEC BAP is included in this report as Figure 1.

2.3.2 40 CFR § 257.90(e)(2) – Monitoring System Changes

Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

No monitoring wells were installed or decommissioned from July 2020 to June 2021. Monitoring well TPZ-GR-4 was added to the monitoring well network in May 2021 as a side gradient piezometer to support the groundwater elevations and flow direction.

2.3.3 40 CFR § 257.90(e)(3) – Summary of Sampling Events

In addition to all the monitoring data obtained under § 257.90 through § 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

In accordance with § 257.95(b), three independent assessment monitoring samples from each background and downgradient monitoring well were collected from July 2020 through June 2021. A summary including sample names, dates of sample collection, field parameters, and monitoring data obtained for the groundwater monitoring program for the BAP is presented in Table I of this report. Groundwater potentiometric elevation contour maps associated with each groundwater monitoring sampling event in July 2020 through June 2021 are provided in Figures 2 through 4.

2.3.4 40 CFR § 257.90(e)(4) – Monitoring Transition Narrative

A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels); and

The assessment monitoring program was initiated on January 13, 2020 with a notification establishing assessment monitoring provided on February 12, 2020 to meet the requirements of 40 CFR § 257.95. The BAP remained in assessment monitoring from July 2020 through June 2021.

2.3.5 40 CFR § 257.90(e)(5) – Other Requirements

Other information required to be included in the annual report as specified in § 257.90 through § 257.98.

This Annual Report documents activities conducted to comply with §§ 257.90 through 257.95 of the Rule. It is understood that there are supplemental references in §§ 257.90 through 257.98 that must be placed in the Annual Report. The following requirements include relevant and required information in the Annual Report for activities completed from July 2020 through June 2021.

2.3.5.1 40 CFR § 257.94(d)(3) – Demonstration for Alternative Detection Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional

engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

An alternative groundwater detection monitoring sampling and analysis frequency has not been established for this CCR unit; therefore, no demonstration or certification is applicable.

2.3.5.2 40 CFR § 257.94(e)(2) – Detection Monitoring Alternate Source Demonstration

The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels to include obtaining a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under this section. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

This unit is in assessment monitoring; therefore, no detection monitoring alternative source demonstration or certification is applicable.

2.3.5.3 40 CFR § 257.95(c)(3) – Demonstration for Alternative Assessment Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

An alternative groundwater assessment monitoring sampling and analysis frequency has not been established for this CCR unit; therefore, no demonstration or certification is applicable.

2.3.5.4 40 CFR § 257.95(d)(3) – Assessment Monitoring Concentrations and Groundwater Protection Standards

Include the recorded concentrations required by paragraph (d)(1) of this section, identify the background concentrations established under § 257.94(b), and identify the groundwater protection

standards established under paragraph (d)(2) of this section in the annual groundwater monitoring and corrective action report required by § 257.90(e).

An assessment monitoring program has been implemented at the CCR unit since January 13, 2020. Three rounds of assessment monitoring sampling were completed from July 2020 through June 2021. Analytical results for both downgradient and upgradient wells are provided in Table I. The background concentrations (upper tolerance limits) and groundwater protection standards established for detected Appendix IV constituents for the BAP are included in Tables II and III. The background concentrations and groundwater protection standards provided in Tables II and III were utilized for the statistical evaluations completed from July 2020 through June 2021 for the March 2020 and September 2020 semi-annual assessment monitoring sampling events, respectively.

2.3.5.5 40 CFR § 257.95(g)(3)(ii) – Assessment Monitoring Alternate Source Demonstration

Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in appendices III and IV to this part are at or below background as specified in paragraph (e) of this section. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

No assessment monitoring alternative source demonstration or certification was required from July 2020 through June 2021. The BAP remained in assessment monitoring during this annual period.

2.3.5.6 40 CFR § 257.96(a) – Demonstration for Additional Time for Assessment of Corrective Measures

Within 90 days of finding that any constituent listed in appendix IV to this part has been detected at a statistically significant level exceeding the groundwater protection standard defined under § 257.95(h), or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions. The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by

§ 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

No assessment of corrective measures was required to be initiated from July 2020 through June 2021; therefore, no demonstration or certification is applicable for this unit.

TABLES

TABLE I
SUMMARY OF ANALYTICAL RESULTS - ASSESSMENT MONITORING
EVERGY KANSAS CENTRAL, INC.
JEFFREY ENERGY CENTER
BOTTOM ASH POND (INACTIVE)
ST. MARYS, KANSAS

Location	Upgradient			Downgradient											
	IBA-4			IBA-1				IBA-2			IBA-3				
Measure Point (TOC)	1201.86			1171.65				1171.66			1164.95				
Sample Name	IBA-04-091420	IBA-4-113020	IBA-4-030421	IBA-01-091420	IBA-1-113020	IBA-1-030421	IBA-DUP-030421	IBA-02-091420	IBA-2-113020	IBA-2-030421	IBA-03-091420	DUP-IBA-091420	IBA-3-113020	DUP-IBA-113020	IBA-3-030421
Sample Date	9/14/2020	11/30/2020	3/4/2021	9/14/2020	11/30/2020	3/4/2021	3/4/2021	9/14/2020	11/30/2020	3/4/2021	9/14/2020	9/14/2020	11/30/2020	11/30/2020	3/4/2021
Final Lab Report Date	9/28/2020	12/10/2020	3/17/2021	9/28/2020	12/10/2020	3/17/2021	3/17/2021	9/28/2020	12/10/2020	3/17/2021	9/28/2020	9/28/2020	12/10/2020	12/10/2020	3/17/2021
Final Lab Report Revision Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Final Radiation Lab Report Date	N/A	12/23/2020	N/A	N/A	12/23/2020	N/A	N/A	N/A	12/23/2020	N/A	N/A	N/A	12/23/2020	12/23/2020	N/A
Final Radiation Lab Report Revision Date	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lab Data Reviewed and Accepted	10/23/2020	1/13/2021	4/16/2021	10/23/2020	1/13/2021	4/16/2021	4/16/2021	10/23/2020	1/13/2021	4/16/2021	10/23/2020	10/23/2020	1/13/2021	1/13/2021	4/16/2021
Depth to Water (ft btoc)	53.92	54.89	54.93	26.00	27.50	25.94	-	27.36	28.91	27.75	31.24	-	32.20	-	31.65
Temperature (Deg C)	19.28	13.48	15.55	17.84	13.78	14.33	-	19.38	12.12	17.56	24.94	-	14.30	-	18.69
Conductivity (µS/cm)	903	940	2073	2040	2160	3060	-	1640	1730	2950	1820	-	1970	-	3280
Turbidity (NTU)	0.0	3.1	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	-	0.0
Boron, Total (mg/L)	**0.25**	-	**0.23**	**0.38**	-	**0.37**	**0.37**	**0.21**	-	**0.21**	**0.29**	**0.29**	-	-	**0.28**
Calcium, Total (mg/L)	**106**	-	**106**	**304**	-	**302**	**313**	**216**	-	**227**	**256**	**256**	-	-	**258**
Chloride (mg/L)	**19.3**	-	**18.6**	**134**	-	**125**	**125**	**127**	-	**111**	**141**	**137**	-	-	**124**
Fluoride (mg/L)	**0.58**	**0.64**	**0.52**	**0.31**	**0.43**	< 0.20	< 0.20	**0.36**	**0.35**	< 0.20	**0.30**	**0.30**	**0.37**	**0.37**	< 0.20
Sulfate (mg/L)	**173**	-	**177**	**875**	-	**863**	**802**	**632**	-	**608**	**848**	**819**	-	-	**778**
pH (su)	**7.1**	-	**7.4**	**7.0**	-	**7.2**	**7.1**	**7.2**	-	**6.9**	**7.3**	**7.2**	-	-	**7.0**
TDS (mg/L)	**623**	-	**689**	**1670**	-	**1710**	**1680**	**1270**	-	**1340**	**1650**	**1600**	-	-	**1570**
Antimony, Total (mg/L)	-	< 0.0010	-	-	< 0.0010	-	-	-	< 0.0010	-	-	-	< 0.0010	< 0.0010	-
Arsenic (mg/L)	-	< 0.0010	-	-	< 0.0010	-	-	-	< 0.0010	-	-	-	< 0.0010	< 0.0010	-
Barium, Total (mg/L)	**0.019**	**0.019**	**0.019**	**0.029**	**0.031**	**0.030**	**0.031**	**0.028**	**0.030**	**0.028**	**0.017**	**0.018**	**0.019**	**0.020**	**0.019**
Beryllium, Total (mg/L)	-	< 0.0010	-	-	< 0.0010	-	-	-	< 0.0010	-	-	-	< 0.0010	< 0.0010	-
Cadmium, Total (mg/L)	-	< 0.00050	-	-	< 0.00050	-	-	-	< 0.00050	-	-	-	< 0.00050	< 0.00050	-
Chromium, Total (mg/L)	-	< 0.0050	-	-	< 0.0050	-	-	-	< 0.0050	-	-	-	< 0.0050	< 0.0050	-
Cobalt, Total (mg/L)	<0.0010	< 0.0010	< 0.0010	**0.0016**	**0.0022**	**0.0020**	**0.0019**	<0.0010	**0.0011**	**0.0011**	**0.0014**	**0.0014**	**0.0017**	**0.0016**	**0.0017**
Lead, Total (mg/L)	-	< 0.010	-	-	< 0.010	-	-	-	< 0.010	-	-	-	< 0.010	< 0.010	-
Lithium, Total (mg/L)	**0.040**	**0.039**	**0.035**	**0.022**	**0.020**	**0.015**	**0.013**	**0.023**	**0.026**	**0.019**	**0.024**	**0.018**	**0.022**	**0.023**	**0.021**
Molybdenum, Total (mg/L)	**0.0019**	**0.0020**	**0.0018**	**0.0076**	**0.0081**	**0.0073**	**0.0069**	**0.0022**	**0.0022**	**0.0023**	**0.0022**	**0.0021**	**0.0020**	**0.0021**	**0.0022**
Selenium, Total (mg/L)	-	< 0.0010	-	-	< 0.0010	-	-	-	< 0.0010	-	-	-	< 0.0010	< 0.0010	-
Thallium, Total (mg/L)	-	< 0.0010	-	-	< 0.0010	-	-	-	< 0.0010	-	-	-	< 0.0010	< 0.0010	-
Mercury, Total (mg/L)	-	< 0.00020	-	-	< 0.00020	-	-	-	< 0.00020	-	-	-	< 0.00020	< 0.00020	-
Fluoride (mg/L)	**0.58**	**0.64**	**0.52**	**0.31**	**0.43**	< 0.20	< 0.20	**0.36**	**0.35**	< 0.20	**0.30**	**0.30**	**0.37**	**0.37**	< 0.20
Radium-226 & 228 Combined (pCi/L)	-	1.08 ± 1.00 (1.72)	-	-	0.000 ± 0.553 (0.967)	-	-	-	0.779 ± 0.712 (1.07)	-	-	-	0.343 ± 0.584 (0.982)	0.468 ± 0.783 (1.36)	-

Notes & Abbreviations:

Radiological results are presented as activity plus or minus uncertainty with minimum detectable concentration (MDC).

Bold value: *Detection above laboratory reporting limit or MDC .*

µS/cm = micro Siemens per centimeter

Deg C = degrees Celsius

ft btoc = feet below top of casing

mg/L = milligrams per liter

N/A = Not Applicable

NTU = Nephelometric Turbidity Unit

pCi/L = picoCuries per liter

su = standard unit

TDS = total dissolved solids

TOC = top of casing

TABLE II
ASSESSMENT GROUNDWATER MONITORING - DETECTED APPENDIX IV GWPS
MARCH 2020 SAMPLING EVENT
JEFFREY ENERGY CENTER
BOTTOM ASH POND (INACTIVE)

Well Number	Background Value[1]	GWPS
CCR Appendix-IV Barium, Total (mg/L)		
MW-IBA-4 (upgradient)	0.0229	NA
MW-IBA-1		2
MW-IBA-2		2
MW-IBA-3		2
CCR Appendix-IV Cobalt, Total (mg/L)		
MW-IBA-4 (upgradient)	0.001	NA
MW-IBA-1		0.006
MW-IBA-2		0.006
MW-IBA-3		0.006
CCR Appendix-IV Fluoride, Total (mg/L)		
MW-IBA-4 (upgradient)	0.653	NA
MW-IBA-1		4.0
MW-IBA-2		4.0
MW-IBA-3		4.0
CCR Appendix-IV Lithium, Total (mg/L)		
MW-IBA-4 (upgradient)	0.0382	NA
MW-IBA-1		0.040
MW-IBA-2		0.040
MW-IBA-3		0.040
CCR Appendix-IV Molybdenum, Total (mg/L)		
MW-IBA-4 (upgradient)	0.0024	NA
MW-IBA-1		0.100
MW-IBA-2		0.100
MW-IBA-3		0.100

Notes and Abbreviations:

[1] Interwell background value based on background data collected through March 2019.

CCR = Coal Combustion Residuals

GWPS = Groundwater Protection Standard

mg/L = milligrams per Liter

NA = Not Applicable

TABLE III
ASSESSMENT GROUNDWATER MONITORING - DETECTED APPENDIX IV GWPS
SEPTEMBER 2020 SAMPLING EVENT
JEFFREY ENERGY CENTER
BOTTOM ASH POND (INACTIVE)

Well Number	Background Value[1]	GWPS
CCR Appendix-IV Barium, Total (mg/L)		
MW-IBA-4 (upgradient)	0.0229	NA
MW-IBA-1		2
MW-IBA-2		2
MW-IBA-3		2
CCR Appendix-IV Cobalt, Total (mg/L)		
MW-IBA-4 (upgradient)	0.001	NA
MW-IBA-1		0.006
MW-IBA-2		0.006
MW-IBA-3		0.006
CCR Appendix-IV Fluoride, Total (mg/L)		
MW-IBA-4 (upgradient)	0.632[2]	NA
MW-IBA-1		4.0
MW-IBA-2		4.0
MW-IBA-3		4.0
CCR Appendix-IV Lithium, Total (mg/L)		
MW-IBA-4 (upgradient)	0.0382	NA
MW-IBA-1		0.040
MW-IBA-2		0.040
MW-IBA-3		0.040
CCR Appendix-IV Molybdenum, Total (mg/L)		
MW-IBA-4 (upgradient)	0.0024	NA
MW-IBA-1		0.100
MW-IBA-2		0.100
MW-IBA-3		0.100

Notes and Abbreviations:

[1] Interwell background value based on background data collected through March 2019.

[2] Interwell background value based on background data collected through September 2020.

CCR = Coal Combustion Residuals

GWPS = Groundwater Protection Standard

mg/L = milligrams per Liter

NA = Not Applicable

FIGURES

LEGEND

- MONITORING WELL
- PIEZOMETER OBSERVATION ONLY
- BOTTOM ASH POND (INACTIVE)

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: ESRI, SEPTEMBER 3, 2019.

N

0 330 660

SCALE IN FEET

HALEY ALDRICH

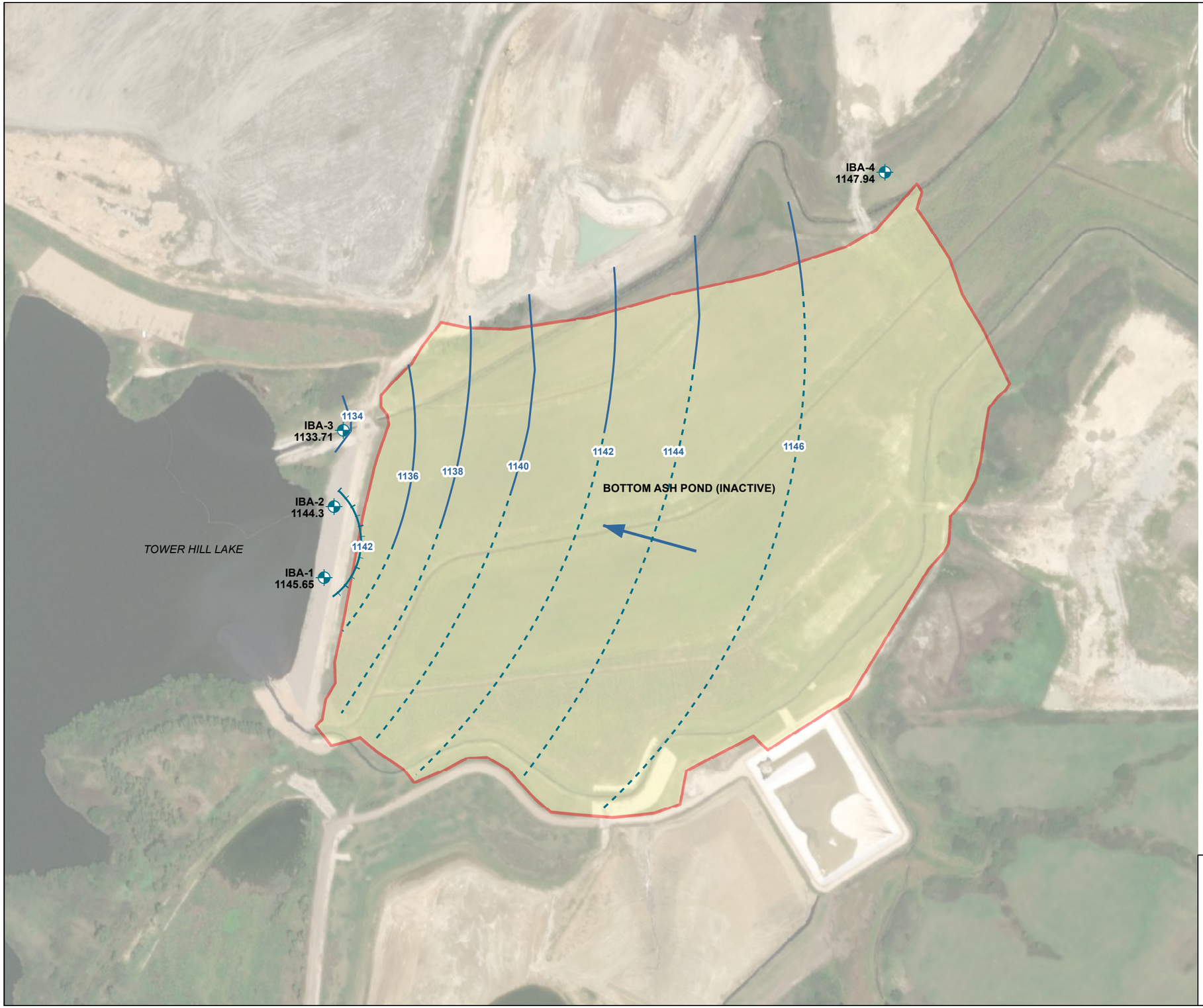
EVERGY KANSAS CENTRAL, INC.
JEFFREY ENERGY CENTER
ST. MARY'S, KANSAS

BOTTOM ASH POND (INACTIVE) LOCATION MAP

evergy

JULY 2021

FIGURE 1



LEGEND

- IBA-3 1132.75 — MONITORING WELL WITH GROUNDWATER ELEVATION (FEET AMSL), SEPREMBER 2020
- MONITORING WELL
- PIEZOMETER OBSERVATION ONLY
- GROUNDWATER POTENTIOMETRIC ESTIMATED ELEVATION CONTOUR, 2-FT INTERVAL (AMSL)
- APPROXIMATE GROUNDWATER POTENTIOMETRIC ESTIMATED ELEVATION CONTOUR, 2-FT INTERVAL (AMSL)
- GROUNDWATER FLOW DIRECTION
- BOTTOM ASH POND (INACTIVE)

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 14 SEPTEMBER 2020.
3. AMSL = ABOVE MEAN SEA LEVEL.
4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019

N

0 330 660
SCALE IN FEET

HALEY ALDRICH

EVERGY KANSAS CENTRAL, INC.
JEFFREY ENERGY CENTER
ST. MARY'S, KANSAS

BOTTOM ASH POND (INACTIVE) GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP SEPTEMBER 14, 2020

evergy

JULY 2021

FIGURE 2

LEGEND

IBA-3 1132.75 MONITORING WELL WITH GROUNDWATER ELEVATION (FEET AMSL), NOVEMBER 2020

MONITORING WELL

PIEZOMETER OBSERVATION ONLY

GROUNDWATER POTENTIOMETRIC ESTIMATED ELEVATION CONTOUR, 2-FT INTERVAL (AMSL)

APPROXIMATE GROUNDWATER POTENTIOMETRIC ESTIMATED ELEVATION CONTOUR, 2-FT INTERVAL (AMSL)

GROUNDWATER FLOW DIRECTION

BOTTOM ASH POND (INACTIVE)

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 30 NOVEMBER 2020.

3. AMSL = ABOVE MEAN SEA LEVEL.

4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019

N

0 330 660

SCALE IN FEET

HALEY ALDRICH

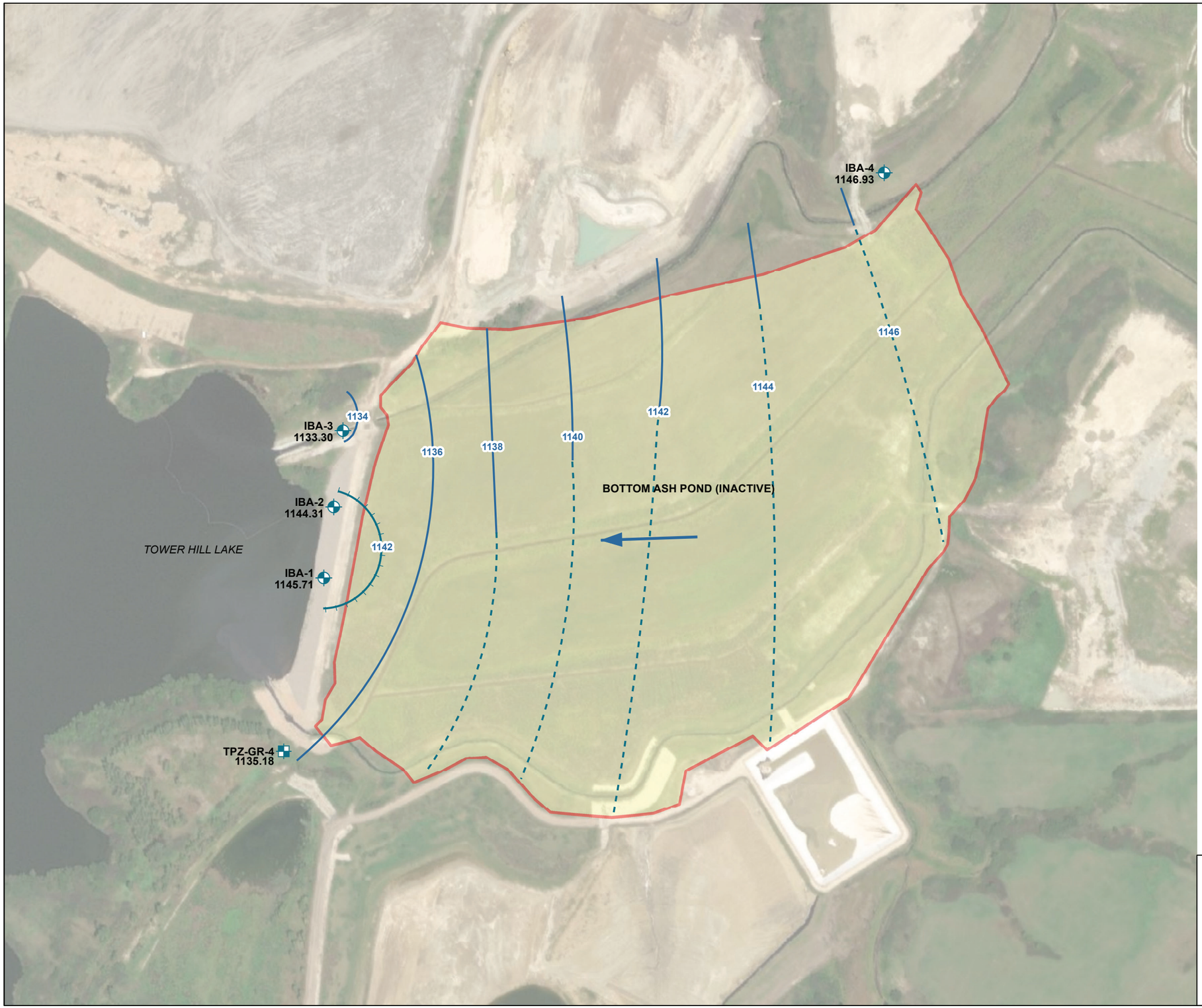
EVERGY KANSAS CENTRAL, INC.
JEFFREY ENERGY CENTER
ST. MARY'S, KANSAS

BOTTOM ASH POND (INACTIVE) GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP NOVEMBER 30, 2020

evergy

JULY 2021

FIGURE 3



LEGEND

IBA-3 1132.75 MONITORING WELL WITH GROUNDWATER ELEVATION (FEET AMSL), MARCH 2021

MONITORING WELL

PIEZOMETER OBSERVATION ONLY

GROUNDWATER POTENTIOMETRIC ESTIMATED ELEVATION CONTOUR, 2-FT INTERVAL (AMSL)

APPROXIMATE GROUNDWATER POTENTIOMETRIC ESTIMATED ELEVATION CONTOUR, 2-FT INTERVAL (AMSL)

GROUNDWATER FLOW DIRECTION

BOTTOM ASH POND (INACTIVE)

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 04 MARCH 2021.
3. AMSL = ABOVE MEAN SEA LEVEL.
4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019

N

0 330 660

SCALE IN FEET

HALEY ALDRICH

EVERGY KANSAS CENTRAL, INC.
JEFFREY ENERGY CENTER
ST. MARY'S, KANSAS

BOTTOM ASH POND (INACTIVE) GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP MARCH 4, 2021

evergy

JULY 2021

FIGURE 4

HALEY & ALDRICH, INC.
6500 Rockside Road
Suite 200
Cleveland, OH 44131
216.739.0555

November 10, 2022
Project No. 0204993-000

TO: Evergy Kansas Central, Inc.
Jared Morrison – Director, Water and Waste Programs

FROM: Haley & Aldrich, Inc.
Steven F. Putrich, P.E., Principal Consultant – Engineering Principal
Mark Nicholls, P.G., Senior Associate – Senior Hydrogeologist

Mark Nicholls
Digitally signed by Mark Nicholls
Date: 2022.11.10 09:50:48 -07'00'

SUBJECT: 2020 – 2021 Annual Groundwater Monitoring and Corrective Action Report Addendum
Evergy Kansas Central, Inc.
Bottom Ash Pond (Inactive)
Jeffrey Energy Center – St. Marys, Kansas

The Evergy Kansas Central, Inc. (Evergy) Bottom Ash Pond (BAP; inactive) at the Jeffrey Energy Center (JEC) is subject to the groundwater monitoring and corrective action requirements described under Code of Federal Regulations Title 40 (40 CFR) §257.90 through §257.98 (Rule). An Annual Groundwater Monitoring and Corrective Action (GWMCA) Report documenting the activities completed from July 2020 through June 2021 for the BAP was completed and placed in the facility's operating record on July 30, 2021, as required by the Rule. The Annual GWMCA Report contained the specific information listed in 40 CFR §257.90(e).

This report addendum has been prepared to supplement the operating record in recognition of comments received by Evergy from the U.S. Environmental Protection Agency (USEPA) on January 11, 2022. In addition to the information listed in 40 CFR §257.90(e), the USEPA indicated in their comments that the GWMCA Report should contain:

- Results of laboratory analysis of groundwater or other environmental media samples for the presence of constituents of Appendices III and IV to 40 CFR Part 257 (or of other constituents, such as those supporting characterization of site conditions that may ultimately affect a remedy);
- Required statistical analyses performed on those (laboratory analysis) results;
- Measured groundwater elevations; and
- Calculated groundwater flow rate and direction.

While this information is not specifically referred to in 40 CFR §257.90(e) for inclusion in the GWMCA Report, it has been routinely collected and maintained in Evergy's files and is being provided in the attachments to this addendum. The applicable laboratory analysis reports for sampling events completed from July 2020 through June 2021 are included in Attachment 1, and a discussion of the applicable statistical analyses completed from July 2020 through June 2021 are included in

Attachment 2 of this addendum. The 2020 – 2021 GWMCA Report does include a "Groundwater Potentiometric Elevation Contour Map" for each of the sampling events completed from July 2019 through June 2020. In those figures, the measured groundwater elevations for each well are listed. Those maps have been duplicated in this addendum as Attachment 3 and were modified to include the calculated groundwater flow rate and direction.

The Attachments to this addendum are described below:

- Attachment 1 – Laboratory Analytical Reports: Includes laboratory data packages with supporting information such as case narrative, sample and method summary, analytical results, quality control, and chain-of-custody documentation. The laboratory data packages for the baseline sampling events completed in September and December 2020, and March 2021 are provided.
- Attachment 2 – Statistical Analyses: Includes a discussion of the statistical analyses utilized along with a table summarizing the statistical outputs (e.g., frequency of detection, maximum detection, variance, standard deviation, coefficient of variance, outlier tests, trends, upper and lower confidence limits, and comparison against Groundwater Protection Standards), and supporting backup for statistical analyses completed from July 2020 through June 2021 included:
  - Overview of the July 2020 statistical analysis for data obtained in the March 2020 sampling event; and
  - Overview of the January 2021 statistical analysis for data obtained in the September 2020 sampling event.
- Attachment 3 – Groundwater Potentiometric Maps: Includes the measured groundwater elevations at each well and the generalized groundwater flow direction and calculated flow rate. Maps for the sampling events completed in September and December 2020 and March 2021 are provided.

ATTACHMENT 1
Laboratory Analytical Reports

ATTACHMENT 1-1
September 2020 Sampling Event
Laboratory Analytical Report

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

October 21, 2020

Melissa Michels
Evergy, Inc.
818 Kansas Avenue
Topeka, KS 66612

RE: Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on September 16, 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

Revised Report REV_1

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

Sincerely,

Jasmine Amerin
jasmine.amerin@pacelabs.com
(913)599-5665
Project Manager

Enclosures

cc: Sarah Hazelwood, Evergy, Inc.
Laura Hines, Evergy, Inc.
Jake Humphrey, Evergy, Inc.
Dustin Kadous, Evergy Kansas Central, Inc. Jeffrey Energy Center
Samantha Kaney, Haley & Aldrich
Jared Morrison, Evergy, Inc.
Melanie Satanek, Haley & Aldrich, Inc.
JD Schlegel, Evergy, Inc.
Danielle Zinmaster, Haley & Aldrich

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

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

Pace Analytical Services, LLC
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(913)599-5665

SAMPLE SUMMARY

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60348774001	**IBA-04-091420**	Water	09/14/20 12:10	09/16/20 17:40
60348774002	**IBA-01-091420**	Water	09/14/20 12:45	09/16/20 17:40
60348774003	**IBA-02-091420**	Water	09/14/20 12:01	09/16/20 17:40
60348774004	**IBA-03-091420**	Water	09/14/20 12:07	09/16/20 17:40
60348774005	**DUP-IBA-091420**	Water	09/14/20 00:00	09/16/20 17:40

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60348774001	**IBA-04-091420**	EPA 200.7	TDS	3	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		SM 2540C	MAP	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60348774002	**IBA-01-091420**	EPA 200.7	TDS	3	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		SM 2540C	MAP	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60348774003	**IBA-02-091420**	EPA 200.7	TDS	3	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		SM 2540C	MAP	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60348774004	**IBA-03-091420**	EPA 200.7	TDS	3	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		SM 2540C	MAP	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60348774005	**DUP-IBA-091420**	EPA 200.7	TDS	3	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		SM 2540C	MAP	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	LDB	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

Pace Analytical Services, LLC
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(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Date: October 21, 2020

Amended report revised to pull in Quality Control data.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Evergy Kansas Central, Inc.
Date: October 21, 2020

General Information:
5 samples were analyzed for EPA 200.7 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 678582

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60348653001,60348776003

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

- MS (Lab ID: 2743705)
  - Calcium
- MS (Lab ID: 2743707)
  - Calcium
- MSD (Lab ID: 2743706)
  - Boron
  - Calcium

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Evergy Kansas Central, Inc.
Date: October 21, 2020

General Information:
5 samples were analyzed for EPA 6010 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Method: **EPA 200.8**
Description: 200.8 MET ICPMS
Client: Evergy Kansas Central, Inc.
Date: October 21, 2020

General Information:
5 samples were analyzed for EPA 200.8 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.8 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: Evergy Kansas Central, Inc.
Date: October 21, 2020

General Information:
5 samples were analyzed for SM 2540C by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Evergy Kansas Central, Inc.
Date: October 21, 2020

General Information:
5 samples were analyzed for SM 4500-H+B by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- DUP-IBA-091420 (Lab ID: 60348774005)
- IBA-01-091420 (Lab ID: 60348774002)
- IBA-02-091420 (Lab ID: 60348774003)
- IBA-03-091420 (Lab ID: 60348774004)
- IBA-04-091420 (Lab ID: 60348774001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy Kansas Central, Inc.
Date: October 21, 2020

General Information:
5 samples were analyzed for EPA 300.0 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 678152

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60348528003,60348774001

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

- MS (Lab ID: 2742378)
  - Sulfate

Additional Comments:

Analyte Comments:

QC Batch: 678152

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

- MS (Lab ID: 2742377)
  - Chloride
- MS (Lab ID: 2742378)
  - Sulfate
- MSD (Lab ID: 2742379)
  - Sulfate

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Sample: IBA-04-091420 **Lab ID: 60348774001** Collected: 09/14/20 12:10 Received: 09/16/20 17:40 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.019**	mg/L	0.0050	1	09/24/20 08:10	09/25/20 18:37	7440-39-3	
Boron, Total Recoverable	**0.25**	mg/L	0.10	1	09/24/20 08:10	09/25/20 18:37	7440-42-8	
Calcium, Total Recoverable	**106**	mg/L	0.20	1	09/24/20 08:10	09/25/20 18:37	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.040**	mg/L	0.010	1	09/24/20 08:10	09/25/20 18:37	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	09/23/20 15:59	09/25/20 15:49	7440-48-4	
Molybdenum, Total Recoverable	**0.0019**	mg/L	0.0010	1	09/23/20 15:59	09/26/20 13:54	7439-98-7	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**623**	mg/L	10.0	1		09/21/20 16:15		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.1**	Std. Units	0.10	1		09/22/20 11:08		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**19.3**	mg/L	1.0	1		09/22/20 18:04	16887-00-6	
Fluoride	**0.58**	mg/L	0.20	1		09/22/20 18:04	16984-48-8	
Sulfate	**173**	mg/L	50.0	50		09/22/20 18:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Sample: IBA-01-091420 **Lab ID: 60348774002** Collected: 09/14/20 12:45 Received: 09/16/20 17:40 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.029**	mg/L	0.0050	1	09/24/20 08:10	09/25/20 18:40	7440-39-3	
Boron, Total Recoverable	**0.38**	mg/L	0.10	1	09/24/20 08:10	09/25/20 18:40	7440-42-8	
Calcium, Total Recoverable	**304**	mg/L	0.20	1	09/24/20 08:10	09/25/20 18:40	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.022**	mg/L	0.010	1	09/24/20 08:10	09/25/20 18:40	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**0.0016**	mg/L	0.0010	1	09/23/20 15:59	09/25/20 15:52	7440-48-4	
Molybdenum, Total Recoverable	**0.0076**	mg/L	0.0010	1	09/23/20 15:59	09/26/20 13:55	7439-98-7	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1670**	mg/L	20.0	1		09/21/20 16:16		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.0**	Std. Units	0.10	1		09/22/20 11:10		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**134**	mg/L	50.0	50		09/22/20 19:02	16887-00-6	
Fluoride	**0.31**	mg/L	0.20	1		09/22/20 19:47	16984-48-8	
Sulfate	**875**	mg/L	50.0	50		09/22/20 19:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Sample: IBA-02-091420 **Lab ID: 60348774003** Collected: 09/14/20 12:01 Received: 09/16/20 17:40 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.028**	mg/L	0.0050	1	09/24/20 08:10	09/25/20 18:42	7440-39-3	
Boron, Total Recoverable	**0.21**	mg/L	0.10	1	09/24/20 08:10	09/25/20 18:42	7440-42-8	
Calcium, Total Recoverable	**216**	mg/L	0.20	1	09/24/20 08:10	09/25/20 18:42	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.023**	mg/L	0.010	1	09/24/20 08:10	09/25/20 18:42	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	09/23/20 15:59	09/25/20 15:56	7440-48-4	
Molybdenum, Total Recoverable	**0.0022**	mg/L	0.0010	1	09/23/20 15:59	09/26/20 13:56	7439-98-7	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1270**	mg/L	20.0	1		09/21/20 16:16		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		09/22/20 11:05		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**127**	mg/L	50.0	50		09/22/20 20:16	16887-00-6	
Fluoride	**0.36**	mg/L	0.20	1		09/22/20 20:01	16984-48-8	
Sulfate	**632**	mg/L	50.0	50		09/22/20 20:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Sample: IBA-03-091420 **Lab ID: 60348774004** Collected: 09/14/20 12:07 Received: 09/16/20 17:40 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.017**	mg/L	0.0050	1	09/24/20 08:10	09/25/20 18:45	7440-39-3	
Boron, Total Recoverable	**0.29**	mg/L	0.10	1	09/24/20 08:10	09/25/20 18:45	7440-42-8	
Calcium, Total Recoverable	**256**	mg/L	0.20	1	09/24/20 08:10	09/25/20 18:45	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.024**	mg/L	0.010	1	09/24/20 08:10	09/25/20 18:45	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**0.0014**	mg/L	0.0010	1	09/23/20 15:59	09/25/20 15:59	7440-48-4	
Molybdenum, Total Recoverable	**0.0022**	mg/L	0.0010	1	09/23/20 15:59	09/26/20 13:58	7439-98-7	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1650**	mg/L	20.0	1		09/21/20 16:17		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		09/22/20 11:07		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**141**	mg/L	50.0	50		09/22/20 20:46	16887-00-6	
Fluoride	**0.30**	mg/L	0.20	1		09/22/20 20:31	16984-48-8	
Sulfate	**848**	mg/L	50.0	50		09/22/20 20:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Sample: DUP-IBA-091420 **Lab ID: 60348774005** Collected: 09/14/20 00:00 Received: 09/16/20 17:40 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.018**	mg/L	0.0050	1	09/24/20 08:10	09/25/20 18:52	7440-39-3	
Boron, Total Recoverable	**0.29**	mg/L	0.10	1	09/24/20 08:10	09/25/20 18:52	7440-42-8	
Calcium, Total Recoverable	**256**	mg/L	0.20	1	09/24/20 08:10	09/25/20 18:52	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.018**	mg/L	0.010	1	09/24/20 08:10	09/25/20 18:52	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**0.0014**	mg/L	0.0010	1	09/23/20 15:59	09/25/20 16:07	7440-48-4	
Molybdenum, Total Recoverable	**0.0021**	mg/L	0.0010	1	09/23/20 15:59	09/26/20 13:59	7439-98-7	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1600**	mg/L	20.0	1		09/21/20 16:17		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		09/22/20 11:01		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**137**	mg/L	50.0	50		09/22/20 21:15	16887-00-6	
Fluoride	**0.30**	mg/L	0.20	1		09/22/20 21:00	16984-48-8	
Sulfate	**819**	mg/L	50.0	50		09/22/20 21:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

QC Batch: 678582
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60348774001, 60348774002, 60348774003, 60348774004, 60348774005

METHOD BLANK: 2743703 Matrix: Water
Associated Lab Samples: 60348774001, 60348774002, 60348774003, 60348774004, 60348774005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Barium	mg/L	<0.0050	0.0050	09/25/20 18:03	
Boron	mg/L	<0.10	0.10	09/25/20 18:03	
Calcium	mg/L	<0.20	0.20	09/25/20 18:03	

LABORATORY CONTROL SAMPLE: 2743704

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	1	0.97	97	85-115	
Boron	mg/L	1	1.0	100	85-115	
Calcium	mg/L	10	10.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2743705 2743706

Parameter	Units	60348653001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	<0.073	1	1	1.0	1.1	101	111	70-130	9	20	
Boron	mg/L	10.5	1	1	11.2	12.1	72	162	70-130	8	20	M1
Calcium	mg/L	2360	10	10	2310	2530	-504	1620	70-130	9	20	M1

MATRIX SPIKE SAMPLE: 2743707

Parameter	Units	60348776003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	0.021	1	0.97	95	70-130	
Boron	mg/L	1.7	1	2.7	97	70-130	
Calcium	mg/L	355	10	357	25	70-130	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

QC Batch: 678528 | 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: 60348774001, 60348774002, 60348774003, 60348774004, 60348774005

METHOD BLANK: 2743582 Matrix: Water
Associated Lab Samples: 60348774001, 60348774002, 60348774003, 60348774004, 60348774005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cobalt	mg/L	<0.0010	0.0010	09/25/20 15:03	
Molybdenum	mg/L	<0.0010	0.0010	09/26/20 13:40	

LABORATORY CONTROL SAMPLE: 2743583

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	mg/L	0.04	0.037	93	85-115	
Molybdenum	mg/L	0.04	0.039	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2743584 2743585

Parameter	Units	60348360002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	ND	0.04	0.04	0.037	0.036	92	90	70-130	2	20	
Molybdenum	mg/L	1.5 ug/L	0.04	0.04	0.043	0.042	104	101	70-130	3	20	

MATRIX SPIKE SAMPLE: 2743586

Parameter	Units	60348653001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cobalt	mg/L	<0.00090	0.04	0.037	91	70-130	
Molybdenum	mg/L	0.0011J	0.04	0.037	90	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

QC Batch: 678583
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60348774001, 60348774002, 60348774003, 60348774004, 60348774005

METHOD BLANK: 2743710 Matrix: Water
Associated Lab Samples: 60348774001, 60348774002, 60348774003, 60348774004, 60348774005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lithium	mg/L	<0.010	0.010	09/25/20 18:03	

LABORATORY CONTROL SAMPLE: 2743711

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lithium	mg/L	1	0.99	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2743712 2743713

Parameter	Units	60348653001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lithium	mg/L	2.4	1	1	3.3	3.4	98	101	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

QC Batch: 678015 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60348774001, 60348774002, 60348774003, 60348774004, 60348774005

METHOD BLANK: 2741949 Matrix: Water
Associated Lab Samples: 60348774001, 60348774002, 60348774003, 60348774004, 60348774005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	09/21/20 16:15	

LABORATORY CONTROL SAMPLE: 2741950

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

SAMPLE DUPLICATE: 2741951

Parameter	Units	60348774001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	623	642	3	10	

SAMPLE DUPLICATE: 2741952

Parameter	Units	60348490009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	939	959	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

QC Batch: 678054
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60348774001, 60348774002, 60348774003, 60348774004, 60348774005

SAMPLE DUPLICATE: 2742052

Parameter	Units	60348774005 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.1	2	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

QC Batch: 678152
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60348774001, 60348774002, 60348774003, 60348774004, 60348774005

METHOD BLANK: 2742375 Matrix: Water
Associated Lab Samples: 60348774001, 60348774002, 60348774003, 60348774004, 60348774005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	09/22/20 09:18	
Fluoride	mg/L	<0.20	0.20	09/22/20 09:18	
Sulfate	mg/L	<1.0	1.0	09/22/20 09:18	

METHOD BLANK: 2744721 Matrix: Water
Associated Lab Samples: 60348774001, 60348774002, 60348774003, 60348774004, 60348774005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	09/23/20 09:35	
Fluoride	mg/L	<0.20	0.20	09/23/20 09:35	
Sulfate	mg/L	<1.0	1.0	09/23/20 09:35	

LABORATORY CONTROL SAMPLE: 2742376

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	103	90-110	
Fluoride	mg/L	2.5	2.6	105	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

LABORATORY CONTROL SAMPLE: 2744722

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.3	105	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	5.4	107	90-110	

MATRIX SPIKE SAMPLE: 2742377

Parameter	Units	60348774001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	19.3	5	24.3	100	80-120	E
Fluoride	mg/L	0.58	2.5	2.7	86	80-120	
Sulfate	mg/L	173	250	430	103	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2742378 2742379

Parameter	Units	60348528003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	10.5J	100	100	105	104	94	94	80-120	1	15	
Fluoride	mg/L	3.7J	50	50	55.0	54.9	103	102	80-120	0	15	
Sulfate	mg/L	636	100	100	757	753	121	118	80-120	0	15	E,M1

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60348774

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60348774001	**IBA-04-091420**	EPA 200.7	678582	EPA 200.7	678857
60348774002	**IBA-01-091420**	EPA 200.7	678582	EPA 200.7	678857
60348774003	**IBA-02-091420**	EPA 200.7	678582	EPA 200.7	678857
60348774004	**IBA-03-091420**	EPA 200.7	678582	EPA 200.7	678857
60348774005	**DUP-IBA-091420**	EPA 200.7	678582	EPA 200.7	678857
60348774001	**IBA-04-091420**	EPA 3010	678583	EPA 6010	678858
60348774002	**IBA-01-091420**	EPA 3010	678583	EPA 6010	678858
60348774003	**IBA-02-091420**	EPA 3010	678583	EPA 6010	678858
60348774004	**IBA-03-091420**	EPA 3010	678583	EPA 6010	678858
60348774005	**DUP-IBA-091420**	EPA 3010	678583	EPA 6010	678858
60348774001	**IBA-04-091420**	EPA 200.8	678528	EPA 200.8	678673
60348774002	**IBA-01-091420**	EPA 200.8	678528	EPA 200.8	678673
60348774003	**IBA-02-091420**	EPA 200.8	678528	EPA 200.8	678673
60348774004	**IBA-03-091420**	EPA 200.8	678528	EPA 200.8	678673
60348774005	**DUP-IBA-091420**	EPA 200.8	678528	EPA 200.8	678673
60348774001	**IBA-04-091420**	SM 2540C	678015		
60348774002	**IBA-01-091420**	SM 2540C	678015		
60348774003	**IBA-02-091420**	SM 2540C	678015		
60348774004	**IBA-03-091420**	SM 2540C	678015		
60348774005	**DUP-IBA-091420**	SM 2540C	678015		
60348774001	**IBA-04-091420**	SM 4500-H+B	678054		
60348774002	**IBA-01-091420**	SM 4500-H+B	678054		
60348774003	**IBA-02-091420**	SM 4500-H+B	678054		
60348774004	**IBA-03-091420**	SM 4500-H+B	678054		
60348774005	**DUP-IBA-091420**	SM 4500-H+B	678054		
60348774001	**IBA-04-091420**	EPA 300.0	678152		
60348774002	**IBA-01-091420**	EPA 300.0	678152		
60348774003	**IBA-02-091420**	EPA 300.0	678152		
60348774004	**IBA-03-091420**	EPA 300.0	678152		
60348774005	**DUP-IBA-091420**	EPA 300.0	678152		

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Sample Condition Upon Receipt

WO#: 60348774

60348774

Client Name: Evergy KS.

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** 5.6, 1.2 **Corr. Factor** +0.2 **Corrected** 5.8, 1.4

Date and initials of person examining contents: 9.18.20 ☑

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# 603173	☑Yes ☐No ☐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)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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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:	EVERGY KANSAS CENTRAL, INC.
Address:	Jeffrey Energy Center (JEC)
	818 Kansas Ave, Topeka, KS 66612
Email To:	melissa.michels@evergy.com
Phone: 785-575-8113	Fax:
Requested Due Date/TAT:	7 day

Section B Required Project Information:

Report To:	Melissa Michels, Samantha Kaney, Danielle Zinsm
Copy To:	Jared Morrison, Jake Humphrey, Laura Hines
	JD Schlegel, Brandon Will, Sarah Hazelwood
Purchase Order No.:	10JEC-0000047747
Project Name:	JEC Inactive Bottom Ash Pond CCR
Project Number:	

Section C Invoice Information:

Attention:	Accounts Payable
Company Name:	EVERGY KANSAS CENTRAL, INC
Address:	SEE SECTION A
Pace Quote Reference:	
Pace Project Manager:	Jasmine Amerin, 913-563-1403
Pace Profile #:	9657, 1

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: KS

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
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N: Analysis Test: 200.8 Total Metals**	200.7 Total Metals*	300: Cl, F, SO4	2540C TDS	4500 H+B	6010 Total Metals***	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	IBA-04-091420	WT	G	-	-	09/14/20	12:10		3	2		1						X	X	X	X	X	X		60348774
2	IBA-01-091420	WT	G	-	-	09/14/20	12:45		3	2		1						X	X	X	X	X	X		
3	IBA-02-091420	WT	G	-	-	09/14/20	12:01		3	2		1						X	X	X	X	X	X		
4	IBA-03-091420	WT	G	-	-	09/14/20	12:07		3	2		1						X	X	X	X	X	X		
5	DUP-IBA-091420	WT	G	-	-	09/14/20	-		3	2		1						X	X	X	X	X	X		
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
200.7 Total Metals*: B, Ca, Ba	Jason R. Franks / SCS	9/15/20	17:00	EBrackett Pace	9/16/20	1700	5.8	Y	Y	Y
200.8 Total Metals**: Co, Mo						1740	1.4			
6010 Total Metals***: Li										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jason R. Franks

SIGNATURE of SAMPLER: Jason R. Franks

DATE Signed (MM/DD/YY): 9/14/20

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

ATTACHMENT 1-2
December 2020 Sampling Event
Laboratory Analytical Report

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 10, 2020

Melissa Michels
Evergy, Inc.
818 Kansas Avenue
Topeka, KS 66612

RE: Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on December 01, 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

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

Sincerely,

Jasmine Amerin
jasmine.amerin@pacelabs.com
(913)599-5665
Project Manager

Enclosures

cc: Sarah Hazelwood, Evergy, Inc.
Laura Hines, Evergy, Inc.
Jake Humphrey, Evergy, Inc.
Dustin Kadous, Evergy Kansas Central, Inc. Jeffrey Energy Center
Samantha Kaney, Haley & Aldrich
Jared Morrison, Evergy, Inc.
Melanie Satanek, Haley & Aldrich, Inc.
JD Schlegel, Evergy, Inc.
Danielle Zinmaster, Haley & Aldrich

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

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

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60355665001	**IBA-1-113020**	Water	11/30/20 13:35	12/01/20 16:35
60355665002	**IBA-2-113020**	Water	11/30/20 12:55	12/01/20 16:35
60355665003	**IBA-3-113020**	Water	11/30/20 11:50	12/01/20 16:35
60355665004	**IBA-4-113020**	Water	11/30/20 15:00	12/01/20 16:35
60355665005	**DUP-IBA-113020**	Water	11/30/20 12:05	12/01/20 16:35

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SAMPLE ANALYTE COUNT

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60355665001	**IBA-1-113020**	EPA 200.7	HKC	4	PASI-K
		EPA 6010	HKC	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	JDE	1	PASI-K
		EPA 300.0	LDB	1	PASI-K
60355665002	**IBA-2-113020**	EPA 200.7	HKC	4	PASI-K
		EPA 6010	HKC	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	JDE	1	PASI-K
		EPA 300.0	LDB	1	PASI-K
60355665003	**IBA-3-113020**	EPA 200.7	HKC	4	PASI-K
		EPA 6010	HKC	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	JDE	1	PASI-K
		EPA 300.0	LDB	1	PASI-K
60355665004	**IBA-4-113020**	EPA 200.7	HKC	4	PASI-K
		EPA 6010	HKC	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	JDE	1	PASI-K
		EPA 300.0	LDB	1	PASI-K
60355665005	**DUP-IBA-113020**	EPA 200.7	HKC	4	PASI-K
		EPA 6010	HKC	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	JDE	1	PASI-K
		EPA 300.0	LDB	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Evergy Kansas Central, Inc.
Date: December 10, 2020

General Information:
5 samples were analyzed for EPA 200.7 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Evergy Kansas Central, Inc.
Date: December 10, 2020

General Information:
5 samples were analyzed for EPA 6010 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Method: **EPA 200.8**
Description: 200.8 MET ICPMS
Client: Evergy Kansas Central, Inc.
Date: December 10, 2020

General Information:
5 samples were analyzed for EPA 200.8 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.8 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Method: **EPA 245.1**
Description: 245.1 Mercury
Client: Evergy Kansas Central, Inc.
Date: December 10, 2020

General Information:
5 samples were analyzed for EPA 245.1 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 245.1 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy Kansas Central, Inc.
Date: December 10, 2020

General Information:
5 samples were analyzed for EPA 300.0 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Sample: IBA-1-113020 **Lab ID: 60355665001** Collected: 11/30/20 13:35 Received: 12/01/20 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.031**	mg/L	0.0050	1	12/05/20 10:52	12/07/20 17:40	7440-39-3	
Beryllium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/05/20 10:52	12/07/20 17:40	7440-41-7	
Chromium, Total Recoverable	**<0.0050**	mg/L	0.0050	1	12/05/20 10:52	12/07/20 17:40	7440-47-3	
Lead, Total Recoverable	**<0.010**	mg/L	0.010	1	12/05/20 10:52	12/07/20 17:40	7439-92-1	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.020**	mg/L	0.010	1	12/05/20 11:21	12/08/20 14:37	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:28	7440-36-0	
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:28	7440-38-2	
Cadmium, Total Recoverable	**<0.00050**	mg/L	0.00050	1	12/03/20 16:38	12/07/20 15:28	7440-43-9	
Cobalt, Total Recoverable	**0.0022**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:28	7440-48-4	
Molybdenum, Total Recoverable	**0.0081**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:28	7439-98-7	
Selenium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:28	7782-49-2	
Thallium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:28	7440-28-0	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	**<0.20**	ug/L	0.20	1	12/09/20 14:45	12/10/20 08:53	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Fluoride	**0.43**	mg/L	0.20	1		12/07/20 19:23	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Sample: IBA-2-113020 **Lab ID: 60355665002** Collected: 11/30/20 12:55 Received: 12/01/20 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.030**	mg/L	0.0050	1	12/05/20 10:52	12/07/20 17:56	7440-39-3	
Beryllium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/05/20 10:52	12/07/20 17:56	7440-41-7	
Chromium, Total Recoverable	**<0.0050**	mg/L	0.0050	1	12/05/20 10:52	12/07/20 17:56	7440-47-3	
Lead, Total Recoverable	**<0.010**	mg/L	0.010	1	12/05/20 10:52	12/07/20 17:56	7439-92-1	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.026**	mg/L	0.010	1	12/05/20 11:21	12/08/20 14:39	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:32	7440-36-0	
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:32	7440-38-2	
Cadmium, Total Recoverable	**<0.00050**	mg/L	0.00050	1	12/03/20 16:38	12/07/20 15:32	7440-43-9	
Cobalt, Total Recoverable	**0.0011**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:32	7440-48-4	
Molybdenum, Total Recoverable	**0.0022**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:32	7439-98-7	
Selenium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:32	7782-49-2	
Thallium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:32	7440-28-0	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	**<0.20**	ug/L	0.20	1	12/09/20 14:45	12/10/20 08:55	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Fluoride	**0.35**	mg/L	0.20	1		12/07/20 19:38	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Sample: IBA-3-113020 **Lab ID: 60355665003** Collected: 11/30/20 11:50 Received: 12/01/20 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.019**	mg/L	0.0050	1	12/05/20 10:52	12/07/20 17:59	7440-39-3	
Beryllium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/05/20 10:52	12/07/20 17:59	7440-41-7	
Chromium, Total Recoverable	**<0.0050**	mg/L	0.0050	1	12/05/20 10:52	12/07/20 17:59	7440-47-3	
Lead, Total Recoverable	**<0.010**	mg/L	0.010	1	12/05/20 10:52	12/07/20 17:59	7439-92-1	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.022**	mg/L	0.010	1	12/05/20 11:21	12/08/20 14:42	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:40	7440-36-0	
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:40	7440-38-2	
Cadmium, Total Recoverable	**<0.00050**	mg/L	0.00050	1	12/03/20 16:38	12/07/20 15:40	7440-43-9	
Cobalt, Total Recoverable	**0.0017**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:40	7440-48-4	
Molybdenum, Total Recoverable	**0.0020**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:40	7439-98-7	
Selenium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:40	7782-49-2	
Thallium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:40	7440-28-0	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	**<0.20**	ug/L	0.20	1	12/09/20 14:45	12/10/20 08:57	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Fluoride	**0.37**	mg/L	0.20	1		12/07/20 19:54	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
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(913)599-5665

ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Sample: IBA-4-113020 **Lab ID: 60355665004** Collected: 11/30/20 15:00 Received: 12/01/20 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.019**	mg/L	0.0050	1	12/05/20 10:52	12/07/20 18:02	7440-39-3	
Beryllium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/05/20 10:52	12/07/20 18:02	7440-41-7	
Chromium, Total Recoverable	**<0.0050**	mg/L	0.0050	1	12/05/20 10:52	12/07/20 18:02	7440-47-3	
Lead, Total Recoverable	**<0.010**	mg/L	0.010	1	12/05/20 10:52	12/07/20 18:02	7439-92-1	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.039**	mg/L	0.010	1	12/05/20 11:21	12/08/20 14:52	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:44	7440-36-0	
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:44	7440-38-2	
Cadmium, Total Recoverable	**<0.00050**	mg/L	0.00050	1	12/03/20 16:38	12/07/20 15:44	7440-43-9	
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:44	7440-48-4	
Molybdenum, Total Recoverable	**0.0020**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:44	7439-98-7	
Selenium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:44	7782-49-2	
Thallium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:44	7440-28-0	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	**<0.20**	ug/L	0.20	1	12/09/20 14:45	12/10/20 09:02	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Fluoride	**0.64**	mg/L	0.20	1		12/07/20 20:10	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Sample: DUP-IBA-113020 **Lab ID: 60355665005** Collected: 11/30/20 12:05 Received: 12/01/20 16:35 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.020**	mg/L	0.0050	1	12/05/20 10:52	12/07/20 18:04	7440-39-3	
Beryllium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/05/20 10:52	12/07/20 18:04	7440-41-7	
Chromium, Total Recoverable	**<0.0050**	mg/L	0.0050	1	12/05/20 10:52	12/07/20 18:04	7440-47-3	
Lead, Total Recoverable	**<0.010**	mg/L	0.010	1	12/05/20 10:52	12/07/20 18:04	7439-92-1	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.023**	mg/L	0.010	1	12/05/20 11:21	12/08/20 14:54	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:48	7440-36-0	
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:48	7440-38-2	
Cadmium, Total Recoverable	**<0.00050**	mg/L	0.00050	1	12/03/20 16:38	12/07/20 15:48	7440-43-9	
Cobalt, Total Recoverable	**0.0016**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:48	7440-48-4	
Molybdenum, Total Recoverable	**0.0021**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:48	7439-98-7	
Selenium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:48	7782-49-2	
Thallium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	12/03/20 16:38	12/07/20 15:48	7440-28-0	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	**<0.20**	ug/L	0.20	1	12/09/20 14:45	12/10/20 09:04	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Fluoride	**0.37**	mg/L	0.20	1		12/07/20 20:25	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

QC Batch: 693986 Analysis Method: EPA 245.1
QC Batch Method: EPA 245.1 Analysis Description: 245.1 Mercury
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60355665001, 60355665002, 60355665003, 60355665004, 60355665005

METHOD BLANK: 2802342 Matrix: Water
Associated Lab Samples: 60355665001, 60355665002, 60355665003, 60355665004, 60355665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.20	0.20	12/10/20 08:32	

LABORATORY CONTROL SAMPLE: 2802343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2802344 2802345

Parameter	Units	60355303001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.26	5	5	5.3	5.3	101	100	70-130	1	20	

MATRIX SPIKE SAMPLE: 2802346

Parameter	Units	60355665003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	<0.20	5	4.1	82	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

QC Batch: 693041
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60355665001, 60355665002, 60355665003, 60355665004, 60355665005

METHOD BLANK: 2799001 Matrix: Water
Associated Lab Samples: 60355665001, 60355665002, 60355665003, 60355665004, 60355665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Barium	mg/L	<0.0050	0.0050	12/07/20 17:19	
Beryllium	mg/L	<0.0010	0.0010	12/07/20 17:19	
Chromium	mg/L	<0.0050	0.0050	12/07/20 17:19	
Lead	mg/L	<0.010	0.010	12/07/20 17:19	

LABORATORY CONTROL SAMPLE: 2799002

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	1	0.96	96	85-115	
Beryllium	mg/L	1	0.94	94	85-115	
Chromium	mg/L	1	0.91	91	85-115	
Lead	mg/L	1	1.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799003 2799004

Parameter	Units	60355665001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.031	1	1	1.0	0.99	99	96	70-130	3	20	
Beryllium	mg/L	<0.0010	1	1	0.96	0.94	96	94	70-130	3	20	
Chromium	mg/L	<0.0050	1	1	0.93	0.91	93	91	70-130	2	20	
Lead	mg/L	<0.010	1	1	0.97	0.96	97	95	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

QC Batch: 692596
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60355665001, 60355665002, 60355665003, 60355665004, 60355665005

METHOD BLANK: 2797246 Matrix: Water
Associated Lab Samples: 60355665001, 60355665002, 60355665003, 60355665004, 60355665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	mg/L	<0.0010	0.0010	12/07/20 14:32	
Arsenic	mg/L	<0.0010	0.0010	12/07/20 14:32	
Cadmium	mg/L	<0.00050	0.00050	12/07/20 14:32	
Cobalt	mg/L	<0.0010	0.0010	12/07/20 14:32	
Molybdenum	mg/L	<0.0010	0.0010	12/07/20 14:32	
Selenium	mg/L	<0.0010	0.0010	12/07/20 14:32	
Thallium	mg/L	<0.0010	0.0010	12/07/20 14:32	

LABORATORY CONTROL SAMPLE: 2797247

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.040	100	85-115	
Arsenic	mg/L	0.04	0.036	91	85-115	
Cadmium	mg/L	0.04	0.038	95	85-115	
Cobalt	mg/L	0.04	0.037	92	85-115	
Molybdenum	mg/L	0.04	0.041	103	85-115	
Selenium	mg/L	0.04	0.036	90	85-115	
Thallium	mg/L	0.04	0.037	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2797248 2797249

Parameter	Units	60355666001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	<0.0010	0.04	0.04	0.041	0.040	101	100	70-130	1	20	
Arsenic	mg/L	0.0045	0.04	0.04	0.044	0.043	98	96	70-130	1	20	
Cadmium	mg/L	<0.00050	0.04	0.04	0.037	0.037	93	92	70-130	1	20	
Cobalt	mg/L	<0.0010	0.04	0.04	0.040	0.040	99	98	70-130	1	20	
Molybdenum	mg/L	0.11	0.04	0.04	0.16	0.15	128	114	70-130	3	20	
Selenium	mg/L	<0.0010	0.04	0.04	0.036	0.036	90	90	70-130	0	20	
Thallium	mg/L	<0.0010	0.04	0.04	0.034	0.033	85	83	70-130	2	20	

MATRIX SPIKE SAMPLE: 2797250

Parameter	Units	60355665005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	<0.0010	0.04	0.040	99	70-130	
Arsenic	mg/L	<0.0010	0.04	0.038	95	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

MATRIX SPIKE SAMPLE: 2797250

Parameter	Units	60355665005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	mg/L	<0.00050	0.04	0.036	90	70-130	
Cobalt	mg/L	0.0016	0.04	0.040	96	70-130	
Molybdenum	mg/L	0.0021	0.04	0.046	111	70-130	
Selenium	mg/L	<0.0010	0.04	0.037	92	70-130	
Thallium	mg/L	<0.0010	0.04	0.033	82	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

QC Batch: 693045 — Analysis Method: EPA 6010
QC Batch Method: EPA 3010 — Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60355665001, 60355665002, 60355665003, 60355665004, 60355665005

METHOD BLANK: 2799023 — Matrix: Water
Associated Lab Samples: 60355665001, 60355665002, 60355665003, 60355665004, 60355665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lithium	mg/L	<0.010	0.010	12/08/20 14:32	

LABORATORY CONTROL SAMPLE: 2799024

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lithium	mg/L	1	1.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799025 2799026

Parameter	Units	60355665005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lithium	mg/L	0.023	1	1	1.1	1.0	103	102	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

QC Batch: 693099
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60355665001, 60355665002, 60355665003, 60355665004, 60355665005

METHOD BLANK: 2799439 Matrix: Water
Associated Lab Samples: 60355665001, 60355665002, 60355665003, 60355665004, 60355665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	<0.20	0.20	12/07/20 18:05	

METHOD BLANK: 2802005 Matrix: Water
Associated Lab Samples: 60355665001, 60355665002, 60355665003, 60355665004, 60355665005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	<0.20	0.20	12/08/20 08:15	

LABORATORY CONTROL SAMPLE: 2799440

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

LABORATORY CONTROL SAMPLE: 2802006

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799442 2799443

Parameter	Units	60354702003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.42	2.5	2.5	2.6	2.8	86	94	41-166	7	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799444 2799445

Parameter	Units	20180482038 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	2.4	25	25	25.1	25.3	91	92	41-166	1	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

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.

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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60355665

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60355665001	**IBA-1-113020**	EPA 200.7	693041	EPA 200.7	693133
60355665002	**IBA-2-113020**	EPA 200.7	693041	EPA 200.7	693133
60355665003	**IBA-3-113020**	EPA 200.7	693041	EPA 200.7	693133
60355665004	**IBA-4-113020**	EPA 200.7	693041	EPA 200.7	693133
60355665005	**DUP-IBA-113020**	EPA 200.7	693041	EPA 200.7	693133
60355665001	**IBA-1-113020**	EPA 3010	693045	EPA 6010	693124
60355665002	**IBA-2-113020**	EPA 3010	693045	EPA 6010	693124
60355665003	**IBA-3-113020**	EPA 3010	693045	EPA 6010	693124
60355665004	**IBA-4-113020**	EPA 3010	693045	EPA 6010	693124
60355665005	**DUP-IBA-113020**	EPA 3010	693045	EPA 6010	693124
60355665001	**IBA-1-113020**	EPA 200.8	692596	EPA 200.8	692829
60355665002	**IBA-2-113020**	EPA 200.8	692596	EPA 200.8	692829
60355665003	**IBA-3-113020**	EPA 200.8	692596	EPA 200.8	692829
60355665004	**IBA-4-113020**	EPA 200.8	692596	EPA 200.8	692829
60355665005	**DUP-IBA-113020**	EPA 200.8	692596	EPA 200.8	692829
60355665001	**IBA-1-113020**	EPA 245.1	693986	EPA 245.1	694012
60355665002	**IBA-2-113020**	EPA 245.1	693986	EPA 245.1	694012
60355665003	**IBA-3-113020**	EPA 245.1	693986	EPA 245.1	694012
60355665004	**IBA-4-113020**	EPA 245.1	693986	EPA 245.1	694012
60355665005	**DUP-IBA-113020**	EPA 245.1	693986	EPA 245.1	694012
60355665001	**IBA-1-113020**	EPA 300.0	693099		
60355665002	**IBA-2-113020**	EPA 300.0	693099		
60355665003	**IBA-3-113020**	EPA 300.0	693099		
60355665004	**IBA-4-113020**	EPA 300.0	693099		
60355665005	**DUP-IBA-113020**	EPA 300.0	693099		

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60355665

60355665

Client Name: Evergy KS central

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☐

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

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

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

Cooler Temperature (°C): **As-read** 2.4 **Corr. Factor** +0.2 **Corrected** 2.6

Date and initials of person examining contents: pv 12/1/20

Temperature should be above freezing to 6°C

Chain of Custody present:	☐Yes ☐No ☐N/A	
Chain of Custody relinquished:	☐Yes ☐No ☐N/A	
Samples arrived within holding time:	☐Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☐No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☐No ☐N/A	
Sufficient volume:	☐Yes ☐No ☐N/A	
Correct containers used:	☐Yes ☐No ☐N/A	
Pace containers used:	☐Yes ☐No ☐N/A	
Containers intact:	☐Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☐N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☐N/A	
Sample labels match COC: Date / time / ID / analyses	☐Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☐No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☐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)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☐N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☐N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical™ www.pacelabs.com

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

Page: 1 of 1

Section A Required Client Information:

Company:	EVERGY KANSAS CENTRAL, INC.
Address:	Jeffrey Energy Center (JEC) 818 Kansas Ave, Topeka, KS 66612
Email To:	melissa.michels@evergy.com
Phone:	785-575-8113
Fax:	
Requested Due Date/TAT:	7 day

Section B Required Project Information:

Report To:	Melissa Michels, Samantha Kaney, Danielle Zinsı
Copy To:	Jared Morrison, Jake Humphrey, Laura Hines JD Schlegel, Brandon Will, Sarah Hazelwood
Purchase Order No.:	10JEC-0000047747
Project Name:	JEC Inactive Bottom Ash Pond CCR
Project Number:	

Section C Invoice Information:

Attention:	Accounts Payable
Company Name:	EVERGY KANSAS CENTRAL, INC
Address:	SEE SECTION A
Pace Quote Reference:	
Pace Project Manager:	Jasmine Amerin, 913-563-1403
Pace Profile #:	9657, 2

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: KS

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW, WATER WT, WASTE WATER WW, PRODUCT P, SOIL/SOLID SL, OIL OL, WIPE WP, AIR AR, OTHER OT, TISSUE TS

Requested Analysis Filtered (Y/N): N N N N N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	200.7 Total Metals*	200.8 Total Metals**	300: F	245.1 Hg	6010 Total Metals***		Residual Chlorine (Y/N)	Pace Project No./Lab I.D. 60355665
1	IBA-1-113020	WT	G	-	-	11/30/20	1335		2	1		1							X	X	X	X	X	BPIV ~~BPS~~ ↓		~~BPAN~~ BPIN P 12/1/20 ↓ 001
2	IBA-2-113020	WT	G	-	-	11/30/20	1255		2	1		1							X	X	X	X	X			002
3	IBA-3-113020	WT	G	-	-	11/30/20	1156		2	1		1							X	X	X	X	X			003
4	IBA-4-113020	WT	G	-	-	11/30/20	1500		2	1		1							X	X	X	X	X			004
5	DUP-IBA-113020	WT	G	-	-	11/30/20	1205		2	1		1							X	X	X	X	X			005
6																										
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
200.7 Total Metals*: Ba, Be, Cr, Pb (4 metals)	[signature]	12/1/20	1500	[signature] PASI	12/1/20	1635	2.6	Y	Y	Y
200.8 Total Metals**: Sb, As, Cd, Co, Mo, Se, Tl (7 metals)										
6010 Total Metals***: Li (1 metal)										
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Duncan McDonald

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 11/30/20

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 23, 2020

Melissa Michels
Evergy, Inc.
818 Kansas Avenue
Topeka, KS 66612

RE: Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on December 02, 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 - Greensburg

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

Sincerely,

Jasmine Amerin
jasmine.amerin@pacelabs.com
(913)599-5665
Project Manager

Enclosures

cc: Sarah Hazelwood, Evergy, Inc.
Laura Hines, Evergy, Inc.
Jake Humphrey, Evergy, Inc.
Dustin Kadous, Evergy Kansas Central, Inc. Jeffrey Energy Center
Samantha Kaney, Haley & Aldrich
Jared Morrison, Evergy, Inc.
Melanie Satanek, Haley & Aldrich, Inc.
JD Schlegel, Evergy, Inc.
Danielle Zinmaster, Haley & Aldrich

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CERTIFICATIONS

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

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

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SAMPLE SUMMARY

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60356388001	**IBA-1-113020**	Water	11/30/20 13:35	12/02/20 11:00
60356388002	**IBA-2-113020**	Water	11/30/20 12:55	12/02/20 11:00
60356388003	**IBA-3-113020**	Water	11/30/20 11:50	12/02/20 11:00
60356388004	**IBA-4-113020**	Water	11/30/20 15:00	12/02/20 11:00
60356388005	**DUP-IBA-113020**	Water	11/30/20 12:05	12/02/20 11:00

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SAMPLE ANALYTE COUNT

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60356388001	**IBA-1-113020**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60356388002	**IBA-2-113020**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60356388003	**IBA-3-113020**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60356388004	**IBA-4-113020**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60356388005	**DUP-IBA-113020**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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PROJECT NARRATIVE

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: Evergy Kansas Central, Inc.
Date: December 23, 2020

General Information:
5 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: Evergy Kansas Central, Inc.
Date: December 23, 2020

General Information:
5 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

Method: **Total Radium Calculation**
Description: Total Radium 228+226
Client: Evergy Kansas Central, Inc.
Date: December 23, 2020

General Information:
5 samples were analyzed for Total Radium Calculation by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

Sample: IBA-1-113020 **Lab ID: 60356388001** Collected: 11/30/20 13:35 Received: 12/02/20 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.206 ± 0.404 (0.967) C:NA T:81%**	pCi/L	12/22/20 15:48	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**-0.0524 ± 0.378 (0.884) C:74% T:82%**	pCi/L	12/21/20 12:21	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.000 ± 0.553 (0.967)**	pCi/L	12/23/20 10:39	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

Sample: IBA-2-113020 **Lab ID: 60356388002** Collected: 11/30/20 12:55 Received: 12/02/20 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0639 ± 0.452 (0.960) C:NA T:89%**	pCi/L	12/22/20 15:48	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.779 ± 0.550 (1.07) C:72% T:60%**	pCi/L	12/21/20 12:21	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.779 ± 0.712 (1.07)**	pCi/L	12/23/20 10:39	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

Sample: IBA-3-113020 **Lab ID: 60356388003** Collected: 11/30/20 11:50 Received: 12/02/20 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0749 ± 0.487 (0.982) C:NA T:92%**	pCi/L	12/22/20 15:48	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.268 ± 0.322 (0.678) C:69% T:84%**	pCi/L	12/21/20 12:17	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.343 ± 0.584 (0.982)**	pCi/L	12/23/20 10:39	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

Sample: IBA-4-113020 **Lab ID: 60356388004** Collected: 11/30/20 15:00 Received: 12/02/20 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.592 ± 0.619 (0.970) C:NA T:84%**	pCi/L	12/22/20 15:48	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.483 ± 0.791 (1.72) C:74% T:54%**	pCi/L	12/21/20 15:23	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.08 ± 1.00 (1.72)**	pCi/L	12/23/20 10:39	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

Sample: DUP-IBA-113020 **Lab ID: 60356388005** Collected: 11/30/20 12:05 Received: 12/02/20 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0777 ± 0.457 (1.02) C:NA T:83%**	pCi/L	12/22/20 15:48	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.468 ± 0.636 (1.36) C:73% T:68%**	pCi/L	12/21/20 15:23	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.468 ± 0.783 (1.36)**	pCi/L	12/23/20 10:39	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
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QUALITY CONTROL - RADIOCHEMISTRY

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

QC Batch: 426666 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: 60356388001, 60356388002, 60356388003, 60356388004, 60356388005

METHOD BLANK: 2061892 Matrix: Water
Associated Lab Samples: 60356388001, 60356388002, 60356388003, 60356388004, 60356388005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.721 ± 0.381 (0.679) C:76% T:90%	pCi/L	12/21/20 12:22	

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

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL - RADIOCHEMISTRY

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

QC Batch: 426665 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: 60356388001, 60356388002, 60356388003, 60356388004, 60356388005

METHOD BLANK: 2061890 Matrix: Water
Associated Lab Samples: 60356388001, 60356388002, 60356388003, 60356388004, 60356388005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.103 ± 0.236 (0.555) C:NA T:93%	pCi/L	12/22/20 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

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

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.

Pace Analytical Services, LLC
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Lenexa, KS 66219
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: JEC Inactive Bottom Ash Pond C
Pace Project No.: 60356388

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60356388001	**IBA-1-113020**	EPA 903.1	426665		
60356388002	**IBA-2-113020**	EPA 903.1	426665		
60356388003	**IBA-3-113020**	EPA 903.1	426665		
60356388004	**IBA-4-113020**	EPA 903.1	426665		
60356388005	**DUP-IBA-113020**	EPA 903.1	426665		
60356388001	**IBA-1-113020**	EPA 904.0	426666		
60356388002	**IBA-2-113020**	EPA 904.0	426666		
60356388003	**IBA-3-113020**	EPA 904.0	426666		
60356388004	**IBA-4-113020**	EPA 904.0	426666		
60356388005	**DUP-IBA-113020**	EPA 904.0	426666		
60356388001	**IBA-1-113020**	Total Radium Calculation	428430		
60356388002	**IBA-2-113020**	Total Radium Calculation	428430		
60356388003	**IBA-3-113020**	Total Radium Calculation	428430		
60356388004	**IBA-4-113020**	Total Radium Calculation	428430		
60356388005	**DUP-IBA-113020**	Total Radium Calculation	428430		

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www.pacelabs.com

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:	EVERGY KANSAS CENTRAL, INC.
Address:	Jeffrey Energy Center (JEC)
	818 Kansas Ave, Topeka, KS 66612
Email To:	melissa.michels@evergy.com
Phone: (785) 575-8113	Fax:
Requested Due Date/TAT:	15 Day

Section B — **Required** Project Information:

Report To:	Melissa Michels
Copy To:	Jared Morrison, Jake Humphrey, Laura Hines
	JD Schlegel, Brandon Will, Sarah Hazelwood
Purchase Order No.:	10JEC-0000047747
Project Name:	JEC Inactive Bottom Ash Pond CCR - Radiu
Project Number:	

Section C — Invoice Information:

Attention:	Accounts Payable
Company Name:	EVERGY KANSAS CENTRAL, INC
Address:	SEE SECTION A
Pace Quote Reference:	
Pace Project Manager:	Jasmine Amerin, 913-563-1403
Pace Profile #:	9657, 2

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: KS

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
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COLLECTED: COMPOSITE START TIME	COLLECTED: COMPOSITE END/GRAB DATE	COLLECTED: COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Radium-226	Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N		
1	IBA-1-113020	WT	G	-	-	11/30/20	1335		2			2							X	X	X		
2	IBA-2-113020	WT	G	-	-	11/30/20	1255		2			2							X	X	X		
3	IBA-3-113020	WT	G	-	-	11/30/20	1150		2			2							X	X	X		
4	IBA-4-113020	WT	G	-	-	11/30/20	1606		2			2							X	X	X		
5	DUP-IBA-113020	WT	G	-	-	11/30/20	1205		2			2							X	X	X		
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Direct Ship to Pace Pittsburgh for Radium analysis				SW Will	12/2/2020	1100	-	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Duncan McDonald

SIGNATURE of SAMPLER: _____ DATE Signed (MM/DD/YY): 11/30/20

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

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: Evergy KS Project #

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other

Label

LIMS Login

Tracking #: 930847670353

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Thermometer Used Type of Ice: Wet Blue (None)

Cooler Temperature Observed Temp °C Correction Factor: °C Final Temp: °C

Temp should be above freezing to 6°C

pH paper Lot# 10004401 Date and Initials of person examining contents: 12/3/2020 SW

Comments:	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:	✓			4.
Sample Labels match COC: -Includes date/time/ID Matrix: WT	✓			5.
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used: -Pace Containers Used:	✓ ✓			10.
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Hex Cr Aqueous sample field filtered			✓	13.
Organic Samples checked for dechlorination:			✓	14.
Filtered volume received for Dissolved tests			✓	15.
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	✓			16. pH<2
All containers meet method preservation requirements.	✓			Initial when completed SW Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	17.
Trip Blank Present:		✓		18.
Trip Blank Custody Seals Present			✓	
Rad Samples Screened < 0.5 mrem/hr	✓			Initial when completed: SW Date: 12/3/2020

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

***PM review** is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Quality Control Sample Performance Assessment

Pace Analytical
www.pacelabs.com

Test: Ra-226
Analyst: MK1
Date: 12/14/2020
Batch ID: 57853
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2061890
MB concentration:	-0.103
M/B Counting Uncertainty:	0.202
MB MDC:	0.555
MB Numerical Performance Indicator:	-1.00
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS57853	LCSD57853
Count Date:	12/22/2020	12/22/2020
Spike I.D.:	20-032	20-032
Spike Concentration (pCi/mL):	32.180	32.180
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.666	0.658
Target Conc. (pCi/L, g, F):	4.829	4.893
Uncertainty (Calculated):	0.227	0.230
Result (pCi/L, g, F):	5.859	4.901
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.127	1.004
Numerical Performance Indicator:	1.76	0.01
Percent Recovery:	121.33%	100.16%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	73%	73%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	12/2/2020	
Sample I.D.	35596146001	
Sample MS I.D.	35596146001MS	
Sample MSD I.D.		
Spike I.D.:	20-032	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	32.181	
Spike Volume Used in MS (mL):	0.20	
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):	0.648	
MS Target Conc.(pCi/L, g, F):	9.940	
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):	0.467	
MSD Spike Uncertainty (calculated):		
Sample Result:	22.150	
Sample Result Counting Uncertainty (pCi/L, g, F):	2.069	
Sample Matrix Spike Result:	29.294	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	2.543	
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:	-1.654	
MSD Numerical Performance Indicator:		
MS Percent Recovery:	71.87%	
MSD Percent Recovery:		
MS Status vs Numerical Indicator:	N/A	
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:	Pass	
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:	136%	
MS/MSD Lower % Recovery Limits:	71%	

Duplicate Sample Assessment		
Sample I.D.:	LCS57853	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD57853	
Sample Result (pCi/L, g, F):	5.859	
Sample Result Counting Uncertainty (pCi/L, g, F):	1.127	
Sample Duplicate Result (pCi/L, g, F):	4.901	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	1.004	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.244	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	19.12%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	32%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
MS/ MSD Duplicate Status vs Numerical Indicator:		
MS/ MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the RL.

Comments:

SLC 12/22/2020

CMK 12/22/2020

Quality Control Sample Performance Assessment

Pace Analytical
www.pacelabs.com

Test:	Ra-228
Analyst:	VAL
Date:	12/17/2020
Worklist:	57854
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2061892
MB concentration:	0.721
M/B 2 Sigma CSU:	0.381
MB MDC:	0.679
MB Numerical Performance Indicator:	3.71
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS57854	LCSD57854
Count Date:	12/21/2020	12/21/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	37.186	37.186
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.810	0.814
Target Conc. (pCi/L, g, F):	4.591	4.571
Uncertainty (Calculated):	0.225	0.224
Result (pCi/L, g, F):	4.611	4.887
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.019	1.085
Numerical Performance Indicator:	0.04	0.56
Percent Recovery:	100.45%	106.91%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:	12/2/2020	
Sample I.D.	35596146001	
Sample MS I.D.	35596146001MS	
Sample MSD I.D.		
Spike I.D.:	20-030	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	37.423	
Spike Volume Used in MS (mL):	0.20	
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):	0.811	
MS Target Conc.(pCi/L, g, F):	9.226	
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):	0.452	
MSD Spike Uncertainty (calculated):		
Sample Result:	0.917	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.466	
Sample Matrix Spike Result:	10.313	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	2.061	
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:	0.154	
MSD Numerical Performance Indicator:		
MS Percent Recovery:	101.84%	
MSD Percent Recovery:		
MS Status vs Numerical Indicator:	Pass	
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:	Pass	
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:	135%	
MS/MSD Lower % Recovery Limits:	60%	

Duplicate Sample Assessment		
Sample I.D.:	LCS57854	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD57854	
Sample Result (pCi/L, g, F):	4.611	
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.019	
Sample Duplicate Result (pCi/L, g, F):	4.887	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.085	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-0.363	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	6.23%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
MS/ MSD Duplicate Status vs Numerical Indicator:		
MS/ MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:
*The method blank result is below the reporting limit for this analysis and is acceptable.

12/23/20

ATTACHMENT 1-3
March 2021 Sampling Event
Laboratory Analytical Report

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

March 17, 2021

Melissa Michels
Evergy, Inc.
818 Kansas Avenue
Topeka, KS 66612

RE: Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on March 05, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Kansas City

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

Sincerely,

Jasmine Amerin
jasmine.amerin@pacelabs.com
(913)599-5665
Project Manager

Enclosures

cc: Sarah Hazelwood, Evergy, Inc.
Laura Hines, Evergy, Inc.
Jake Humphrey, Evergy, Inc.
Dustin Kadous, Evergy Kansas Central, Inc. Jeffrey Energy Center
Samantha Kaney, Haley & Aldrich
Jared Morrison, Evergy, Inc.
Danielle Oberbroeckling, Haley & Aldrich
Melanie Satanek, Haley & Aldrich, Inc.
JD Schlegel, Evergy, Inc.

Pace Analytical Services, LLC
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Lenexa, KS 66219
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CERTIFICATIONS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

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

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60362961001	**IBA-1-030421**	Water	03/04/21 10:20	03/05/21 17:00
60362961002	**IBA-2-030421**	Water	03/04/21 12:40	03/05/21 17:00
60362961003	**IBA-3-030421**	Water	03/04/21 13:41	03/05/21 17:00
60362961004	**IBA-4-030421**	Water	03/04/21 10:10	03/05/21 17:00
60362961005	**IBA-DUP-030421**	Water	03/04/21 10:20	03/05/21 17:00

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SAMPLE ANALYTE COUNT

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60362961001	**IBA-1-030421**	EPA 200.7	TDS	3	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	AJS, MJK	3	PASI-K
60362961002	**IBA-2-030421**	EPA 200.7	TDS	3	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	AJS, MJK	3	PASI-K
60362961003	**IBA-3-030421**	EPA 200.7	TDS	3	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	AJS, MJK	3	PASI-K
60362961004	**IBA-4-030421**	EPA 200.7	TDS	3	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	AJS	3	PASI-K
60362961005	**IBA-DUP-030421**	EPA 200.7	TDS	3	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	AJS, MJK	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Evergy Kansas Central, Inc.
Date: March 17, 2021

General Information:
5 samples were analyzed for EPA 200.7 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 707827

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60362960004,60362963003

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

- MS (Lab ID: 2850597)
  - Calcium
- MS (Lab ID: 2850599)
  - Calcium
- MSD (Lab ID: 2850598)
  - Calcium

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Evergy Kansas Central, Inc.
Date: March 17, 2021

General Information:
5 samples were analyzed for EPA 6010 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Method: **EPA 200.8**
Description: 200.8 MET ICPMS
Client: Evergy Kansas Central, Inc.
Date: March 17, 2021

General Information:
5 samples were analyzed for EPA 200.8 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.8 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: Evergy Kansas Central, Inc.
Date: March 17, 2021

General Information:
5 samples were analyzed for SM 2540C by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Evergy Kansas Central, Inc.
Date: March 17, 2021

General Information:
5 samples were analyzed for SM 4500-H+B by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- IBA-1-030421 (Lab ID: 60362961001)
- IBA-2-030421 (Lab ID: 60362961002)
- IBA-3-030421 (Lab ID: 60362961003)
- IBA-4-030421 (Lab ID: 60362961004)
- IBA-DUP-030421 (Lab ID: 60362961005)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy Kansas Central, Inc.
Date: March 17, 2021

General Information:
5 samples were analyzed for EPA 300.0 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 707523

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

- MS (Lab ID: 2849682)
  - Sulfate
- MSD (Lab ID: 2849683)
  - Sulfate

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Sample: IBA-1-030421 **Lab ID: 60362961001** Collected: 03/04/21 10:20 Received: 03/05/21 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.030**	mg/L	0.0050	1	03/10/21 12:01	03/15/21 23:09	7440-39-3	
Boron, Total Recoverable	**0.37**	mg/L	0.10	1	03/10/21 12:01	03/15/21 23:09	7440-42-8	
Calcium, Total Recoverable	**302**	mg/L	0.20	1	03/10/21 12:01	03/15/21 23:09	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.015**	mg/L	0.010	1	03/11/21 10:57	03/15/21 20:11	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**0.0020**	mg/L	0.0010	1	03/11/21 10:57	03/16/21 13:05	7440-48-4	
Molybdenum, Total Recoverable	**0.0073**	mg/L	0.0010	1	03/11/21 10:57	03/17/21 11:29	7439-98-7	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1710**	mg/L	20.0	1		03/11/21 13:26		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		03/12/21 10:40		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**125**	mg/L	20.0	20		03/09/21 19:43	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		03/09/21 19:28	16984-48-8	
Sulfate	**863**	mg/L	100	100		03/10/21 18:39	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Sample: IBA-2-030421 **Lab ID: 60362961002** Collected: 03/04/21 12:40 Received: 03/05/21 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.028**	mg/L	0.0050	1	03/10/21 12:01	03/15/21 23:18	7440-39-3	
Boron, Total Recoverable	**0.21**	mg/L	0.10	1	03/10/21 12:01	03/15/21 23:18	7440-42-8	
Calcium, Total Recoverable	**227**	mg/L	0.20	1	03/10/21 12:01	03/15/21 23:18	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.019**	mg/L	0.010	1	03/11/21 10:57	03/15/21 20:26	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**0.0011**	mg/L	0.0010	1	03/11/21 10:57	03/16/21 13:09	7440-48-4	
Molybdenum, Total Recoverable	**0.0023**	mg/L	0.0010	1	03/11/21 10:57	03/17/21 11:31	7439-98-7	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1340**	mg/L	13.3	1		03/11/21 13:27		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**6.9**	Std. Units	0.10	1		03/12/21 10:47		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**111**	mg/L	20.0	20		03/09/21 20:26	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		03/09/21 19:57	16984-48-8	
Sulfate	**608**	mg/L	50.0	50		03/10/21 18:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Sample: IBA-3-030421 **Lab ID: 60362961003** Collected: 03/04/21 13:41 Received: 03/05/21 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.019**	mg/L	0.0050	1	03/10/21 12:01	03/15/21 23:21	7440-39-3	
Boron, Total Recoverable	**0.28**	mg/L	0.10	1	03/10/21 12:01	03/15/21 23:21	7440-42-8	
Calcium, Total Recoverable	**258**	mg/L	0.20	1	03/10/21 12:01	03/15/21 23:21	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.021**	mg/L	0.010	1	03/11/21 10:57	03/15/21 20:28	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**0.0017**	mg/L	0.0010	1	03/11/21 10:57	03/16/21 13:13	7440-48-4	
Molybdenum, Total Recoverable	**0.0022**	mg/L	0.0010	1	03/11/21 10:57	03/17/21 11:34	7439-98-7	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1570**	mg/L	13.3	1		03/11/21 13:27		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.0**	Std. Units	0.10	1		03/12/21 10:53		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**124**	mg/L	20.0	20		03/09/21 21:37	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		03/09/21 20:54	16984-48-8	
Sulfate	**778**	mg/L	50.0	50		03/10/21 19:22	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Sample: IBA-4-030421 **Lab ID: 60362961004** Collected: 03/04/21 10:10 Received: 03/05/21 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.019**	mg/L	0.0050	1	03/10/21 12:01	03/15/21 23:23	7440-39-3	
Boron, Total Recoverable	**0.23**	mg/L	0.10	1	03/10/21 12:01	03/15/21 23:23	7440-42-8	
Calcium, Total Recoverable	**106**	mg/L	0.20	1	03/10/21 12:01	03/15/21 23:23	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.035**	mg/L	0.010	1	03/11/21 10:57	03/15/21 20:31	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	03/11/21 10:57	03/16/21 13:18	7440-48-4	
Molybdenum, Total Recoverable	**0.0018**	mg/L	0.0010	1	03/11/21 10:57	03/17/21 11:39	7439-98-7	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**689**	mg/L	10.0	1		03/11/21 13:27		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.4**	Std. Units	0.10	1		03/12/21 10:37		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**18.6**	mg/L	1.0	1		03/09/21 21:52	16887-00-6	
Fluoride	**0.52**	mg/L	0.20	1		03/09/21 21:52	16984-48-8	
Sulfate	**177**	mg/L	20.0	20		03/09/21 22:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Sample: IBA-DUP-030421 **Lab ID: 60362961005** Collected: 03/04/21 10:20 Received: 03/05/21 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	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, Total Recoverable	**0.031**	mg/L	0.0050	1	03/10/21 12:01	03/15/21 23:26	7440-39-3	
Boron, Total Recoverable	**0.37**	mg/L	0.10	1	03/10/21 12:01	03/15/21 23:26	7440-42-8	
Calcium, Total Recoverable	**313**	mg/L	0.20	1	03/10/21 12:01	03/15/21 23:26	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.013**	mg/L	0.010	1	03/11/21 10:57	03/15/21 20:33	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**0.0019**	mg/L	0.0010	1	03/11/21 10:57	03/16/21 13:26	7440-48-4	
Molybdenum, Total Recoverable	**0.0069**	mg/L	0.0010	1	03/11/21 10:57	03/17/21 11:42	7439-98-7	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1680**	mg/L	20.0	1		03/11/21 13:27		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.1**	Std. Units	0.10	1		03/12/21 10:41		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**125**	mg/L	20.0	20		03/09/21 22:35	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		03/09/21 22:20	16984-48-8	
Sulfate	**802**	mg/L	100	100		03/10/21 19:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

QC Batch: 707827
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60362961001, 60362961002, 60362961003, 60362961004, 60362961005

METHOD BLANK: 2850595 Matrix: Water
Associated Lab Samples: 60362961001, 60362961002, 60362961003, 60362961004, 60362961005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Barium	mg/L	<0.0050	0.0050	03/15/21 22:34	
Boron	mg/L	<0.10	0.10	03/15/21 22:34	
Calcium	mg/L	<0.20	0.20	03/15/21 22:34	

LABORATORY CONTROL SAMPLE: 2850596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	1	0.98	98	85-115	
Boron	mg/L	1	0.96	96	85-115	
Calcium	mg/L	10	10.2	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2850597 2850598

Parameter	Units	60362960004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.057	1	1	1.0	1.0	97	97	70-130	0	20	
Boron	mg/L	0.40	1	1	1.4	1.4	96	96	70-130	0	20	
Calcium	mg/L	355	10	10	352	351	-28	-39	70-130	0	20	M1

MATRIX SPIKE SAMPLE: 2850599

Parameter	Units	60362963003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	<0.0050	1	1.0	99	70-130	
Boron	mg/L	1.7	1	2.7	96	70-130	
Calcium	mg/L	537	10	555	179	70-130	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

QC Batch: 708056 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: 60362961001, 60362961002, 60362961003, 60362961004, 60362961005

METHOD BLANK: 2851450 Matrix: Water
Associated Lab Samples: 60362961001, 60362961002, 60362961003, 60362961004, 60362961005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cobalt	mg/L	<0.0010	0.0010	03/16/21 13:00	
Molybdenum	mg/L	<0.0010	0.0010	03/17/21 11:26	

LABORATORY CONTROL SAMPLE: 2851451

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	mg/L	0.04	0.040	100	85-115	
Molybdenum	mg/L	0.04	0.040	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2851452 2851453

Parameter	Units	60362962002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	<0.0017	0.04	0.04	0.040	0.039	99	97	70-130	2	20	
Molybdenum	mg/L	<0.0017	0.04	0.04	0.041	0.040	101	100	70-130	1	20	

MATRIX SPIKE SAMPLE: 2851454

Parameter	Units	60362965003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cobalt	mg/L	<0.0010	0.04	0.044	108	70-130	
Molybdenum	mg/L	0.0027	0.04	0.050	117	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

QC Batch: 708058 | Analysis Method: EPA 6010
QC Batch Method: EPA 3010 | Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60362961001, 60362961002, 60362961003, 60362961004, 60362961005

METHOD BLANK: 2851455 Matrix: Water
Associated Lab Samples: 60362961001, 60362961002, 60362961003, 60362961004, 60362961005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lithium	mg/L	<0.010	0.010	03/15/21 20:07	

LABORATORY CONTROL SAMPLE: 2851456

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lithium	mg/L	1	0.95	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2851457 2851458

Parameter	Units	60362961001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lithium	mg/L	0.015	1	1	1.0	1.0	100	98	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

QC Batch: 707980 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60362961001, 60362961002, 60362961003, 60362961004, 60362961005

METHOD BLANK: 2851179 Matrix: Water
Associated Lab Samples: 60362961001, 60362961002, 60362961003, 60362961004, 60362961005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	03/11/21 13:24	

LABORATORY CONTROL SAMPLE: 2851180

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

SAMPLE DUPLICATE: 2851181

Parameter	Units	60362782001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	12500	13400	7	10	

SAMPLE DUPLICATE: 2851182

Parameter	Units	60362961001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1710	1720	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

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

QC Batch: 708291
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60362961001, 60362961002, 60362961003, 60362961004, 60362961005

SAMPLE DUPLICATE: 2852390

Parameter	Units	60362961004 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.4	7.3	1	5	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

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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

QC Batch: 707523
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60362961001, 60362961002, 60362961003, 60362961004, 60362961005

METHOD BLANK: 2849680 Matrix: Water
Associated Lab Samples: 60362961001, 60362961002, 60362961003, 60362961004, 60362961005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	03/09/21 12:26	
Fluoride	mg/L	<0.20	0.20	03/09/21 12:26	
Sulfate	mg/L	<1.0	1.0	03/09/21 12:26	

METHOD BLANK: 2850717 Matrix: Water
Associated Lab Samples: 60362961001, 60362961002, 60362961003, 60362961004, 60362961005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	03/10/21 16:30	
Fluoride	mg/L	<0.20	0.20	03/10/21 16:30	
Sulfate	mg/L	<1.0	1.0	03/10/21 16:30	

LABORATORY CONTROL SAMPLE: 2849681

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	2.4	98	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 2850718

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	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2849682 2849683

Parameter	Units	60362867002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.0	5	5	17.6	17.5	113	111	80-120	1	15	
Fluoride	mg/L	0.71	2.5	2.5	3.3	3.3	105	103	80-120	1	15	
Sulfate	mg/L	19.9	5	5	25.5	25.4	113	111	80-120	0	15	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

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9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

MATRIX SPIKE SAMPLE: 2849684

Parameter	Units	60362961002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	111	100	222	111	80-120	
Fluoride	mg/L	<0.20	2.5	2.8	114	80-120	
Sulfate	mg/L	608	250	886	111	80-120	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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.

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: JEC INACTIVE BOTTOM ASH POND C
Pace Project No.: 60362961

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60362961001	**IBA-1-030421**	EPA 200.7	707827	EPA 200.7	707926
60362961002	**IBA-2-030421**	EPA 200.7	707827	EPA 200.7	707926
60362961003	**IBA-3-030421**	EPA 200.7	707827	EPA 200.7	707926
60362961004	**IBA-4-030421**	EPA 200.7	707827	EPA 200.7	707926
60362961005	**IBA-DUP-030421**	EPA 200.7	707827	EPA 200.7	707926
60362961001	**IBA-1-030421**	EPA 3010	708058	EPA 6010	708168
60362961002	**IBA-2-030421**	EPA 3010	708058	EPA 6010	708168
60362961003	**IBA-3-030421**	EPA 3010	708058	EPA 6010	708168
60362961004	**IBA-4-030421**	EPA 3010	708058	EPA 6010	708168
60362961005	**IBA-DUP-030421**	EPA 3010	708058	EPA 6010	708168
60362961001	**IBA-1-030421**	EPA 200.8	708056	EPA 200.8	708167
60362961002	**IBA-2-030421**	EPA 200.8	708056	EPA 200.8	708167
60362961003	**IBA-3-030421**	EPA 200.8	708056	EPA 200.8	708167
60362961004	**IBA-4-030421**	EPA 200.8	708056	EPA 200.8	708167
60362961005	**IBA-DUP-030421**	EPA 200.8	708056	EPA 200.8	708167
60362961001	**IBA-1-030421**	SM 2540C	707980		
60362961002	**IBA-2-030421**	SM 2540C	707980		
60362961003	**IBA-3-030421**	SM 2540C	707980		
60362961004	**IBA-4-030421**	SM 2540C	707980		
60362961005	**IBA-DUP-030421**	SM 2540C	707980		
60362961001	**IBA-1-030421**	SM 4500-H+B	708291		
60362961002	**IBA-2-030421**	SM 4500-H+B	708291		
60362961003	**IBA-3-030421**	SM 4500-H+B	708291		
60362961004	**IBA-4-030421**	SM 4500-H+B	708291		
60362961005	**IBA-DUP-030421**	SM 4500-H+B	708291		
60362961001	**IBA-1-030421**	EPA 300.0	707523		
60362961002	**IBA-2-030421**	EPA 300.0	707523		
60362961003	**IBA-3-030421**	EPA 300.0	707523		
60362961004	**IBA-4-030421**	EPA 300.0	707523		
60362961005	**IBA-DUP-030421**	EPA 300.0	707523		

Pace Analytical
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Sample Condition Upon Receipt

WO# : 60362961

60362961

Client Name: EVRG KS Central

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

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

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

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

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

Cooler Temperature (°C): **As-read** 2.4 **Corr. Factor** 0.0 **Corrected** 2.4

Date and initials of person examining contents: DV 3/5/21

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐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)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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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:	EVERGY KANSAS CENTRAL, INC.
Address:	Jeffrey Energy Center (JEC)
	818 Kansas Ave, Topeka, KS 66612
Email To:	melissa.michels@evergy.com
Phone: 785-575-8113	Fax:
Requested Due Date/TAT:	7 day

Section B — **Required** Project Information:

Report To:	Melissa Michels, Samantha Kaney, Danielle Ober
Copy To:	Jared Morrison, Jake Humphrey, Laura Hines
	JD Schlegel, Brandon Will, Sarah Hazelwood
Purchase Order No.:	
Project Name:	JEC Inactive Bottom Ash Pond CCR
Project Number:	

Section C — Invoice Information:

Attention:	Accounts Payable
Company Name:	EVERGY KANSAS CENTRAL, INC
Address:	SEE SECTION A
Pace Quote Reference:	
Pace Project Manager:	Jasmine Amerin, 913-563-1403
Pace Profile #:	9657, 1

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location **STATE:** KS

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
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	200.7 Total Metals*	200.8 Total Metals**	300: Cl, F, SO4	2540C TDS	4500 H+B pH	6010 Total Metals***							Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Y/N	N	N	N	N	N	N						
1	IBA-1-030421	WT	G	-	-	03/04/21	10:20		3	2		1							X	X	X	X	X	X	2	3	P	1/4	G	P	N	001
2	IBA-2-030421	WT	G	-	-	03/04/21	12:40		3	2		1							X	X	X	X	X	X								002
3	IBA-3-030421	WT	G	-	-	03/04/21	13:41		3	2		1							X	X	X	X	X	X								003
4	IBA-4-030421	WT	G	-	-	03/04/21	10:10		3	2		1							X	X	X	X	X	X								004
5	IBA-DUP-030421	WT	G	-	-	03/04/21	10:20		3	2		1							X	X	X	X	X	X								005
6																															
7																															
8																															
9																															
10																															
11																															
12																															

Pace Project No./ Lab I.D.: 60362961

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
200.7 Total Metals*: B, Ca, Ba	Jason R. Franks / SCS	3/5/21	17:00		3/5	1700	2-4	Y	N	Y
200.8 Total Metals**: Co, Mo										
6010 Total Metals***: Li										

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Jason R. Franks				
SIGNATURE of SAMPLER:	DATE Signed (MM/DD/YY): 3/5/21				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

ATTACHMENT 2
Statistical Analysis

ATTACHMENT 2-1
March 2020 Statistical Analysis

HALEY & ALDRICH, INC.
6500 Rockside Road
Suite 200
Cleveland, OH 44131
216.739.0555

TECHNICAL MEMORANDUM

November 10, 2022
File No. 129778

TO: Evergy Kansas Central, Inc.
Jared Morrison – Director, Water and Waste Programs

FROM: Haley & Aldrich, Inc.
Steven F. Putrich, P.E., Principal Consultant – Engineering Principal
Mark Nicholls, P.G., Senior Associate – Senior Hydrogeologist

SUBJECT: March 2020 Semi-annual Groundwater Assessment Monitoring Data
Statistical Evaluation
Completed July 14, 2020
Jeffrey Energy Center
Bottom Ash Pond (inactive)

Pursuant to Title 40 Code of Federal Regulations (40 CFR) §§ 257.93 and 257.95 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the **March 2020** semi-annual assessment monitoring groundwater sampling event for the Jeffrey Energy Center (JEC) Bottom Ash Pond (BAP; inactive). This semi-annual assessment monitoring groundwater sampling event was completed **March 3 – 4, 2020**, with laboratory results received and accepted on **April 20, 2020**.

The statistical evaluation discussed in this memorandum was conducted to determine if Appendix IV groundwater monitoring constituents have been detected in downgradient wells at concentrations that represent a statistically significant increase (SSI) above background values and if one or more of the constituents have been detected at statistically significant levels (SSL) above the groundwater protection standard (GWPS) consistent with the requirements of the Rule. GWPSs for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level, 40 CFR § 257.95(h)(2) levels (from regional screening levels), or background concentration.

Statistical Evaluation of Appendix IV Constituents

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion residual (CCR) unit (40 CFR § 257.93(f) (1-4)). The statistical method used for these evaluations, tolerance limit (TL), was certified by Haley & Aldrich, Inc. on July 14, 2020. The TL method, as determined applicable for this sampling event, was used to evaluate potential SSLs above background. Background levels for each constituent listed in Appendix IV were computed as upper

tolerance limits (UTL), and a minimum 95 percent confidence coefficient and 95 percent coverage. The most recent groundwater sampling event from each compliance well was compared to the corresponding background UTL to determine if a SSL existed.

STATISTICAL EVALUATION

An interwell evaluation was used to determine the SSIs. Interwell evaluation compares the most recent values from downgradient compliance wells against a background dataset composed of upgradient well data. Because the CCR unit has transitioned into assessment monitoring, no statistical evaluations were conducted on Appendix III (detection monitoring) semi-annual assessment monitoring data.

The TL method was used to complete statistical evaluations of the referenced dataset. The TL procedure is one in which a concentration limit for each constituent is established from the distribution of the background data, with a minimum 95 percent confidence level. The upper endpoint of a tolerance interval is called the UTL. Depending on the data distribution, parametric or non-parametric TL procedures are used to evaluate groundwater monitoring data using this method. Parametric TLs utilize normally distributed data or normalized data via a transformation of the sample background data used to construct the limit. If the data are non-normal and a transformation is not indicated, non-parametric procedures (order statistics or bootstrap methods) are used to calculate the TL. If all the background data are non-detect, a maximum reporting limit may serve as an appropriate UTL.

These statistical evaluations were conducted using a background dataset for all Appendix IV constituents that were detected in the annual assessment monitoring sample event. If an Appendix IV constituent concentration from the **March 2020** sampling event was above the GWPS, the lower confidence limit (LCL) for the downgradient well constituent will be used to evaluate if a SSI is present. The LCL is the lower end of the confidence interval range, which is an estimated concentration range intended to contain the true mean or median of the population from which the sample is drawn. The confidence interval range is designed to locate the true population mean or median with a high degree of statistical confidence, or conversely, with a low probability of error.

The UTLs were calculated from the background well dataset using Chemstat software after testing for outlier sample results that would warrant removal from the dataset based on likely error in sampling or measurement. Both visual and statistical outlier tests for the background data were performed using Chemstat and U.S. Environmental Protection Agency's ProUCL 5.1 software, and a visual inspection of the data was performed using box plots and distribution plots for the downgradient sample data. No sample data were identified as outliers that warranted removal from the dataset.

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample location (IBA-4) were combined to calculate the UTL for each detected Appendix IV constituent. The variability and distribution of the pooled dataset was evaluated to determine the method for UTL calculation. Per the document, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance,*

March 2009, background concentrations were updated based on statistical evaluation of analytical results collected through **March 2019.**

RESULTS OF APPENDIX IV DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the detected Appendix IV constituents from the **March 2020** semi-annual assessment monitoring event were compared to their respective background UTLs and GWPSs (Table I). A sample concentration greater than the background UTL is considered to represent a SSI. A sample concentration greater than the GWPS is considered to represent a SSL. The results of the groundwater assessment monitoring statistical evaluation are provided in Table I. **Based on this statistical evaluation on groundwater sampling data collected in March 2020, no SSLs above GWPS occurred at the JEC BAP (inactive).**

Tables:
Table I – Summary of Semi-annual Assessment Groundwater Monitoring Statistical Evaluation

TABLE

TABLE I
SUMMARY OF SEMI-ANNUAL ASSESSMENT GROUNDWATER MONITORING STATISTICAL EVALUATION
MARCH 2020 SAMPLING EVENT
JEFFREY ENERGY CENTER BOTTOM ASH POND (INACTIVE)
ST. MARYS, KANSAS

										MCL Comparison							Interwell Analysis		Groundwater Protection Standard	
Location Id	**Frequency of Detection**	**Percent Non-Detects**	**Range of Non-Detect**	**Maximum Detect**	**Variance**	**Standard Deviation**	**Coefficient of Variance**	**CCR MCL or CFR § 257.95(h)(2)***	**Report Result Unit**	**Number of Detection Exceedances**	**Number of Non-Detection Exceedances**	**Outlier Presence**	**Outlier Removed**	**Trend**	**Distribution Well**	**March 2020 Concentration (mg/L)**	**Background Limits[1] (UTL) mg/L**	**SSI**	**GWPS (Higher of MCL/ 40 CFR § 257.95(h)(2) or UTL)**	**SSL**
	CCR Appendix-IV: Barium, Total (mg/L)																			
IBA-4 (upgradient)	10/10	0%	-	0.022	0.000003211	0.001792	0.09382	2	mg/L	0	0	No	No	Stable	Normal	0.017	0.0229		2	
IBA-1	10/10	0%	-	0.039	0.00001338	0.003658	0.1089	2	mg/L	0	0	No	No	Stable	Normal	0.028		Yes		No
IBA-2	10/10	0%	-	0.036	0.000006844	0.002616	0.08385	2	mg/L	0	0	No	No	Decreasing	Normal	0.027		Yes		No
IBA-3	10/10	0%	-	0.021	0.000001656	0.001287	0.06808	2	mg/L	0	0	No	No	Stable	Normal	0.017		No		No
	CCR Appendix-IV: Cobalt, Total (mg/L)																			
IBA-4 (upgradient)	0/10	100%	0.001-0.001		0	0	0	0.006	mg/L	0	0	NA	NA	NA	NA	< 0.0010	0.001		0.006	
IBA-1	10/10	0%	-	0.0027	4.933E-08	0.0002221	0.09492	0.006	mg/L	0	0	No	No	Stable	Normal	0.0021		Yes		No
IBA-2	10/10	0%	-	0.0013	6.778E-09	0.00008233	0.07286	0.006	mg/L	0	0	Yes	No	Stable	Normal	0.0011		Yes		No
IBA-3	10/10	0%	-	0.0021	9.067E-08	0.0003011	0.1602	0.006	mg/L	0	0	Yes	No	Stable	Non-parametric	0.0019		Yes		No
	CCR Appendix-IV: Fluoride (mg/L)																			
IBA-4 (upgradient)	11/11	0%	-	0.59	0.003085	0.05555	0.1061	4.0	mg/L	0	0	No	No	Stable	Normal	0.48	0.653		4.0	
IBA-1	8/11	27%	0.2-0.2	0.63	0.01657	0.1287	0.4214	4.0	mg/L	0	0	Yes	No	Stable	Normal	0.21		No		No
IBA-2	8/11	27%	0.2-0.2	0.4	0.005976	0.07731	0.2779	4.0	mg/L	0	0	No	No	Stable	Normal	0.24		No		No
IBA-3	8/11	27%	0.2-0.2	0.36	0.004085	0.06392	0.2424	4.0	mg/L	0	0	No	No	Stable	Normal	0.23		No		No
	CCR Appendix-IV: Lithium, Total (mg/L)																			
IBA-4 (upgradient)	10/10	0%	-	0.037	0.000004322	0.002079	0.06133	0.040	mg/L	0	0	No	No	Stable	Normal	0.031	0.0382		0.040	
IBA-1	10/10	0%	-	0.026	0.00001246	0.003529	0.2113	0.040	mg/L	0	0	Yes	No	Stable	Non-parametric	0.014		No		No
IBA-2	10/10	0%	-	0.028	0.00001023	0.003199	0.1576	0.040	mg/L	0	0	Yes	No	Stable	Normal	0.018		No		No
IBA-3	10/10	0%	-	0.028	0.00001072	0.003274	0.1597	0.040	mg/L	0	0	Yes	No	Stable	Normal	0.020		No		No
	CCR Appendix-IV: Molybdenum, Total (mg/L)																			
IBA-4 (upgradient)	10/10	0%	-	0.0024	3.289E-08	0.0001814	0.09445	0.100	mg/L	0	0	Yes	No	Stable	Non-parametric	0.0019	0.0024		0.100	
IBA-1	10/10	0%	-	0.0076	4.889E-08	0.0002211	0.03071	0.100	mg/L	0	0	No	No	Stable	Normal	0.0076		Yes		No
IBA-2	10/10	0%	-	0.0024	9.444E-09	0.00009718	0.04319	0.100	mg/L	0	0	No	No	Stable	Normal	0.0022		No		No
IBA-3	10/10	0%	-	0.0025	2.044E-08	0.000143	0.06681	0.100	mg/L	0	0	Yes	No	Stable	Non-parametric	0.0022		No		No

Notes and Abbreviations:

[1] Based on background data collected from 03/13/2018 through 03/28/2019.

** Values obtained from U.S. Environmental Protection Agency Federal CCR Rule Title 40 Code of Federal Regulations (CFR) § 257.95(h)(2)*

CCR = coal combustion residuals

GWPS = Groundwater Protection Standard

MCL = maximum contaminant level

mg/L = milligrams per Liter

NA = not analyzed

pCi/L = picoCuries per Liter

SSI = statistically significant increase

SSL = statistically significant level

UTL = upper tolerance limits

ATTACHMENT 2-2
September 2020 Statistical Analysis

HALEY & ALDRICH, INC.
6500 Rockside Road
Suite 200
Cleveland, OH 44131
216.739.0555

TECHNICAL MEMORANDUM

November 10, 2022
File No. 129778

TO: Evergy Kansas Central, Inc.
Jared Morrison – Director, Water and Waste Programs

FROM: Haley & Aldrich, Inc.
Steven F. Putrich, P.E., Principal Consultant – Engineering Principal
Mark Nicholls, P.G., Senior Associate – Senior Hydrogeologist

SUBJECT: September 2020 Semi-Annual Groundwater Assessment Monitoring Data Statistical Evaluation
Completed January 15, 2021
Jeffrey Energy Center
Bottom Ash Pond (inactive)

Pursuant to Title 40 Code of Federal Regulations (40 CFR) §§ 257.93 and 257.95 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the **September 2020** semi-annual assessment monitoring groundwater sampling event for the Jeffrey Energy Center (JEC) Bottom Ash Pond (BAP; inactive). This semi-annual assessment monitoring groundwater sampling event was completed on **September 14, 2020**, with laboratory results received and validated on **October 23, 2020**.

The statistical evaluation discussed in this memorandum was conducted to determine if Appendix IV groundwater monitoring constituents have been detected in downgradient wells at concentrations that represent a statistically significant increase (SSI) above background values and if one or more of the constituents have been detected at statistically significant levels (SSL) above the groundwater protection standard (GWPS) consistent with the requirements of the Rule. GWPSs for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level, levels provided in 40 CFR § 257.95(h)(2) (from regional screening levels), or background concentrations.

Statistical Evaluation of Appendix IV Constituents

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion residual (CCR) unit (40 CFR § 257.93(f) (1-4)). The statistical method used for these evaluations, tolerance limit (TL), was certified by Haley & Aldrich, Inc. on July 14, 2020. The TL method, as determined applicable for this sampling event, was used to evaluate potential SSLs above

background. Background levels for each constituent listed in Appendix IV were computed as upper tolerance limits (UTL), and a minimum 95 percent confidence coefficient and 95 percent coverage. The most recent groundwater sampling event from each compliance well was compared to the corresponding background UTL to determine if a SSL existed.

STATISTICAL EVALUATION

An interwell evaluation was used to determine the SSIs. Interwell evaluation compares the most recent values from downgradient compliance wells against a background dataset composed of upgradient well data. Because the CCR unit has transitioned into assessment monitoring, no statistical evaluations were conducted on Appendix III (detection monitoring) semi-annual assessment monitoring data.

The TL method was used to complete statistical evaluations of the referenced dataset. The TL procedure is one in which a concentration limit for each constituent is established from the distribution of the background data, with a minimum 95 percent confidence level. The upper endpoint of a tolerance interval is called the UTL. Depending on the data distribution, parametric or non-parametric TL procedures are used to evaluate groundwater monitoring data using this method. Parametric TLs utilize normally distributed data or normalized data via a transformation of the sample background data used to construct the limit. If the data are non-normal and a transformation is not indicated, non-parametric procedures (order statistics or bootstrap methods) are used to calculate the TL. If all the background data are non-detect, a maximum reporting limit may serve as an appropriate UTL.

These statistical evaluations were conducted using a background dataset for all Appendix IV constituents that were detected in the annual assessment monitoring sample event. If an Appendix IV constituent concentration from the **September 2020** sampling event was above the GWPS, the lower confidence limit (LCL) for the downgradient well constituent will be used to evaluate if a SSI is present. The LCL is the lower end of the confidence interval range, which is an estimated concentration range intended to contain the true mean or median of the population from which the sample is drawn. The confidence interval range is designed to locate the true population mean or median with a high degree of statistical confidence, or conversely, with a low probability of error.

The UTLs were calculated from the background well dataset using Chemstat software after testing for outlier sample results that would warrant removal from the dataset based on likely error in sampling or measurement. Both visual and statistical outlier tests for the background data were performed using Chemstat and U.S. Environmental Protection Agency's ProUCL 5.1 software, and a visual inspection of the data was performed using box plots and distribution plots for the downgradient sample data. No sample data were identified as outliers that warranted removal from the dataset.

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample location (IBA-4) were combined to calculate the UTL for each detected Appendix IV constituent. The variability and distribution of the pooled dataset were evaluated to determine the method for UTL calculation. Per the document, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance,*

March 2009, background concentrations were updated based on statistical evaluation of analytical results collected through **March 2019** for all constituents except fluoride, which was updated through **September 2020.**

RESULTS OF APPENDIX IV DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the detected Appendix IV constituents from the **September 2020** semi-annual assessment monitoring event were compared to their respective background UTLs and GWPSs (Table I). A sample concentration greater than the background UTL is considered to represent a SSI. A sample concentration greater than the GWPS is considered to represent a SSL. The results of the groundwater assessment monitoring statistical evaluation are provided in Table I. **Based on this statistical evaluation on groundwater sampling data collected in September 2020, no SSLs above GWPS occurred at the JEC BAP (inactive).**

Tables:
Table I – Summary of Semi-Annual Assessment Groundwater Monitoring Statistical Evaluation

TABLE

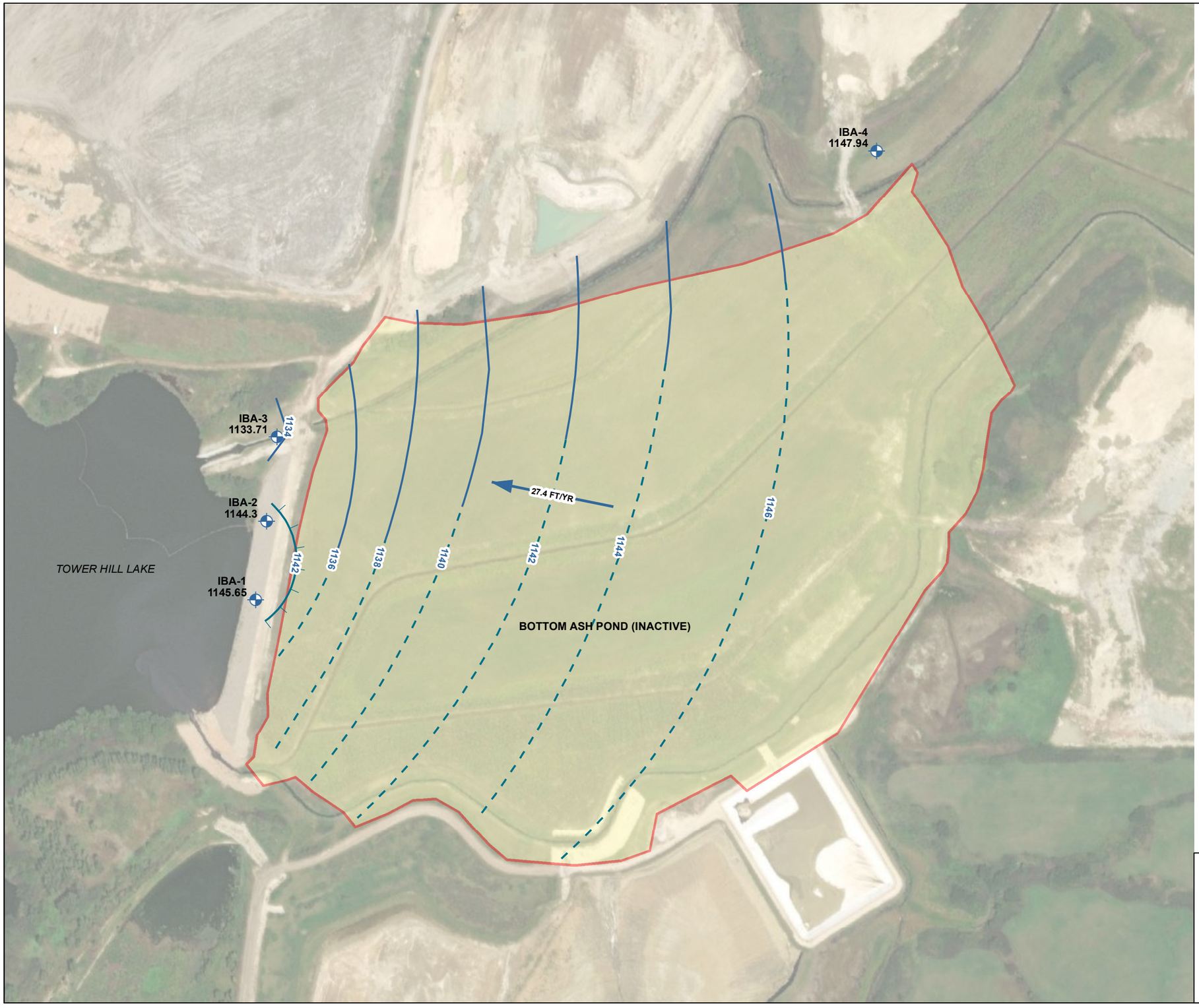
TABLE I
SUMMARY OF SEMI-ANNUAL ASSESSMENT GROUNDWATER MONITORING STATISTICAL EVALUATION
SEPTEMBER 2020 SAMPLING EVENT
JEFFREY ENERGY CENTER BOTTOM ASH POND (INACTIVE)
ST. MARYS, KANSAS

										MCL Comparison							Interwell Analysis		Groundwater Protection Standard	
Location Id	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL or CFR § 257.95(h)(2)*	Report Result Unit	Number of Detection Exceedances	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Well	September 2020 Concentration (mg/L)	Background Limits[1] (UTL) mg/L	SSI	GWPS (Higher of MCL/ 40 CFR § 257.95(h)(2) or UTL)	SSL
CCR Appendix-IV: Barium, Total (mg/L)																				
IBA-4 (upgradient)	11/11	0%	-	0.022	2.891E-06	0.0017	0.08906	2	mg/L	0	0	No	No	Stable	Normal	0.019	0.0229		2	
IBA-1	11/11	0%	-	0.039	0.00001396	0.003737	0.1126	2	mg/L	0	0	No	No	Decreasing	Normal	0.029		Yes		No
IBA-2	11/11	0%	-	0.036	7.091E-06	0.002663	0.08615	2	mg/L	0	0	No	No	Decreasing	Normal	0.028		Yes		No
IBA-3	11/11	0%	-	0.021	1.818E-06	0.001348	0.072	2	mg/L	0	0	No	No	Decreasing	Normal	0.017		No		No
CCR Appendix-IV: Cobalt, Total (mg/L)																				
IBA-4 (upgradient)	0/11	100%	0.001-0.001		0	0	0	0.006	mg/L	0	0	NA	NA	NA	NA	< 0.0010	0.001		0.006	
IBA-1	11/11	0%	-	0.0027	9.418E-08	0.0003069	0.135	0.006	mg/L	0	0	No	No	Stable	Normal	0.0016		Yes		No
IBA-2	10/11	9%	0.001-0.001	0.0013	7.636E-09	0.00008739	0.07815	0.006	mg/L	0	0	Yes	No	Stable	Normal	< 0.0010		Yes		No
IBA-3	11/11	0%	-	0.0021	1.025E-07	0.0003202	0.1744	0.006	mg/L	0	0	Yes	No	Stable	Non-parametric	0.0014		Yes		No
CCR Appendix-IV: Fluoride (mg/L)																				
IBA-4 (upgradient)	12/12	0%	-	0.59	0.00307	0.0554	0.1049	4.0	mg/L	0	0	No	No	Stable	Normal	0.58	0.632[2]		4.0	
IBA-1	9/12	25%	0.2-0.2	0.63	0.01506	0.1227	0.4013	4.0	mg/L	0	0	Yes	No	Stable	Normal	0.31		No		No
IBA-2	9/12	25%	0.2-0.2	0.4	0.005991	0.0774	0.2716	4.0	mg/L	0	0	No	No	Stable	Normal	0.36		No		No
IBA-3	9/12	25%	0.2-0.2	0.36	0.003824	0.06184	0.2319	4.0	mg/L	0	0	No	No	Stable	Normal	0.30		No		No
CCR Appendix-IV: Lithium, Total (mg/L)																				
IBA-4 (upgradient)	11/11	0%	-	0.04	7.273E-06	0.002697	0.07827	0.040	mg/L	0	0	No	No	Stable	Normal	0.040	0.0382		0.040	
IBA-1	11/11	0%	-	0.026	0.00001376	0.00371	0.2159	0.040	mg/L	0	0	Yes	No	Stable	Non-parametric	0.022		No		No
IBA-2	11/11	0%	-	0.028	9.873E-06	0.003142	0.1529	0.040	mg/L	0	0	Yes	No	Stable	Normal	0.023		No		No
IBA-3	11/11	0%	-	0.028	0.00001076	0.003281	0.1576	0.040	mg/L	0	0	Yes	No	Stable	Normal	0.024		No		No
CCR Appendix-IV: Molybdenum, Total (mg/L)																				
IBA-4 (upgradient)	11/11	0%	-	0.0024	2.964E-08	0.0001722	0.08975	0.100	mg/L	0	0	Yes	No	Stable	Non-parametric	0.0019	0.0024		0.100	
IBA-1	11/11	0%	-	0.0076	5.855E-08	0.000242	0.03344	0.100	mg/L	0	0	No	No	Stable	Normal	0.0076		Yes		No
IBA-2	11/11	0%	-	0.0024	8.727E-09	0.00009342	0.0416	0.100	mg/L	0	0	No	No	Stable	Normal	0.0022		No		No
IBA-3	11/11	0%	-	0.0025	1.873E-08	0.0001368	0.06378	0.100	mg/L	0	0	Yes	No	Stable	Non-parametric	0.0022		No		No

Notes and Abbreviations:

[1] Based on background data collected from 03/13/2018 through 03/28/2019, unless otherwise noted.
[2] Based on background data collected from 03/13/2018 through 09/14/2020.
** Values obtained from U.S. Environmental Protection Agency Federal CCR Rule Title 40 Code of Federal Regulations (CFR) § 257.95(h)(2)*
CCR = coal combustion residuals
GWPS = Groundwater Protection Standard
MCL = maximum contaminant level
mg/L = milligrams per Liter
NA = not analyzed
pCi/L = picoCuries per Liter
SSI = statistically significant increase
SSL = statistically significant level
UTL = upper tolerance limits

ATTACHMENT 3
Groundwater Potentiometric Maps



LEGEND

IBA-3 1133.71 — WELL NAME AND GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (AMSL), SEPTEMBER 2020

MONITORING WELL

PIEZOMETER OBSERVATION ONLY

ESTIMATED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION CONTOUR, 2-FT INTERVAL (AMSL), DASHED WHERE INFERRED

GROUNDWATER FLOW DIRECTION AND APPROXIMATE GROUNDWATER FLOW RATE (FEET/YEAR)

BOTTOM ASH POND (INACTIVE)

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 14 SEPTEMBER 2020.

3. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETIRIC ELEVATIONS MEASURED 14 SEPTEMBER 2020 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.

4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019

N

0 300 600

SCALE IN FEET

HALEY ALDRICH

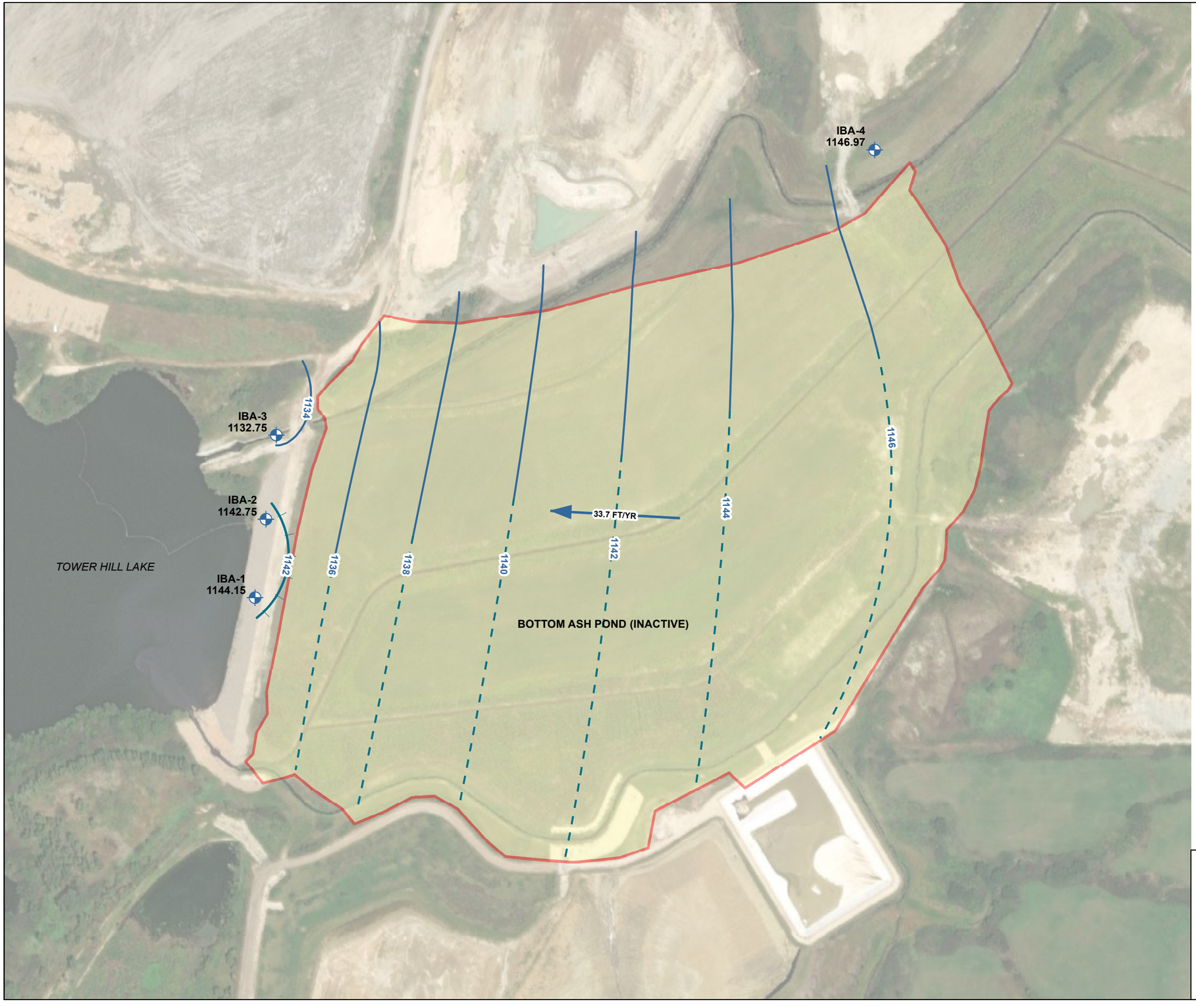
EVERGY KANSAS CENTRAL, INC.
JEFFREY ENERGY CENTER
ST. MARY'S, KANSAS

BOTTOM ASH POND (INACTIVE) GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP SEPTEMBER 14, 2020

evergy

NOVEMBER 2022

FIGURE 2



LEGEND

- **IBA-3 1132.75** — WELL NAME AND GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (AMSL), NOVEMBER 2020
- MONITORING WELL
- PIEZOMETER OBSERVATION ONLY
- ESTIMATED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION CONTOUR, 2-FT INTERVAL (AMSL), DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION AND APPROXIMATE GROUNDWATER FLOW RATE (FEET/YEAR)
- BOTTOM ASH POND (INACTIVE)

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 30 NOVEMBER 2020.
3. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETIRIC ELEVATIONS MEASURED 30 NOVEMBER 2020 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.
4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019

N

0 300 600
SCALE IN FEET

HALEY ALDRICH

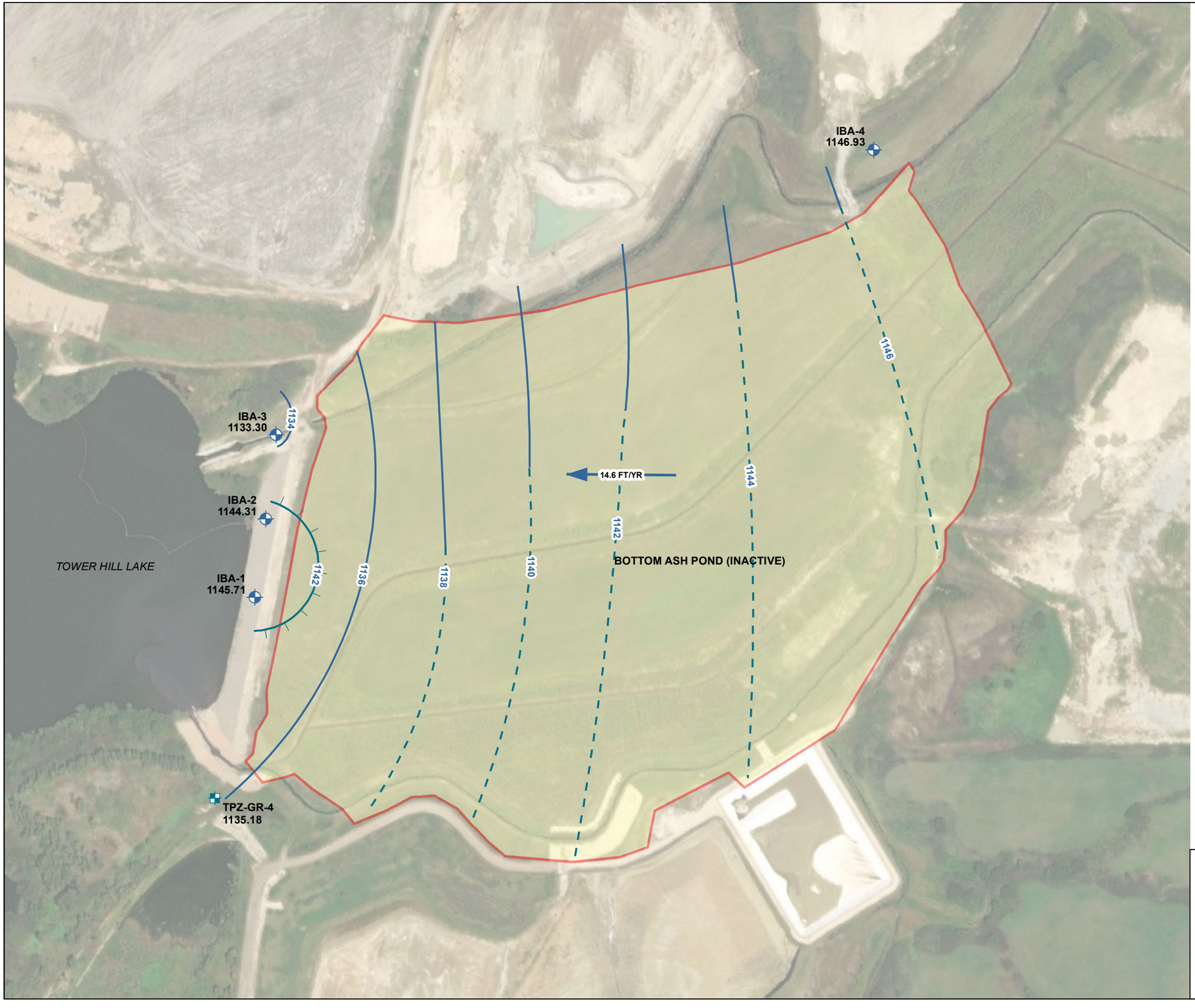
EVERGY KANSAS CENTRAL, INC.
JEFFREY ENERGY CENTER
ST. MARY'S, KANSAS

BOTTOM ASH POND (INACTIVE) GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP NOVEMBER 30, 2020

evergy

NOVEMBER 2022

FIGURE 3



LEGEND

IBA-3 1133.30 WELL NAME AND GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (AMSL), MARCH 2021

MONITORING WELL

PIEZOMETER OBSERVATION ONLY

ESTIMATED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION CONTOUR, 2-FT INTERVAL (AMSL), DASHED WHERE INFERRED

GROUNDWATER FLOW DIRECTION AND APPROXIMATE GROUNDWATER FLOW RATE (FEET/YEAR)

BOTTOM ASH POND (INACTIVE)

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 04 MARCH 2021.

3. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETIRIC ELEVATIONS MEASURED 04 MARCH 2021 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.

4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019

N

0 300 600

SCALE IN FEET

HALEY ALDRICH

EVERGY KANSAS CENTRAL, INC.
JEFFREY ENERGY CENTER
ST. MARY'S, KANSAS

BOTTOM ASH POND (INACTIVE) GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP MARCH 4, 2021

evergy

NOVEMBER 2022

FIGURE 4