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2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT FLY ASH LANDFILL JEFFREY ENERGY CENTER ST. MARYS, KANSAS

by Haley & Aldrich, Inc. Cleveland, Ohio

for Evergy Kansas Central, Inc. Topeka, Kansas



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Revision No.	Date	Notes
0	2/1/2021	Original
1	4/16/2021	Revised to include groundwater potentiometric elevation contour maps for 2020



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This Annual Groundwater Monitoring and Corrective Action Report documents the groundwater monitoring program for the Jeffrey Energy Center Fly Ash Landfill (FAL) consistent with applicable sections of 257.90 through 257.98, and describes activities conducted in the prior calendar year (2020) and documents compliance with the U.S. Environmental Protection Agency Coal Combustion Residual Rule. I certify that the 2020 Annual Groundwater Monitoring and Corrective Action Report for the JEC FAL is, to the best of my knowledge, accurate and complete.

Signed:

Professional Geologist

Print Name: Kansas License No.: Title: Company: Mark Nicholls Professional Geologist No. 881 Technical Expert 2 Haley & Aldrich, Inc.





1. Introduction

This 2020 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) addresses the Fly Ash Landfill (FAL) 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 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 FAL consistent with applicable sections of 257.90 through 257.98, and describes activities conducted in the prior calendar year (2020) and document compliance with the Rule. The specific requirements for the Annual Report listed in § 257.90(e)(1)-(5) of the Rule are provided in Sections 1 and 2 of this Annual Report and are in bold italic font, followed by a short narrative describing how each Rule requirement has been met.

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 (January 1, 2020), the FAL 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 (December 31, 2020), the FAL 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 FAL is operating under an assessment monitoring program; therefore, no statistical evaluations were completed on appendix III constituents in 2020.



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 July 17, 2018 for the FAL with a notification establishing assessment monitoring provided on August 15, 2018 to meet the requirements of 40 CFR § 257.95. The FAL remained in assessment monitoring in 2020.

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 in 2020 for the FAL.

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 in 2020 for this unit. The FAL remained in assessment monitoring during 2020.

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 FAL in 2020; 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 in 2020 for this unit. The FAL remained in assessment monitoring during 2020.

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 FAL 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 in 2020.



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) [Suspension of groundwater monitoring requirements] of this section.

Evergy has installed and certified a groundwater monitoring system at the JEC FAL. The FAL 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 FAL 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 2020.

2.2.1 Status of the Groundwater Monitoring Program

The FAL remained in the assessment monitoring program during 2020.

2.2.2 Key Actions Completed

The 2019 Annual Groundwater Monitoring and Corrective Action Report was completed in January 2020. Statistical evaluation was completed in January 2020 on analytical data from the September 2019 semi-annual assessment monitoring sampling event.



A semi-annual assessment monitoring sampling event was completed in March 2020 for detected appendix IV constituents identified from the June 2019 annual assessment monitoring sampling event. Statistical evaluation was completed in July 2020 on analytical data from the March 2020 semi-annual assessment monitoring sampling event.

An annual assessment monitoring sampling event was completed in June 2020 to identify detected appendix IV constituents for subsequent semi-annual sampling events in September 2020 and planned for March 2021. Semi-annual assessment monitoring sampling was completed in September 2020 for detected appendix IV constituents identified during the June 2020 annual monitoring event. Statistical evaluation of the results from the September 2020 semi-annual assessment monitoring sampling event are due to be completed in January 2021 and will be reported in the next annual report.

2.2.3 Problems Encountered

No noteworthy problems (i.e., problems could include damaged wells, issues with sample collection or lack of sampling, and problems with analytical analysis) were encountered at the FAL in 2020.

2.2.4 Actions to Resolve Problems

No problems were encountered at the FAL in 2020, therefore, no actions to resolve problems were required.

2.2.5 Project Key Activities for Upcoming Year

Key activities planned for 2021 include the completion of the 2020 Annual Groundwater Monitoring and Corrective Action Report, statistical evaluation of semi-annual assessment monitoring analytical data collected in September 2020, 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)

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 FAL 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 during 2020.

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) and § 257.95(d)(1), three independent assessment monitoring samples from each background and downgradient monitoring well were collected in 2020. A summary including sample names, dates of sample collection, field parameters, and monitoring data obtained for the groundwater monitoring program for the FAL is presented in Table I of this report. Groundwater potentiometric elevation contour maps associated with each groundwater monitoring sampling event in 2020 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 July 17, 2018 with a notification establishing assessment monitoring provided on August 15, 2018 to meet the requirements of 40 CFR § 257.95. The FAL remained in assessment monitoring during 2020.

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 in calendar year 2020.

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 July 17, 2018. Three rounds of assessment monitoring sampling were completed in 2020. 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 FAL 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 in 2020 for September 2019 and March 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 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 in 2020. The FAL remained in assessment monitoring during 2020.

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 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 in 2020; therefore, no demonstration or certification is applicable for this unit.



TABLES

TABLE ISUMMARY OF ANALYTICAL RESULTS - 2020 ASSESSMENT MONITORINGEVERGY KANSAS CENTRAL, INC.JEFFREY ENERGY CENTERFLY ASH LANDFILLST. MARYS, KANSAS

Location	Upgradient			Downgradient						
Location	MW-FAA-5		MW-FAA-3		MW-FAA-4					
Measure Point (TOC)		1250.80			1165.66			1213	3.81	
Sample Name	FAA-05-030420	FAA-05-061120	FAA-05-091420	FAA-03-030420	FAA-03-061120	FAA-03-091420	FAA-04-030420	FAA-04-061120	DUP-FAL-061120	FAA-04-091420
Sample Date	03/04/2020	06/11/2020	9/14/2020	03/04/2020	06/11/2020	9/14/2020	03/05/2020	06/11/2020	06/11/2020	9/14/2020
Final Lab Report Date	3/16/2020	6/23/2020	9/28/2020	3/16/2020	6/23/2020	9/28/2020	3/16/2020	6/23/2020	6/23/2020	9/28/2020
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
Final Radiation Lab Report Date	3/30/2020	7/8/2020	10/7/2020	3/30/2020	7/8/2020	10/7/2020	3/30/2020	7/8/2020	7/8/2020	10/7/2020
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
Lab Data Reviewed and Accepted	4/20/2020	7/16/2020	10/21/2020	4/20/2020	7/16/2020	10/21/2020	4/20/2020	7/16/2020	7/16/2020	10/21/2020
Depth to Water (ft btoc)	86.95	87.13	87.03	13.19	13.50	13.14	56.52	56.24	-	56.34
Temperature (Deg C)	10.8	20.08	17.56	10.9	18.02	22.96	8.51	17.21	-	22.96
Conductivity, Field (µS/cm)	3435	3450	3190	1564	1480	1300	1539	1590	-	1350
Turbidity, Field (NTU)	0.93	0.00	0.0	1.53	0.00	9.2	1.32	0.00	-	0.0
Boron, Total (mg/L)	1.6	-	1.6	0.51	-	0.59	0.63	-	-	0.72
Calcium, Total (mg/L)	519	-	467	184	-	169	182	-	-	163
Chloride (mg/L)	86.6	-	106	64.6	-	65.4	65.9	-	-	68.4
Fluoride (mg/L)	0.77	0.59	0.73	0.30	0.39	0.44	< 0.20	0.44	0.43	0.45
Sulfate, Total (mg/L)	1640	-	1390	428	-	487	469	-	-	494
pH (su)	7.0	-	6.9	7.1	-	7.1	7.3	-	-	7.2
TDS (mg/L)	3000	-	2630	1090	-	1120	1170	-	-	1140
Antimony, Total (mg/L)	-	< 0.0010	-	-	< 0.0010	-	-	< 0.0010	< 0.0010	-
Arsenic, Total (mg/L)	< 0.0010	0.0011	<0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010
Barium, Total (mg/L)	< 0.0050	< 0.0050	<0.0050	0.025	0.027	0.026	0.049	0.047	0.049	0.045
Beryllium, Total (mg/L)	-	0.0011	0.0016	-	< 0.0010	<0.0010	-	< 0.0010	< 0.0010	<0.0010
Cadmium, Total (mg/L)	-	< 0.00050	-	-	< 0.00050	-	-	< 0.00050	< 0.00050	-
Chromium, Total (mg/L)	-	< 0.0050	-	-	< 0.0050	-	-	< 0.0050	< 0.0050	-
Cobalt, Total (mg/L)	0.0045	0.0033	0.0023	< 0.0010	< 0.0010	<0.0010	0.0013	0.0015	0.0015	0.0016
Lead, Total (mg/L)	-	< 0.010	-	-	< 0.010	-	-	< 0.010	< 0.010	-
Lithium, Total (mg/L)	0.14	0.14	0.13	0.017	0.011	0.018	0.019	0.016	0.014	0.020
Mercury, Total (mg/L)	-	< 0.20	-	-	< 0.20	-	-	< 0.20	< 0.20	-
Molybdenum, Total (mg/L)	0.034	0.030	0.027	0.0082	0.0084	0.0089	0.0056	0.0060	0.0060	0.0064
Selenium, Total (mg/L)	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	0.0010	< 0.0010	0.0010
Thallium, Total (mg/L)	-	< 0.0010	-	-	< 0.0010	-	-	< 0.0010	< 0.0010	-
Radium-226 & 228 (pCi/L)	0.587 ± 0.632 (0.824)	1.11 ± 0.802 (1.09)	1.26 +/- 0.621 (0.801)	0.928 ± 0.641 (0.874)	0.344 ± 0.670 (1.14)	0.578 +/- 0.778 (1.29)	0.744 ± 0.601 (0.863)	0.529 ± 0.732 (1.07)	0.534 ± 0.617 (0.958)	0.929 +/- 0.781 (1.13)

TABLE ISUMMARY OF ANALYTICAL RESULTS - 2020 ASSESSMENT MONITORINGEVERGY KANSAS CENTRAL, INC.JEFFREY ENERGY CENTERFLY ASH LANDFILLST. MARYS, KANSAS

Location	Downgradient						
Location	MW-FAA-6						
Measure Point (TOC)	1162.76						
Sample Name	FAA-06-030420	DUP-FAL-030420	FAA-06-061120	FAA-06-091420	DUP-FAL-091420		
Sample Date	03/04/2020	03/04/2020	06/11/2020	9/14/2020	9/14/2020		
Final Lab Report Date	3/16/2020	3/16/2020	6/23/2020	9/28/2020	9/28/2020		
Final Lab Report Revision Date	N/A	N/A	N/A	N/A	N/A		
Final Radiation Lab Report Date	3/30/2020	3/30/2020	7/8/2020	10/7/2020	10/7/2020		
Final Radiation Lab Report Revision Date	N/A	N/A	N/A	N/A	N/A		
Lab Data Reviewed and Accepted	4/20/2020	4/20/2020	7/16/2020	10/21/2020	10/21/2020		
Depth to Water (ft btoc)	13.55	-	15.87	14.98	-		
Temperature (Deg C)	10.76	-	19.48	18.01	-		
Conductivity, Field (μS/cm)	1833	-	1540	1480	-		
Turbidity, Field (NTU)	0.95	-	0.00	0.0	-		
Boron, Total (mg/L)	2.8	3.3	-	2.9	3.0		
Calcium, Total (mg/L)	134	127	-	134	136		
Chloride (mg/L)	66.2	65.2	-	66.0	84.5		
Fluoride (mg/L)	0.67	0.75	0.63	0.99	0.98		
Sulfate, Total (mg/L)	978	1110	-	1230	1250		
pH (su)	7.2	7.3	-	7.4	7.3		
TDS (mg/L)	1890	2240	-	2160	2140		
Antimony, Total (mg/L)	-	-	< 0.0010	-	-		
Arsenic, Total (mg/L)	0.0063	0.0075	0.0034	0.0064	0.0066		
Barium, Total (mg/L)	0.028	0.026	0.037	0.033	0.034		
Beryllium, Total (mg/L)	-	-	< 0.0010	<0.0010	<0.0010		
Cadmium, Total (mg/L)	-	-	< 0.00050	-	-		
Chromium, Total (mg/L)	-	-	< 0.0050	-	-		
Cobalt, Total (mg/L)	0.0018	0.0018	0.0021	0.0015	0.0015		
Lead, Total (mg/L)	-	-	< 0.010				
Lithium, Total (mg/L)	0.011	0.011	0.013	0.014	0.016		
Mercury, Total (mg/L)	-	-	< 0.20	-	-		
Molybdenum, Total (mg/L)	0.38	0.44	0.19	0.40	0.41		
Selenium, Total (mg/L)	0.0011	0.0012	0.0010	0.0033	0.0033		
Thallium, Total (mg/L)	-	-	< 0.0010	-	-		
Radium-226 & 228 (pCi/L)	0.0926 ± 0.475 (0.813)	0.179 ± 0.573 (0.947)	0.580 ± 0.746 (1.46)	0.286 +/- 0.606 (1.05)	0.880 +/- 0.628 (1.04)		

Notes and Abbreviations:

Bold value: Detection above laboratory reporting limit or minimum detectable concentration (MDC).

Radiological results are presented as activity plus or minus uncertainty with MDC.

Data presented in this table were verified against the laboratory and validation reports.

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

Page 2 of 2

TABLE IIASSESSMENT GROUNDWATER MONITORING - DETECTED APPENDIX IV GWPSSEPTEMBER 2019 SAMPLING EVENTJEFFREY ENERGY CENTERFLY ASH LANDFILL

Well Number	Background Value ¹	GWPS					
	CCR Appendix-IV Arsenic, Total (mg/L)						
MW-FAA-5 (upgradient)	0.00372	NA					
MW-FAA-3		0.010					
MW-FAA-4		0.010					
MW-FAA-6		0.010					
	CCR Appendix-IV Barium, Total (mg	;/L)					
MW-FAA-5 (upgradient)	0.0136	NA					
MW-FAA-3		2					
MW-FAA-4		2					
MW-FAA-6		2					
	CCR Appendix-IV Cobalt, Total (mg	/L)					
MW-FAA-5 (upgradient)	0.0036	NA					
MW-FAA-3		0.006					
MW-FAA-4		0.006					
MW-FAA-6		0.006					
	CCR Appendix-IV Fluoride, Total (m	g/L)					
MW-FAA-5 (upgradient)	1.261	NA					
MW-FAA-3		4.0					
MW-FAA-4		4.0					
MW-FAA-6		4.0					
	CCR Appendix-IV Lithium, Total (mg	g/L)					
MW-FAA-5 (upgradient)	0.183	NA					
MW-FAA-3		0.183					
MW-FAA-4		0.183					
MW-FAA-6		0.183					
	CCR Appendix-IV Molybdenum, Total	(mg/L)					
MW-FAA-5 (upgradient)	0.0699	NA					
MW-FAA-3		0.100					
MW-FAA-4		0.100					
MW-FAA-6 ^{2,3}	0.929	0.929					
CCI	Appendix-IV Radium-226 & 228 Combi	ned (pCi/L)					
MW-FAA-5 (upgradient)	1.3	NA					
MW-FAA-3		5					
MW-FAA-4		5					
MW-FAA-6		5					
	CCR Appendix-IV Selenium, Total (m						
MW-FAA-5 (upgradient)	0.00369	NA					
MW-FAA-3		0.05					
MW-FAA-4		0.05					
MW-FAA-6		0.05					

Notes and Abbreviations:

¹ Interwell background value based on background data collected through September 2018.

² Denotes intrawell evaluation for the listed constituent. All other constituents are interwell evaluation.

³ Intrawell background value based on background data collected through June 2019.

CCR = Coal Combustion Residuals

GWPS = Groundwater Protection Standard

mg/L = milligrams per Liter

NA = Not Applicable

pCi/L = picoCuries per Liter



TABLE IIIASSESSMENT GROUNDWATER MONITORING - DETECTED APPENDIX IV GWPSMARCH 2020 SAMPLING EVENTJEFFREY ENERGY CENTERFLY ASH LANDFILL

Well Number	Background Value ¹	GWPS					
	CCR Appendix-IV Arsenic, Total (mg/L)						
MW-FAA-5 (upgradient)	0.0035	NA					
MW-FAA-3		0.010					
MW-FAA-4		0.010					
MW-FAA-6		0.010					
	CCR Appendix-IV Barium, Total (mg	g/L)					
MW-FAA-5 (upgradient)	0.013	NA					
MW-FAA-3		2					
MW-FAA-4		2					
MW-FAA-6		2					
	CCR Appendix-IV Cobalt, Total (mg	;/L)					
MW-FAA-5 (upgradient)	0.00521	NA					
MW-FAA-3		0.006					
MW-FAA-4		0.006					
MW-FAA-6		0.006					
	CCR Appendix-IV Fluoride, Total (m	g/L)					
MW-FAA-5 (upgradient)	1.430	NA					
MW-FAA-3		4.0					
MW-FAA-4		4.0					
MW-FAA-6		4.0					
	CCR Appendix-IV Lithium, Total (mg	g/L)					
MW-FAA-5 (upgradient)	0.171	NA					
MW-FAA-3		0.171					
MW-FAA-4		0.171					
MW-FAA-6		0.171					
	CCR Appendix-IV Molybdenum, Total	(mg/L)					
MW-FAA-5 (upgradient)	0.0652	NA					
MW-FAA-3		0.100					
MW-FAA-4		0.100					
MW-FAA-6 ^{2,3}	0.929	0.929					
	R Appendix-IV Radium-226 & 228 Combi	ined (pCi/L)					
MW-FAA-5 (upgradient)	2.342	NA					
MW-FAA-3		5					
MW-FAA-4		5					
MW-FAA-6		5					
	CCR Appendix-IV Selenium, Total (m	ng/L)					
MW-FAA-5 (upgradient)	0.00370	NA					
MW-FAA-3		0.05					
MW-FAA-4		0.05					
MW-FAA-6		0.05					

Notes and Abbreviations:

¹ Interwell background value based on background data collected through March 2020.

² Denotes intrawell evaluation for the listed constituent. All other constituents are interwell evaluation.

³ Interwell background value based on background data collected through June 2019.

CCR = Coal Combustion Residuals

GWPS = Groundwater Protection Standard

MCL = Maximum Contaminant Level

mg/L = milligrams per Liter

NA = Not Applicable

pCi/L = picoCuries per Liter









MONITORING WELL

PIEZOMETER OBSERVATION ONLY

FLY ASH LANDFILL

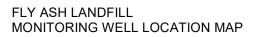
NOTES

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



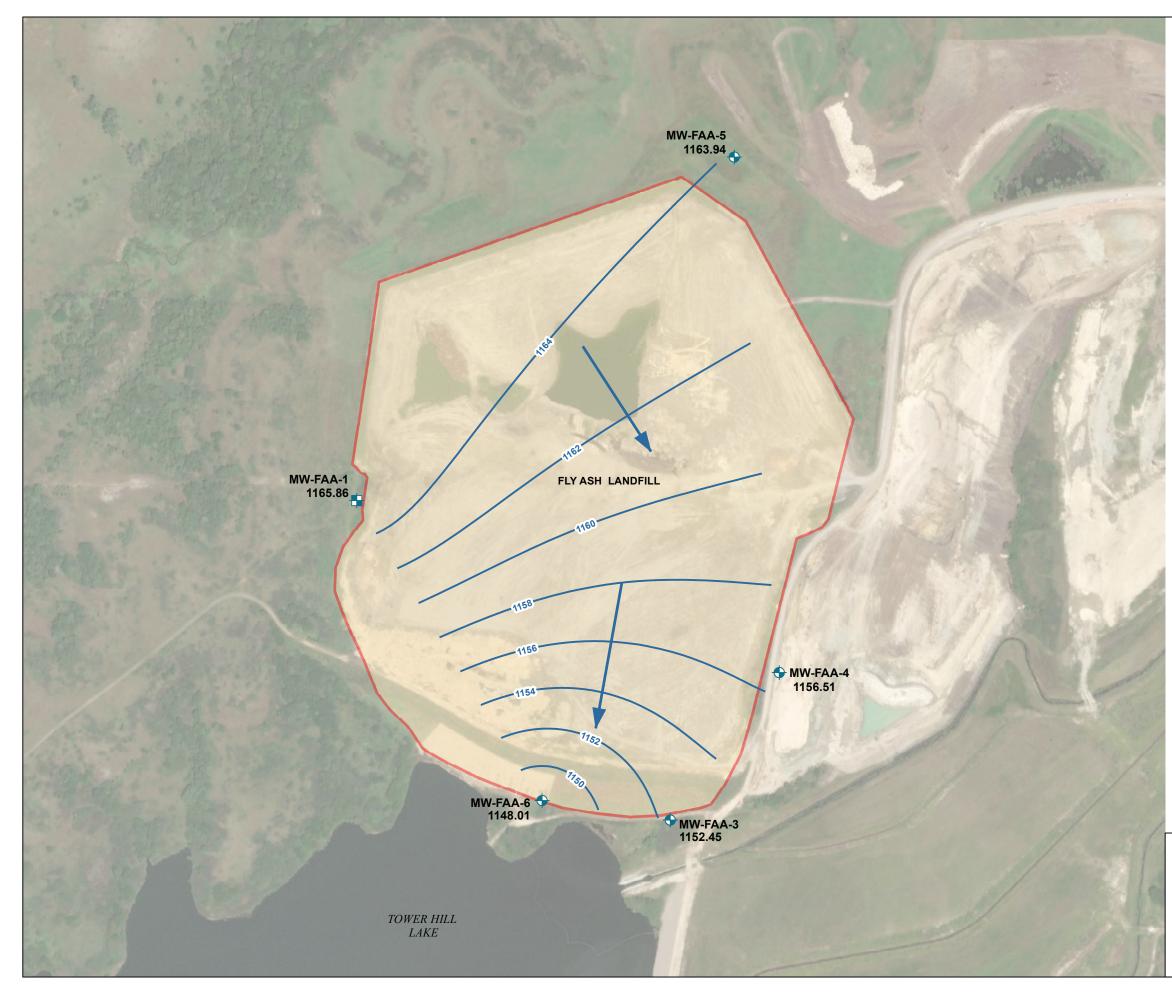
400 SCALE IN FEET

HALEY ALDRICH EVERGY KANSAS CENTRAL, INC. JEFFREY ENERGY CENTER ST. MARYS, KANSAS



800

>> evergy APRIL 2021



LEGEND	
MW_FAA-4 1167.47	WELL NAME WITH GROUNDWATER ELEVATION, (FT AMSL) MARCH 2020
+	PIEZOMETER OBSERVATION ONLY
•	MONITORING WELL
	GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION CONTOUR, 2-FT INTERVAL (AMSL)
-	APPROXIMATE GROUNDWATER FLOW DIRECTION
	FLY ASH LANDFILL

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 03 MARCH 2020.

3. AMSL = ABOVE MEAN SEA LEVEL

4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019

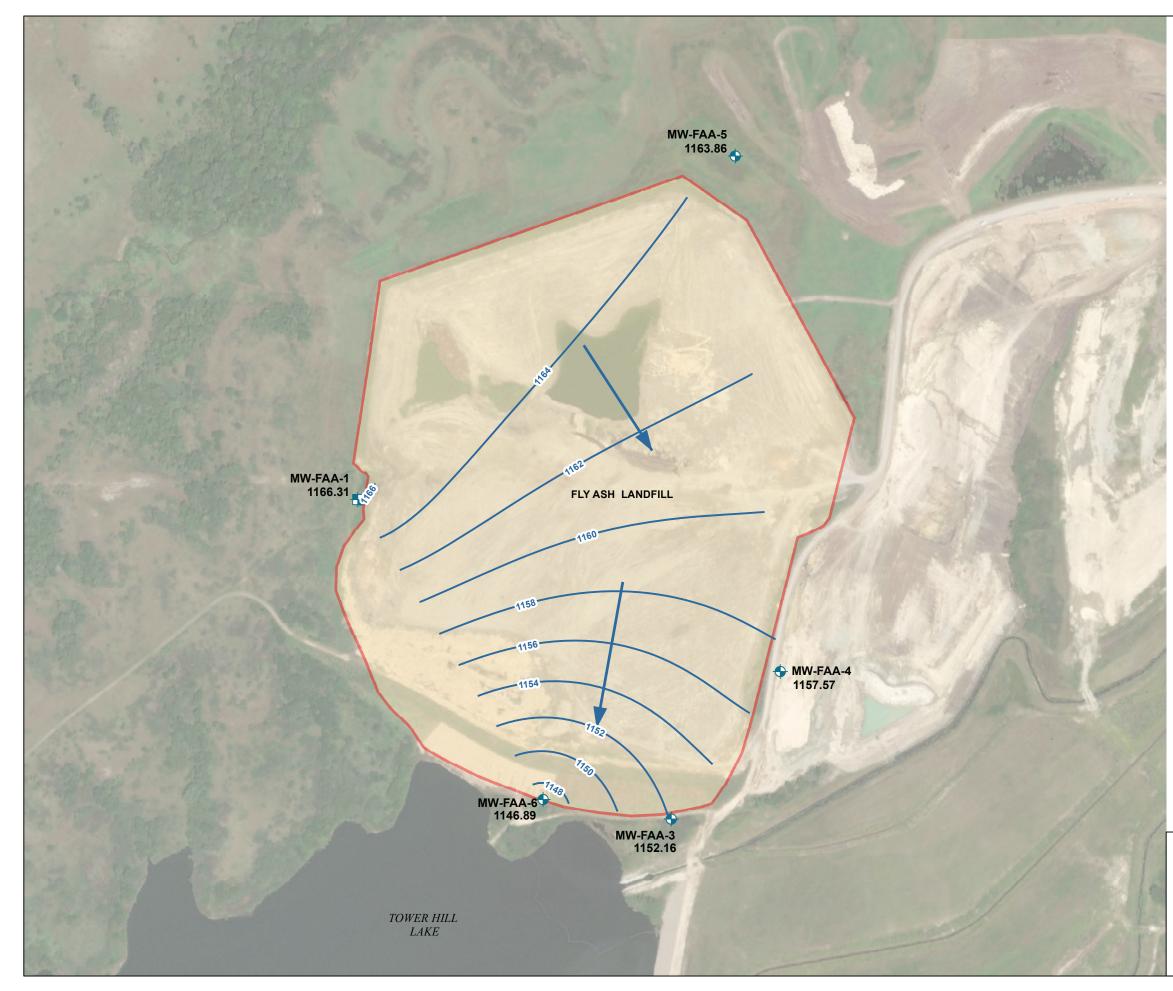


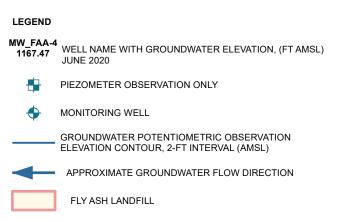
400 SCALE IN FEET

HALEY ALDRICH EVERGY KANSAS CENTRAL, INC. JEFFREY ENERGY CENTER ST. MARYS, KANSAS

FLY ASH LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP MARCH 3, 2020

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NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 11 JUNE 2020.

3. AMSL = ABOVE MEAN SEA LEVEL

4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019



400

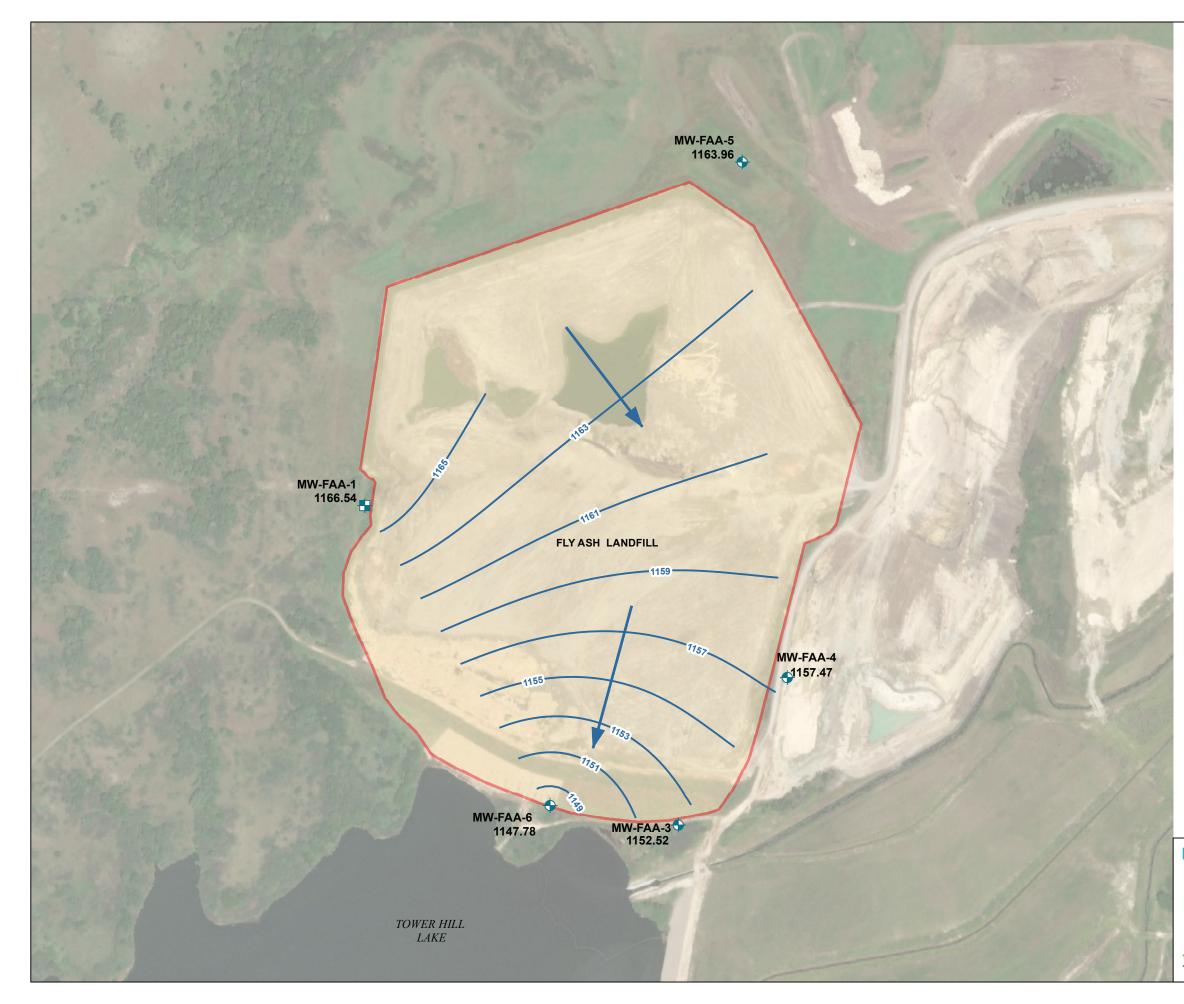
SCALE IN FEET

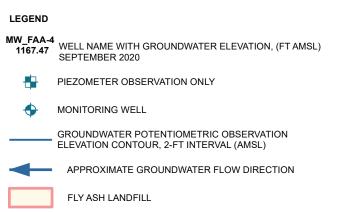
HALEY EVERGY KANSAS CENTRAL, INC. JEFFREY ENERGY CENTER ST. MARYS, KANSAS

> FLY ASH LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP JUNE 11, 2020

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>>evergy





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



400 SCALE IN FEET

HALEY EVERGY KANSAS CENTRAL, INC. JEFFREY ENERGY CENTER ST. MARYS, KANSAS

FLY ASH LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP SEPTEMBER 14, 2020

800



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



November 4, 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., Senior Associate – Engineering Principal	
	Mark Nicholls, P.G., Senior Associate – Senior Hydrogeologist	
SUBJECT:	2020 Annual Groundwater Monitoring and Corrective Action Report Ad	dendum
	Evergy Kansas Central, Inc.	
	Jeffrey Energy Center	
	Fly Ash Landfill	

The Evergy Kansas Central, Inc. (Evergy) Fly Ash Landfill (FAL) 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 in 2020 for the FAL was completed and placed in the facility's operating record on February 1, 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 2020 sampling events are included in Attachment 1, and a discussion of the applicable statistical analyses completed in 2020 are included in Attachment 2 of this addendum. Revision 1 of the 2020 GWMCA Report does include a "Groundwater Potentiometric Elevation Contour Map" for each of the 2020 sampling events as

Evergy Kansas Central, Inc. November 4, 2022 Page 2

Figures 2, 3, and 4. 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 sampling events completed in March, June, and September 2020 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 in 2020. Statistical analyses completed in 2020 included:
 - Overview of the January 2020 statistical analyses for data obtained in the September 2019 sampling event; and
 - Overview of the July 2020 statistical analyses for data obtained in the March 2020 sampling event.
- Attachment 3 Revised 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 March, June, and September 2020 are provided.



ATTACHMENT 1 Laboratory Analytical Reports ATTACHMENT 1-1 March 2020 Sampling Event Laboratory Analytical Report



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

March 16, 2020

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

RE: Project: JEC FAL CCR Pace Project No.: 60331039

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on March 06, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

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

Enclosures

cc: Bob Beck, Evergy Sarah Hazelwood, Evergy, Inc. Laura Hines, Evergy, Inc. Jake Humphrey, Evergy, Inc. Samantha Kaney, Haley & Aldrich Jared Morrison, Evergy, Inc. Melanie Satanek, Haley & Aldrich, Inc. JD Schlegel, Evergy, Inc. Brandon Will, Evergy, Inc. Danielle Zinmaster, Haley & Aldrich





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

CERTIFICATIONS

Project: JEC FAL CCR Pace Project No.: 60331039

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219 Missouri Inorganic Drinking Water Certification #: 10090 Arkansas Drinking Water Arkansas Certification #: 19-016-0 Arkansas Drinking Water Illinois Certification #: 004455 Iowa Certification #: 118 Kansas/NELAP Certification #: E-10116 Louisiana Certification #: 03055 Nevada Certification #: KS000212020-2 Oklahoma Certification #: 9205/9935 Florida: Cert E871149 SEKS WET Texas Certification #: T104704407-19-12 Utah Certification #: KS000212018-8 Illinois Certification #: 004592 Kansas Field Laboratory Accreditation: # E-92587 Missouri SEKS Micro Certification: 10070



SAMPLE SUMMARY

Project: JEC FAL CCR Pace Project No.: 60331039

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60331039001	FAA-06-030420	Water	03/04/20 13:00	03/06/20 16:25
60331039002	DUP-FAL-030420	Water	03/04/20 13:10	03/06/20 16:25
60331039003	FAA-03-030420	Water	03/04/20 14:40	03/06/20 16:25
60331039004	FAA-05-030420	Water	03/04/20 16:20	03/06/20 16:25
60331039005	FAA-04-030420	Water	03/05/20 08:10	03/06/20 16:25



SAMPLE ANALYTE COUNT

Project: JEC FAL CCR Pace Project No.: 60331039

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60331039001	FAA-06-030420	EPA 200.7	JDE	4	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	MGS	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
60331039002	DUP-FAL-030420	EPA 200.7	JDE	4	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	MGS	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
60331039003	FAA-03-030420	EPA 200.7	JDE	4	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	MGS	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
60331039004	FAA-05-030420	EPA 200.7	JDE	4	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	MGS	1	PASI-K
		EPA 300.0	BLA	3	PASI-K
60331039005	FAA-04-030420	EPA 200.7	JDE	4	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	AJS	1	PASI-K
		SM 4500-H+B	MGS	1	PASI-K
		EPA 300.0	BLA	3	PASI-K



Project: JEC FAL CCR

Pace Project No.: 60331039

Method: EPA 200.7

Description:200.7 Metals, TotalClient:Evergy Kansas Central, Inc.Date:March 16, 2020

General Information:

5 samples were analyzed for EPA 200.7. 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:



Project: JEC FAL CCR

Pace Project No.: 60331039

Method: EPA 200.8

Description:200.8 MET ICPMSClient:Evergy Kansas Central, Inc.Date:March 16, 2020

General Information:

5 samples were analyzed for EPA 200.8. 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:



Project: JEC FAL CCR

Pace Project No.: 60331039

Method: SM 2540C

Description:2540C Total Dissolved SolidsClient:Evergy Kansas Central, Inc.Date:March 16, 2020

General Information:

5 samples were analyzed for SM 2540C. 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:



Project: JEC FAL CCR

Pace Project No.: 60331039

Method: SM 4500-H+B

Description:4500H+ pH, ElectrometricClient:Evergy Kansas Central, Inc.Date:March 16, 2020

General Information:

5 samples were analyzed for SM 4500-H+B. 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-FAL-030420 (Lab ID: 60331039002)
- FAA-03-030420 (Lab ID: 60331039003)
- FAA-04-030420 (Lab ID: 60331039005)
- FAA-05-030420 (Lab ID: 60331039004)
- FAA-06-030420 (Lab ID: 60331039001)

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:



Project: JEC FAL CCR Pace Project No.: 60331039

Method:EPA 300.0Description:300.0 IC Anions 28 DaysClient:Evergy Kansas Central, Inc.Date:March 16, 2020

General Information:

5 samples were analyzed for EPA 300.0. 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.



Project: JEC FAL CCR

Pace Project No.: 60331039

Sample: FAA-06-030420	Lab ID: 603	331039001	Collected: 03/04/2	20 13:00	Received: 03	8/06/20 16:25 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Me	thod: EPA 20	0.7 Preparation Met	thod: EF	PA 200.7			
Barium, Total Recoverable	0.028	mg/L	0.0050	1	03/11/20 10:14	03/12/20 15:06	7440-39-3	
Boron, Total Recoverable	2.8	mg/L	0.10	1	03/11/20 10:14	03/12/20 15:06	7440-42-8	
Calcium, Total Recoverable	134	mg/L	0.20	1	03/11/20 10:14	03/12/20 15:06	7440-70-2	
Lithium	0.011	mg/L	0.010	1	03/11/20 10:14	03/12/20 15:06	7439-93-2	
200.8 MET ICPMS	Analytical Me	thod: EPA 20	0.8 Preparation Met	thod: EF	PA 200.8			
Arsenic, Total Recoverable	0.0063	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:38	7440-38-2	
Cobalt, Total Recoverable	0.0018	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:38	7440-48-4	
Molybdenum, Total Recoverable	0.38	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:38	7439-98-7	
Selenium, Total Recoverable	0.0011	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:38	7782-49-2	
2540C Total Dissolved Solids	Analytical Me	thod: SM 254	40C					
Total Dissolved Solids	1890	mg/L	20.0	1		03/10/20 12:44		
4500H+ pH, Electrometric	Analytical Me	thod: SM 450	00-H+B					
pH at 25 Degrees C	7.2	Std. Units	0.10	1		03/13/20 15:43	i	H6
300.0 IC Anions 28 Days	Analytical Me	thod: EPA 30	0.0					
Chloride	66.2	mg/L	10.0	10		03/09/20 13:55	16887-00-6	
Fluoride	0.67	mg/L	0.20	1		03/09/20 13:39	16984-48-8	
Sulfate	978	mg/L	100	100		03/10/20 11:42	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60331039

Sample: DUP-FAL-030420	Lab ID: 603	331039002	Collected: 03/04/2	20 13:10	Received: 03	8/06/20 16:25 N	Aatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Me	thod: EPA 20	0.7 Preparation Met	hod: EF	PA 200.7			
Barium, Total Recoverable	0.026	mg/L	0.0050	1	03/11/20 10:14	03/12/20 15:08	7440-39-3	
Boron, Total Recoverable	3.3	mg/L	0.10	1	03/11/20 10:14	03/12/20 15:08	7440-42-8	
Calcium, Total Recoverable	127	mg/L	0.20	1	03/11/20 10:14	03/12/20 15:08	7440-70-2	
Lithium	0.011	mg/L	0.010	1	03/11/20 10:14	03/12/20 15:08	7439-93-2	
200.8 MET ICPMS	Analytical Me	thod: EPA 20	0.8 Preparation Met	hod: EF	PA 200.8			
Arsenic, Total Recoverable	0.0075	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:48	7440-38-2	
Cobalt, Total Recoverable	0.0018	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:48	7440-48-4	
Molybdenum, Total Recoverable	0.44	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:48	7439-98-7	
Selenium, Total Recoverable	0.0012	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:48	7782-49-2	
2540C Total Dissolved Solids	Analytical Me	thod: SM 254	IOC					
Total Dissolved Solids	2240	mg/L	20.0	1		03/10/20 12:44		
4500H+ pH, Electrometric	Analytical Me	thod: SM 450)0-H+B					
pH at 25 Degrees C	7.3	Std. Units	0.10	1		03/13/20 15:45		H6
300.0 IC Anions 28 Days	Analytical Me	thod: EPA 30	0.0					
Chloride	65.2	mg/L	10.0	10		03/09/20 14:47	16887-00-6	
Fluoride	0.75	mg/L	0.20	1		03/09/20 14:31	16984-48-8	
Sulfate	1110	mg/L	100	100		03/10/20 11:58	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60331039

Sample: FAA-03-030420	Lab ID: 603	331039003	Collected: 03/04/2	20 14:40	Received: 03	B/06/20 16:25	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Me	thod: EPA 20	0.7 Preparation Met	thod: EF	PA 200.7			
Barium, Total Recoverable	0.025	mg/L	0.0050	1	03/11/20 10:14	03/12/20 15:10	7440-39-3	
Boron, Total Recoverable	0.51	mg/L	0.10	1	03/11/20 10:14	03/12/20 15:10	7440-42-8	
Calcium, Total Recoverable	184	mg/L	0.20	1	03/11/20 10:14	03/12/20 15:10	7440-70-2	
Lithium	0.017	mg/L	0.010	1	03/11/20 10:14	03/12/20 15:10	7439-93-2	
200.8 MET ICPMS	Analytical Me	thod: EPA 20	0.8 Preparation Met	thod: EF	PA 200.8			
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:54	7440-38-2	
Cobalt, Total Recoverable	<0.0010	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:54	7440-48-4	
Molybdenum, Total Recoverable	0.0082	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:54	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:54	7782-49-2	
2540C Total Dissolved Solids	Analytical Me	thod: SM 254	40C					
Total Dissolved Solids	1090	mg/L	13.3	1		03/10/20 12:44		
4500H+ pH, Electrometric	Analytical Me	thod: SM 450	00-H+B					
pH at 25 Degrees C	7.1	Std. Units	0.10	1		03/13/20 15:46		H6
300.0 IC Anions 28 Days	Analytical Me	thod: EPA 30	0.0					
Chloride	64.6	mg/L	10.0	10		03/09/20 15:35	16887-00-6	
Fluoride	0.30	mg/L	0.20	1		03/09/20 15:19	16984-48-8	
Sulfate	428	mg/L	50.0	50		03/09/20 15:51	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60331039

Sample: FAA-05-030420	Lab ID: 603	331039004	Collected: 03/04/2	20 16:20	Received: 03	B/06/20 16:25	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Me	thod: EPA 20	0.7 Preparation Met	hod: EF	PA 200.7			
Barium, Total Recoverable	<0.0050	mg/L	0.0050	1	03/11/20 10:14	03/12/20 15:13	7440-39-3	
Boron, Total Recoverable	1.6	mg/L	0.10	1	03/11/20 10:14	03/12/20 15:13	7440-42-8	
Calcium, Total Recoverable	519	mg/L	0.20	1	03/11/20 10:14	03/12/20 15:13	7440-70-2	
Lithium	0.14	mg/L	0.010	1	03/11/20 10:14	03/12/20 15:13	7439-93-2	
200.8 MET ICPMS	Analytical Me	thod: EPA 20	0.8 Preparation Met	hod: EF	PA 200.8			
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:57	7440-38-2	
Cobalt, Total Recoverable	0.0045	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:57	7440-48-4	
Molybdenum, Total Recoverable	0.034	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:57	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/09/20 16:51	03/11/20 11:57	7782-49-2	
2540C Total Dissolved Solids	Analytical Me	thod: SM 254	10C					
Total Dissolved Solids	3000	mg/L	40.0	1		03/10/20 12:44		
4500H+ pH, Electrometric	Analytical Me	thod: SM 450)0-H+B					
pH at 25 Degrees C	7.0	Std. Units	0.10	1		03/13/20 15:49		H6
300.0 IC Anions 28 Days	Analytical Me	thod: EPA 30	0.0					
Chloride	86.6	mg/L	10.0	10		03/10/20 12:46	16887-00-6	
Fluoride	0.77	mg/L	0.20	1		03/09/20 16:55	16984-48-8	
Sulfate	1640	mg/L	200	200		03/10/20 13:02	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60331039

Sample: FAA-04-030420	Lab ID: 603	331039005	Collected: 03/05/2	20 08:10	Received: 03	8/06/20 16:25 N	Aatrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Me	thod: EPA 200	0.7 Preparation Met	hod: EF	PA 200.7			
Barium, Total Recoverable	0.049	mg/L	0.0050	1	03/11/20 10:14	03/12/20 15:15	7440-39-3	
Boron, Total Recoverable	0.63	mg/L	0.10	1	03/11/20 10:14	03/12/20 15:15	7440-42-8	
Calcium, Total Recoverable	182	mg/L	0.20	1	03/11/20 10:14	03/12/20 15:15	7440-70-2	
Lithium	0.019	mg/L	0.010	1	03/11/20 10:14	03/12/20 15:15	7439-93-2	
200.8 MET ICPMS	Analytical Me	thod: EPA 20	0.8 Preparation Met	hod: EF	PA 200.8			
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	03/09/20 16:51	03/11/20 12:00	7440-38-2	
Cobalt, Total Recoverable	0.0013	mg/L	0.0010	1	03/09/20 16:51	03/11/20 12:00	7440-48-4	
Molybdenum, Total Recoverable	0.0056	mg/L	0.0010	1	03/09/20 16:51	03/11/20 12:00	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1	03/09/20 16:51	03/11/20 12:00	7782-49-2	
2540C Total Dissolved Solids	Analytical Me	thod: SM 254	0C					
Total Dissolved Solids	1170	mg/L	13.3	1		03/10/20 12:46		
4500H+ pH, Electrometric	Analytical Me	thod: SM 450	0-H+B					
pH at 25 Degrees C	7.3	Std. Units	0.10	1		03/13/20 15:53		H6
300.0 IC Anions 28 Days	Analytical Me	thod: EPA 30	0.0					
Chloride	65.9	mg/L	10.0	10		03/09/20 17:27	16887-00-6	
Fluoride	<0.20	mg/L	0.20	1		03/09/20 17:11	16984-48-8	
Sulfate	469	mg/L	50.0	50		03/09/20 17:43	14808-79-8	



Project: J	EC FAL CCR											
Pace Project No.: 6	0331039											
QC Batch:	643043		Analy	sis Metho	d: El	PA 200.7						
	EPA 200.7			/sis Descri		0.7 Metals	s. Total					
Associated Lab Samp		001, 6033103900										
METHOD BLANK: 2	613103			Matrix: W	ater							
Associated Lab Sample	les: 60331039	001, 6033103900	2.6033103	9003, 603;	31039004.6	033103900)5					
	000010000		E, 0000100 Blar		Reporting							
Paramet	ter	Units	Res		Limit	Analy	zed	Qualifie	ers			
Barium		mg/L		0.0050	0.0050			·				
Boron		mg/L		<0.10	0.0050							
Calcium		mg/L		<0.20	0.20							
Lithium		mg/L		<0.010	0.010							
LABORATORY CONT	ROL SAMPLE:	2613104										
			Spike	LC	-	LCS	%	Rec				
Paramet	ter	Units	Conc.	Res	sult	% Rec	Lir	mits	Qualifiers			
Barium		mg/L		1	1.0	101		85-115		_		
Boron		mg/L		1	0.94	94	ŀ	85-115				
Calcium		mg/L	1	0	10.6	106	6	85-115				
Lithium		mg/L		1	1.0	100)	85-115				
			405									
MATRIX SPIKE & MA	TRIX SPIKE DUP	LICATE: 2613		MSD	2613106							
MATRIX SPIKE & MA	TRIX SPIKE DUP		MS	MSD Spike		MSD	MS	MSD	% Rec		Max	
		60331039005	MS Spike	Spike	MS	MSD Result	MS % Rec	MSD % Rec	% Rec	RPD	Max	Qua
Parameter	Units	60331039005 Result	MS Spike Conc.	Spike Conc.	MS Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
Parameter	Units mg/L	60331039005 Result 0.049	MS Spike Conc.	Spike Conc. 1	MS Result 1.0	Result 1.0	% Rec 9	% Rec	Limits 70-130	2	RPD 20	Qua
Parameter Barium Boron	Units mg/L mg/L	60331039005 Result 0.049 0.63	MS Spike Conc. 1 1	Spike Conc. 1 1	MS Result 1.0 1.5	Result 1.0 1.6	% Rec 9 9	% Rec 6 9 2 9	Limits 70-130 4 70-130	2	RPD 20 20	Qua
Parameter Barium Boron Calcium	Units mg/L mg/L mg/L	60331039005 Result 0.049 0.63 182	MS Spike Conc. 1 1 1 10	Spike Conc. 1 1 10	MS Result 1.0 1.5 190	Result 1.0 1.6 194	% Rec 9 9 7	% Rec 6 9 2 9 5 11	Limits 70-130 4 70-130 6 70-130	2 1 2	RPD 20 20 20	Qua
Parameter Barium Boron Calcium	Units mg/L mg/L	60331039005 Result 0.049 0.63	MS Spike Conc. 1 1	Spike Conc. 1 1	MS Result 1.0 1.5	Result 1.0 1.6	% Rec 9 9	% Rec 6 9 2 9 5 11	Limits 70-130 4 70-130	2	RPD 20 20 20	Qua
Parameter Barium Boron Calcium Lithium	Units mg/L mg/L mg/L	60331039005 Result 0.049 0.63 182	MS Spike Conc. 1 1 1 10	Spike Conc. 1 1 10	MS Result 1.0 1.5 190	Result 1.0 1.6 194	% Rec 9 9 7	% Rec 6 9 2 9 5 11	Limits 70-130 4 70-130 6 70-130	2 1 2	RPD 20 20 20	Qua
Parameter Barium Boron Calcium Lithium	Units mg/L mg/L mg/L	60331039005 Result 0.049 0.63 182 0.019	MS Spike Conc. 1 1 10 10	Spike Conc. 1 1 10	MS Result 1.0 1.5 190	Result 1.0 1.6 194	% Rec 9 9 7	% Rec 6 9 2 9 5 11	Limits 70-130 4 70-130 6 70-130	2 1 2 1	RPD 20 20 20	Qua
Parameter Barium Boron Calcium Lithium	Units mg/L mg/L mg/L PLE:	60331039005 Result 0.049 0.63 182 0.019	MS Spike Conc. 1 1 10 1 60331	Spike Conc. 1 1 10 10	MS Result 1.0 1.5 190 0.99	Result 1.0 1.6 194 1.0	% Rec 9 9 7	% Rec 6 9 2 9 5 11 7 9	Limits 70-130 4 70-130 6 70-130 8 70-130	2 1 2 1	RPD 20 20 20	
Parameter Barium Boron Calcium Lithium MATRIX SPIKE SAMF Parame	Units mg/L mg/L mg/L PLE:	60331039005 Result 0.049 0.63 182 0.019 2613107	MS Spike Conc. 1 1 10 1 60331	Spike Conc. 1 1 1 10 1 0 41006	MS Result 1.0 1.5 190 0.99 Spike	Result 1.0 1.6 194 1.0 MS Result	% Rec 9 9 7	<u>% Rec</u> 6 9 2 9 5 11 7 9 MS	Limits 70-130 70-130 6 70-130 8 70-130 8 70-130 % Rec Limits	2 1 2 1	RPD 20 20 20 20	
Parameter Barium Boron Calcium Lithium MATRIX SPIKE SAMF Paramet Barium	Units mg/L mg/L mg/L PLE:	60331039005 Result 0.049 0.63 182 0.019 2613107 Units	MS Spike Conc. 1 1 10 1 60331	Spike Conc. 1 1 10 1 1 041006 sult	MS Result 1.0 1.5 190 0.99 Spike Conc.	Result 1.0 1.6 194 1.0 MS Result	% Rec 9 9 7 9	% Rec 6 9 2 9 5 11 7 9 MS % Rec	Limits 70-130 4 70-130 6 70-130 8 70-130 8 70-130 8 70-130 8 70-130	2 1 2 1	RPD 20 20 20 20	
Barium Boron Calcium Lithium MATRIX SPIKE SAMF	Units mg/L mg/L mg/L PLE:	60331039005 Result 0.049 0.63 182 0.019 2613107 Units mg/L	MS Spike Conc. 1 1 10 1 60331	Spike Conc. 1 1 1 10 1 0 41006 sult 0.061	MS Result 1.0 1.5 190 0.99 Spike Conc.	Result 1.0 1.6 194 1.0 MS Result	% Rec 9 9 7 9	% Rec 6 9 2 9 5 11 7 9 MS % Rec 98 98	Limits 70-130 70-130 6 70-130 6 70-130 8 70-130 8 70-130 % Rec Limits 3 70 5 70	2 1 2 1	RPD 20 20 20 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



QC Batch: 642549				ysis Metho		PA 200.8						
QC Batch Method: EPA 20				ysis Descri		00.8 MET						
Associated Lab Samples: 6	603310390	01, 6033103900	2, 6033103	39003, 603	31039004, 6	033103900	5					
METHOD BLANK: 2611550				Matrix: W	ater							
Associated Lab Samples: 6	03310390	01, 6033103900	2, 6033103	39003, 603	31039004, 6	033103900	5					
			Blar	nk	Reporting							
Parameter		Units	Res	ult	Limit	Analy	zed	Qualifie	rs			
Arsenic		mg/L	<	0.0010	0.0010	03/11/20	11:35					
Cobalt		mg/L	<	0.0010	0.0010	03/11/20	11:35					
Molybdenum		mg/L	<	0.0010	0.0010	03/11/20	11:35					
Selenium		mg/L	<	0.0010	0.0010	03/11/20	11:35					
LABORATORY CONTROL SA		2611551										
		2011001	Spike	LC	s	LCS	% R	ec				
Parameter		Units	Conc.	Res		% Rec	Lim		Qualifiers			
Arsenic		mg/L	0.0)4	0.040	99		85-115		_		
Cobalt		mg/L	0.0)4	0.042	105		85-115				
Molybdenum		mg/L	0.0)4	0.040	101		85-115				
Selenium		mg/L	0.0)4	0.039	97		85-115				
MATRIX SPIKE & MATRIX SF		_ICATE: 2611	552		2611553							
			MS	MSD								
		60331039001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
Arsenic	mg/L	0.0063	0.04	0.04	0.046	0.046	99	98	3 70-130	1	20	
Cobalt	mg/L	0.0018	0.04	0.04	0.045	0.045	108			1		
Volybdenum	mg/L	0.38	0.04	0.04	0.41	0.42	90	97	70-130	1	20	
Selenium	mg/L	0.0011	0.04	0.04	0.037	0.037	90	90) 70-130	0	20	
MATRIX SPIKE SAMPLE:		2611554										
			60331	041001	Spike	MS		MS	% Rec			
Parameter		Units	Re	sult	Conc.	Result	%	6 Rec	Limits		Qualif	fiers
Arsenic		mg/L		0.0074	0.04	0.0)44	90	70-	130		
Cobalt		mg/L		<0.0010	0.04	0.0	041	102	70-	130		
Molybdenum		mg/L		0.014	0.04	0.0)55	104	70-	130		
Selenium		mg/L		<0.0010	0.04	0.0	036	91	70	130		

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

REPORT OF LABORATORY ANALYSIS



,	JEC FAL CCR							
Pace Project No.:	60331039							
QC Batch:	642844		Analysis Me	ethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total D	issolved Solids		
Associated Lab Sam	nples: 6033103	9001, 6033103900	02, 60331039003,	60331039004	, 60331039005			
METHOD BLANK:	2612497		Matrix	: Water				
Associated Lab Sam	nples: 6033103	9001, 603310390	02, 60331039003,	60331039004	, 60331039005			
			Blank	Reporting				
Param	neter	Units	Result	Limit	Analyze	ed Qua	lifiers	_
Total Dissolved Solid	ds	mg/L	<5.0) 5	5.0 03/10/20 1	2:44		
LABORATORY CON	NTROL SAMPLE:	2612498						
			Spike	LCS	LCS	% Rec		
Param	neter	Units	Conc.	Result	% Rec	Limits	Qu	alifiers
Total Dissolved Solid	ds	mg/L	1000	994	99	80-120		
SAMPLE DUPLICAT	ΓE: 2612499							
			60331012002	Dup		Max		
Param	neter	Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solid	ds	mg/L	1010) 10	50	4	10	
SAMPLE DUPLICAT	TE: 2612500							
5		1.1.5.1.5	60330920001	Dup	000	Max		Qualifiant
Param		Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solid	40	mg/L	133	1	27	5	10	

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



	JEC FAL CCR		
Pace Project No .:	60331039		
QC Batch:	642933	Analysis Method:	SM 4500-H+B
QC Batch Method:	SM 4500-H+B	Analysis Description:	4500H+B pH
Associated Lab Sam	ples: 60331039001, 60331039002, 60	331039003, 60331039004	, 60331039005

		60331040003	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.1	7.1	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



Pace Project													
QC Batch:	64	2554		Analy	sis Metho	d: E	PA 300.0						
QC Batch M	ethod: EF	PA 300.0		Analy	sis Descri	ption: 3	00.0 IC Anio	ons					
Associated L	_ab Samples	: 603310390	001, 6033103900	2, 6033103	9003, 603	31039004, 6	033103900	5					
METHOD BL	LANK: 261	1564			Matrix: W	ater							
Associated L	_ab Samples	: 603310390	001, 6033103900	2, 6033103	9003, 603	31039004, 6	033103900	5					
				Blan	ık	Reporting							
	Parameter		Units	Resu	ult	Limit	Analy	zed	Qualifiers	S			
Chloride			mg/L		<1.0	1.0	03/09/20	09:57					
Fluoride			mg/L		<0.20	0.20	03/09/20	09:57					
Sulfate			mg/L		<1.0	1.0	03/09/20	09:57					
METHOD BL	LANK: 2612	2086			Matrix: W	ater							
Associated L	_ab Samples	: 603310390	001, 6033103900	2, 6033103	9003, 603	31039004.6	033103900	5					
				Blan		Reporting							
	Parameter		Units	Resu		Limit	Analy	zed	Qualifiers	S			
Chloride			mg/L		<1.0	1.0	03/10/20	07:22					
Fluoride			mg/L		<0.20	0.20							
Sulfate			0										
Sullate			mg/L		<1.0	1.0	03/10/20	07:22					
LABORATO	RY CONTRO	DL SAMPLE:	mg/L 2611565	Spike			0 03/10/20	07:22 % Re					
	RY CONTRC Parameter			Spike Conc.	<1.0 LC Res	S				Qualifiers			
			2611565 Units	Conc.	LC	S	LCS	% Re Limit		Qualifiers			
LABORATO			2611565	Conc.	LC Res 5	S sult	LCS % Rec	% Re Limit	s (Qualifiers			
LABORATO			2611565 Units mg/L	Conc. 2.	LC Res 5	S sult 4.7	LCS % Rec 94	% Re Limit	s (0-110	Qualifiers	_		
LABORATO Chloride Fluoride Sulfate	Parameter		2611565 Units mg/L mg/L	Conc. 2.	LC 	S sult 4.7 2.4	LCS % Rec 94 96	% Re Limit	0-110 0-110	Qualifiers	_		
LABORATO Chloride Fluoride Sulfate	Parameter		2611565 Units mg/L mg/L mg/L	Conc. 2.	LC 	Sult 4.7 2.4 5.0	LCS % Rec 94 96	% Re Limit	s (00-110 00-110 00-110	Qualifiers	_		
LABORATO Chloride Fluoride Sulfate	Parameter	DL SAMPLE:	2611565 Units mg/L mg/L mg/L	Conc2.	LC Res 5 5 5 5	Sult 4.7 2.4 5.0	LCS % Rec 94 96 100	% Re Limit 9 9 9 9	s (10-110 10-110 10-110 10-110	Qualifiers	_		
LABORATO Chloride Fluoride Sulfate	Parameter RY CONTRC	DL SAMPLE:	2611565 Units mg/L mg/L mg/L 2612087 Units	Conc. 2. Spike Conc.	LC Res 5 5 5 5	Sult 4.7 2.4 5.0	LCS % Rec 94 96 100 LCS	% Re Limit 9 9 9 9 9 9 8 8 1 1 1 1 1 1 1 1 1 1 1 1	s (10-110 10-110 10-110 10-110		_		
LABORATOI Chloride Fluoride Sulfate LABORATOI	Parameter RY CONTRC	DL SAMPLE:	2611565 Units mg/L mg/L mg/L 2612087	Conc. 2. Spike Conc.	LC 5 5 5 5 5 5 5 5 5 5 5 5 5	S sult 4.7 2.4 5.0 S sult	LCS % Rec 94 96 100 LCS % Rec	% Re Limit g g g g g g g g g g g g g g g g g g g	s (10-110 10-110 10-110 10-110 ec s (_		
LABORATOI Chloride Fluoride Sulfate LABORATOI Chloride	Parameter RY CONTRC	DL SAMPLE:	2611565 Units mg/L mg/L 2612087 Units mg/L	Spike Conc. 2.	LC 5 5 5 5 5 5 5 5 5 5 5 5 5	S sult 4.7 2.4 5.0 S sult 4.7	LCS % Rec 94 96 100 LCS % Rec 94	% Re Limit 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	s (10-110 10-110 10-110 10-110 ec s (10-110		_		
LABORATOR Chloride Fluoride Sulfate LABORATOR Chloride Fluoride Sulfate	Parameter RY CONTRC Parameter	DL SAMPLE:	2611565 Units mg/L mg/L 2612087 Units mg/L mg/L mg/L	Conc. 2. Spike Conc. 2.	LC Res 5 5 5 5 5 5 5 5 5 5	S sult 4.7 2.4 5.0 S sult 4.7 2.4	LCS % Rec 94 96 100 LCS % Rec 94 95	% Re Limit 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	s (10-110 10-110 10-110 10-110 10-110 10-110 10-110		_		
LABORATOR Chloride Fluoride Sulfate LABORATOR Chloride Fluoride Sulfate	Parameter RY CONTRC Parameter	DL SAMPLE:	2611565 Units mg/L mg/L 2612087 Units mg/L mg/L mg/L	Conc. 2. Spike Conc. 2.	LC Res 5 5 5 5 5 5 5 5 5 5	S sult 4.7 2.4 5.0 S S sult 4.7 2.4 5.0	LCS % Rec 94 96 100 LCS % Rec 94 95	% Re Limit 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	s (10-110 10-110 10-110 10-110 10-110 10-110 10-110		_		
LABORATOR Chloride Fluoride Sulfate LABORATOR Chloride Fluoride Sulfate	Parameter RY CONTRC Parameter	DL SAMPLE:	2611565 Units mg/L mg/L 2612087 Units mg/L mg/L mg/L	Conc. 2. Spike Conc. 2. 566	LC Res 5 5 5 5 5 5 5 5 5 5 5 5 5	S sult 4.7 2.4 5.0 S S sult 4.7 2.4 5.0	LCS % Rec 94 96 100 LCS % Rec 94 95	% Re Limit 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	s (10-110 10-110 10-110 10-110 10-110 10-110 10-110		_	Max	
LABORATOI Chloride Fluoride Sulfate LABORATOI Chloride Fluoride Sulfate MATRIX SPI	Parameter RY CONTRC Parameter	DL SAMPLE:	2611565 Units mg/L mg/L 2612087 Units mg/L mg/L mg/L tlICATE: 2611	Conc. 2. Spike Conc. 2. 566 MS	LC Res 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Soult 4.7 2.4 5.0 Soult 4.7 2.4 5.0 2611567	LCS % Rec 94 96 100 LCS % Rec 94 95 99	% Re Limit 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	s (0 10-110 10-110 10-110 10-110 10-110 10-110 10-110	Qualifiers		Max RPD	Qual
LABORATOI Chloride Fluoride Sulfate LABORATOI Chloride Fluoride Sulfate MATRIX SPI	Parameter RY CONTRO Parameter	DL SAMPLE:	2611565 Units mg/L mg/L 2612087 Units mg/L mg/L mg/L tlCATE: 2611 60330808001	Conc. 2. Spike Conc. 2. 5666 MS Spike	LC Res 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Sult 4.7 2.4 5.0 Sult 4.7 2.4 5.0 2611567 MS	LCS % Rec 94 96 100 LCS % Rec 94 95 99 MSD	% Re Limit 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	s (0 00-110 00-110 00-110 00-110 00-110 00-110 00-110 00-110	Qualifiers % Rec		RPD	Qual
LABORATOI Chloride Fluoride Sulfate LABORATOI Chloride Fluoride Sulfate MATRIX SPI Pa	Parameter RY CONTRO Parameter	DL SAMPLE:	2611565 Units mg/L mg/L 2612087 Units mg/L mg/L mg/L LICATE: 2611: 60330808001 Result	Conc. 2. Spike Conc. 2. 566 MS Spike Conc.	LC Res 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	S sult 4.7 2.4 5.0 S sult 4.7 2.4 5.0 2611567 MS Result	LCS % Rec 94 96 100 LCS % Rec 94 95 99 MSD Result	% Re Limit 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	s (10-110 1	Qualifiers % Rec Limits		RPD 15	Qual

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



Project: JEC FAL CCR Pace Project No.: 60331039

MATRIX SPIKE SAMPLE:	2611568						
Parameter	Units	60331040003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	106	100	206	100	80-120	
Fluoride	mg/L	0.25	2.5	2.5	89	80-120	
Sulfate	mg/L	544	250	806	105	80-120	

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

REPORT OF LABORATORY ANALYSIS



QUALIFIERS

Project: JEC FAL CCR Pace Project No.: 60331039

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

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



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	JEC FAL CCR
Pace Project No .:	60331039

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60331039001	FAA-06-030420	EPA 200.7	643043	EPA 200.7	643110
60331039002	DUP-FAL-030420	EPA 200.7	643043	EPA 200.7	643110
60331039003	FAA-03-030420	EPA 200.7	643043	EPA 200.7	643110
60331039004	FAA-05-030420	EPA 200.7	643043	EPA 200.7	643110
60331039005	FAA-04-030420	EPA 200.7	643043	EPA 200.7	643110
60331039001	FAA-06-030420	EPA 200.8	642549	EPA 200.8	642738
60331039002	DUP-FAL-030420	EPA 200.8	642549	EPA 200.8	642738
60331039003	FAA-03-030420	EPA 200.8	642549	EPA 200.8	642738
60331039004	FAA-05-030420	EPA 200.8	642549	EPA 200.8	642738
60331039005	FAA-04-030420	EPA 200.8	642549	EPA 200.8	642738
60331039001	FAA-06-030420	SM 2540C	642844		
60331039002	DUP-FAL-030420	SM 2540C	642844		
60331039003	FAA-03-030420	SM 2540C	642844		
60331039004	FAA-05-030420	SM 2540C	642844		
60331039005	FAA-04-030420	SM 2540C	642844		
60331039001	FAA-06-030420	SM 4500-H+B	642933		
60331039002	DUP-FAL-030420	SM 4500-H+B	642933		
60331039003	FAA-03-030420	SM 4500-H+B	642933		
60331039004	FAA-05-030420	SM 4500-H+B	642933		
60331039005	FAA-04-030420	SM 4500-H+B	642933		
60331039001	FAA-06-030420	EPA 300.0	642554		
60331039002	DUP-FAL-030420	EPA 300.0	642554		
60331039003	FAA-03-030420	EPA 300.0	642554		
60331039004	FAA-05-030420	EPA 300.0	642554		
60331039005	FAA-04-030420	EPA 300.0	642554		

Pace Analytical Sample Condition Up	oon Receipt	WO#:60331039
Tracking #: Pace Custody Seal on Cooler/Box Present: Yes Packing Material: Bubble Wrap Bubble Bags Thermometer Used: Thermometer Used: Image: Corr. Factor Cooler Temperature (°C): As-read	Foam Ice: Wet Blue No	I? Yes No No No No No None C Other C O
Temperature should be above freezing to 6*C	Res DNO DNA	
Chain of Custody present:	AYes DNO DINIA	
Chain of Custody relinquished:	AYES DNO DNA	
Samples arrived within holding time:	Dyes DNO DNA	
Short Hold Time analyses (<72hr):	1,	
Rush Turn Around Time requested:	11	
Sufficient volume:	Pres EINO DN/A	
Correct containers used:	Tyes INO IN/A	
Pace containers used:	TYes DNO DNA	
Containers intact:	Tyres INO IN/A	X
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	DYes DNO DINIA	
Filtered volume received for dissolved tests?	DYes DNO DNA	
Sample labels match COC: Date / time / ID / analyses	Gres DNO DNA	
Samples contain multiple phases? Matrix:	Elves DNO EINIA	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Lot ± [c Cyanide water sample checks: Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	Pes □No □N/A • 63/73 □Yes □No □Yes □No	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Trip Blank present:	DYES DINO DAIA	
Headspace in VOA vials (>6mm):	DYes DNO DAIA	
Samples from USDA Regulated Area: State:	DYes DND DAVIA	
Additional labels attached to 5035A / TX1005 vials in the field	7 DYes DNO DINIA	
Client Notification/ Resolution: Copy COC t	o Client? Y N	Field Data Required? Y / N
Person Contacted: Date/ Comments/ Resolution:		
Project Manager Review:	Da	ate

F-KS-C-003-Rev.11, February 28, 2018

Pace Ar ._...ytical

CHAIN-OF-CU^C ODY / Analytical Request Document

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

Section A Required Client Information:	Section B Required Project Information:		Section C Invoice Information:		Page: of
Company: EVERGY KANSAS CENTRAL, INC.	Report To: Melissa Michels		Attention: Accounts Payable		
Address: Jeffrey Energy Center (JEC)	Copy To: Jared Morrison, Ja	ke Humphrey, Laura Hines	Company Name: EVERGY KANS	AS CENTRAL, INCREGULATORY	AGENCY
818 Kansas Ave, Topeka, KS 66612		don Will, Sarah Hazelwood	Address: See Section A	CARAMERCIANAL VEND DE	
Email To: melissa,michels@evergy.com	Purchase Order No.: 10JEC-0		Pace Quote	L UST	□ RCRA □ OTHER
Phone: 785-575-8113 Fax:	Project Name: JEC FAL CC		Reference: Pace Project Jasmine Amerin, 91		1910
Requested Due Date/TAT: 7 day			Manager: Pace Profile #: 9657, 1	STATE:	KS
Hequested Due Date/TAT: / day	110ject Number: 1297,	18-036		Requested Analysis Filtere	ed (Y/N)
		T	1		
Section D Valid Matrix C Required Client Information MATRIX	CODE	COLLECTED	Preservatives	N //	
AIR AIR AIR AIR AIR AIR AIR AIR	AMD AMD AMD AMD AMD AMD AMD AMD	TIME DATE TIME	# OF CONTAINERS # OF CONTAINERS Unpreserved H2SO4 HCI Na2S203 Methanol Other	J Analysis Test J 200.7 Total Metals* 200.8 Total Metals** 4500 H+B 300: Cl, F, SO4 2540C TDS	Pace Project No./ Lab I.D.
1 FAA-06-030420	WT 03/04		3 X X	XXXXX	
2 FAG- Duo-FAL-030	242011	1310	XX	XXXXX	
3 FAA-03-030420		1440		XXXXX	
4 FAA-05-030420		1620		XXXXX	
5 FAA- 04-030520	03/05	810		XXXXX	
6					
7					
8					
9					
10					
11				┨┣╼┾╼┼╾┽╌┽╌┽╌┽	
12					
ADDITIONAL COMMENTS	RELINQUISHED BY	AFFILIATION DATE	TIME ACCEPTE	D BY / AFFILIATION DATE	TIME SAMPLE CONDITIONS
200.7 Total Metals*: B, Ca, Ba, Li	Elion	HJA 03/06	1340 110	1 3-6	13:40
200.8 Total Metals**: As, Co, Mo, Se			1Afr	Bh 37, ho	1252.2 7 1 1
P		SAMPLER NAME AND SIGNATU	BE		N) N)
je 2		PRINT Name of SAMPLE		lican	h l n °, n l n °, l n n n n n n n n n n n n n n n n n n
Page 24 of 2		SIGNATURE of SAMPLE	1.1	DATE Signed (MM/DD/YY): 03/06/	Temp In °C Received on loa (Y/N) Custody Seated Cooler (Y/N) Samples Intact (Y/N)



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

March 30, 2020

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

RE: Project: JEC FAL CCR Pace Project No.: 60331133

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 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: Bob Beck, Evergy Sarah Hazelwood, Evergy, Inc. Laura Hines, Evergy, Inc. Jake Humphrey, Evergy, Inc. Samantha Kaney, Haley & Aldrich Jared Morrison, Evergy, Inc. Melanie Satanek, Haley & Aldrich, Inc. JD Schlegel, Evergy, Inc. Brandon Will, Evergy, Inc. Danielle Zinmaster, Haley & Aldrich





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

CERTIFICATIONS

Project: JEC FAL CCR Pace Project No.: 60331133

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



SAMPLE SUMMARY

Project: JEC FAL CCR Pace Project No.: 60331133

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60331133001	FAA-06-030420	Water	03/04/20 13:00	03/09/20 10:10
60331133002	DUP-FAL-030420	Water	03/04/20 13:10	03/09/20 10:10
60331133003	FAA-03-030420	Water	03/04/20 14:40	03/09/20 10:10
60331133004	FAA-05-030420	Water	03/04/20 16:20	03/09/20 10:10
60331133005	FAA-04-030520	Water	03/05/20 08:10	03/09/20 10:10



SAMPLE ANALYTE COUNT

Project:JEC FAL CCRPace Project No.:60331133

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60331133001	FAA-06-030420	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60331133002	DUP-FAL-030420	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60331133003	FAA-03-030420	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60331133004	FAA-05-030420	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60331133005	FAA-04-030520	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



PROJECT NARRATIVE

Project: JEC FAL CCR Pace Project No.: 60331133

Method: EPA 903.1

Description:903.1 Radium 226Client:Evergy Kansas Central, Inc.Date:March 30, 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:



PROJECT NARRATIVE

Project: JEC FAL CCR

Pace Project No.: 60331133

Method: EPA 904.0

Description:904.0 Radium 228Client:Evergy Kansas Central, Inc.Date:March 30, 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:



PROJECT NARRATIVE

Project: JEC FAL CCR Pace Project No.: 60331133

Method: Total Radium Calculation

Description:Total Radium 228+226Client:Evergy Kansas Central, Inc.Date:March 30, 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.



Project: JEC FAL CCR

Pace Project No.: 60331133

Sample: FAA-06-030420 PWS:	Lab ID: 60331133 Site ID:	001 Collected: 03/04/20 13:00 Sample Type:	Received:	03/09/20 10:10	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Serv	ices - Greensburg				
Radium-226		0.000 ± 0.311 (0.697) C:NA T:73%	pCi/L	03/26/20 14:34	13982-63-3	
	Pace Analytical Serv	ices - Greensburg				
Radium-228		0.0926 ± 0.359 (0.813) C:77% T:80%	pCi/L	03/26/20 11:20	15262-20-1	
	Pace Analytical Serv	ices - Greensburg				
Total Radium	Total Radium Calculation	0.0926 ± 0.475 (0.813)	pCi/L	03/30/20 13:35	5 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60331133

Sample: DUP-FAL-030420 PWS:	Lab ID: 60331133 Site ID:	Collected: 03/04/20 13:10 Sample Type:	Received:	03/09/20 10:10	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Serv	vices - Greensburg				
Radium-226	EPA 903.1	-0.227 ± 0.418 (0.947) C:NA T:83%	pCi/L	03/26/20 14:34	4 13982-63-3	
	Pace Analytical Serv	rices - Greensburg				
Radium-228	EPA 904.0	0.179 ± 0.392 (0.868) C:76% T:77%	pCi/L	03/26/20 11:20) 15262-20-1	
	Pace Analytical Serv	rices - Greensburg				
Total Radium	Total Radium Calculation	0.179 ± 0.573 (0.947)	pCi/L	03/30/20 13:35	5 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60331133

Sample: FAA-03-030420 PWS:	Lab ID: 6033113 Site ID:	3003 Collected: 03/04/20 14:40 Sample Type:	Received:	03/09/20 10:10	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	vices - Greensburg				
Radium-226	EPA 903.1	0.118 ± 0.434 (0.834) C:NA T:92%	pCi/L	03/26/20 14:49	13982-63-3	
	Pace Analytical Ser	vices - Greensburg				
Radium-228	EPA 904.0	0.810 ± 0.472 (0.874) C:78% T:75%	pCi/L	03/26/20 11:20	15262-20-1	
	Pace Analytical Ser	vices - Greensburg				
Total Radium	Total Radium Calculation	0.928 ± 0.641 (0.874)	pCi/L	03/30/20 13:35	5 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60331133

Sample: FAA-05-030420 PWS:	Lab ID: 6033113 Site ID:	Collected: 03/04/20 16:20 Sample Type:	Received:	03/09/20 10:10	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	rvices - Greensburg				
Radium-226	EPA 903.1	0.467 ± 0.515 (0.824) C:NA T:83%	pCi/L	03/26/20 14:49	9 13982-63-3	
	Pace Analytical Ser	rvices - Greensburg				
Radium-228	EPA 904.0	0.120 ± 0.367 (0.824) C:74% T:82%	pCi/L	03/26/20 11:20) 15262-20-1	
	Pace Analytical Ser	rvices - Greensburg				
Total Radium	Total Radium Calculation	0.587 ± 0.632 (0.824)	pCi/L	03/30/20 13:35	5 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60331133

Sample: FAA-04-030520 PWS:	Lab ID: 6033113 Site ID:	3005 Collected: 03/05/20 08:10 Sample Type:	Received:	03/09/20 10:10	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	vices - Greensburg				
Radium-226	EPA 903.1	0.230 ± 0.479 (0.863) C:NA T:80%	pCi/L	03/26/20 14:49	9 13982-63-3	
	Pace Analytical Ser	vices - Greensburg				
Radium-228	EPA 904.0	0.514 ± 0.363 (0.702) C:74% T:92%	pCi/L	03/25/20 11:31	15262-20-1	
	Pace Analytical Ser	vices - Greensburg				
Total Radium	Total Radium Calculation	0.744 ± 0.601 (0.863)	pCi/L	03/30/20 13:38	5 7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project:	JEC FAL CCR					
Pace Project No.:	60331133					
QC Batch:	387473		Analysis Method:	EPA 904.0		
QC Batch Method:	EPA 904.0		Analysis Description:	904.0 Radium 2	28	
			Laboratory:	Pace Analytical	Services - Greensbu	rg
Associated Lab Sar	mples: 60331133	8001, 603311330	02, 60331133003, 6033113300	04		
METHOD BLANK:	1876940		Matrix: Water			
Associated Lab Sa	mples: 60331133	8001, 603311330	02, 60331133003, 6033113300	04		
Parar	neter	Act ±	Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228		1.04 ± 0.427 (0.649) C:79% T:75%	pCi/L	03/26/20 11:21	

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.



QUALITY CONTROL - RADIOCHEMISTRY

Project:	JEC FAL CCR					
Pace Project No.:	60331133					
QC Batch:	387510		Analysis Method:	EPA 904.0		
QC Batch Method:	EPA 904.0		Analysis Description:	904.0 Radium 2	228	
			Laboratory:	Pace Analytical	Services - Greensbur	g
Associated Lab Sa	mples: 6033113	3005				
METHOD BLANK:	1877153		Matrix: Water			
Associated Lab Sa	mples: 6033113	3005				
Para	meter	Act	± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228		0.101 ± 0.247	(0.553) C:77% T:90%	pCi/L	03/25/20 11:32	

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.



QUALITY CONTROL - RADIOCHEMISTRY

Project:	JEC FAL CCR						
Pace Project No.:	60331133						
QC Batch:	387472		Analysis Method:	EPA 903.1			
QC Batch Method:	EPA 903.1		Analysis Description:	903.1 Radium-22	26		
			Laboratory:	Pace Analytical S	Services - Greensbur	g	
Associated Lab Sa	mples: 60331133	001, 603311330	02, 60331133003, 6033113300	4, 60331133005			
METHOD BLANK:	1876939		Matrix: Water				
Associated Lab Sa	mples: 60331133	001, 603311330	02, 60331133003, 6033113300	4, 60331133005			
Para	meter	Act ±	Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers	
Radium-226		-0.235 ± 0.358	(0.819) C:NA T:83%	pCi/L	03/26/20 14:18		

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



QUALIFIERS

Project: JEC FAL CCR Pace Project No.: 60331133

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	JEC FAL CCR
Pace Project No.:	60331133

Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
FAA-06-030420	EPA 903.1	387472		
DUP-FAL-030420	EPA 903.1	387472		
FAA-03-030420	EPA 903.1	387472		
FAA-05-030420	EPA 903.1	387472		
FAA-04-030520	EPA 903.1	387472		
FAA-06-030420	EPA 904.0	387473		
DUP-FAL-030420	EPA 904.0	387473		
FAA-03-030420	EPA 904.0	387473		
FAA-05-030420	EPA 904.0	387473		
FAA-04-030520	EPA 904.0	387510		
FAA-06-030420	Total Radium Calculation	390331		
DUP-FAL-030420	Total Radium Calculation	390331		
FAA-03-030420	Total Radium Calculation	390331		
FAA-05-030420	Total Radium Calculation	390331		
FAA-04-030520	Total Radium Calculation	390331		
	FAA-06-030420 DUP-FAL-030420 FAA-03-030420 FAA-05-030420 FAA-06-030420 DUP-FAL-030420 DUP-FAL-030420 FAA-03-030420 FAA-05-030420 FAA-03-030420 FAA-05-030420 FAA-05-030420 FAA-04-030520 FAA-04-030520 FAA-04-030520 FAA-04-030520 FAA-04-030520 FAA-04-030520 FAA-06-030420 DUP-FAL-030420 FAA-06-030420 FAA-06-030420 FAA-03-030420 FAA-03-030420	FAA-06-030420 EPA 903.1 DUP-FAL-030420 EPA 903.1 FAA-03-030420 EPA 903.1 FAA-05-030420 EPA 903.1 FAA-05-030420 EPA 903.1 FAA-04-030520 EPA 903.1 FAA-04-030520 EPA 903.1 FAA-06-030420 EPA 904.0 DUP-FAL-030420 EPA 904.0 FAA-05-030420 EPA 904.0 FAA-05-030420 EPA 904.0 FAA-05-030420 EPA 904.0 FAA-04-030520 EPA 904.0 FAA-04-030520 EPA 904.0 FAA-06-030420 Total Radium Calculation DUP-FAL-030420 Total Radium Calculation DUP-FAL-030420 Total Radium Calculation FAA-03-030420 Total Radium Calculation	FAA-06-030420 EPA 903.1 387472 DUP-FAL-030420 EPA 903.1 387472 FAA-03-030420 EPA 903.1 387472 FAA-05-030420 EPA 903.1 387472 FAA-05-030420 EPA 903.1 387472 FAA-05-030420 EPA 903.1 387472 FAA-04-030520 EPA 903.1 387472 FAA-06-030420 EPA 904.0 387473 FAA-06-030420 EPA 904.0 387473 FAA-05-030420 EPA 904.0 387473 FAA-05-030420 EPA 904.0 387473 FAA-05-030420 EPA 904.0 387473 FAA-04-030520 EPA 904.0 387510 FAA-06-030420 Total Radium Calculation 390331 DUP-FAL-030420 Total Radium Calculation 390331 FAA-03-030420 Total Radium Calculation 390331 FAA-05-030420 Total Radium Calculation 390331	FAA-06-030420 EPA 903.1 387472 DUP-FAL-030420 EPA 903.1 387472 FAA-03-030420 EPA 903.1 387472 FAA-03-030420 EPA 903.1 387472 FAA-05-030420 EPA 903.1 387472 FAA-05-030420 EPA 903.1 387472 FAA-04-030520 EPA 903.1 387472 FAA-06-030420 EPA 904.0 387473 FAA-06-030420 EPA 904.0 387473 FAA-05-030420 EPA 904.0 387473 FAA-05-030420 EPA 904.0 387473 FAA-05-030420 EPA 904.0 387473 FAA-05-030420 EPA 904.0 387473 FAA-04-030520 EPA 904.0 387510 FAA-06-030420 Total Radium Calculation 390331 DUP-FAL-030420 Total Radium Calculation 390331 FAA-03-030420 Total Radium Calculation 390331 FAA-05-030420 Total Radium Calculation 390331

Pace A. ___ytical"

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

Section A Required Client Information:	Section B Required Project Information:		Section C			Page: of
Company: EVERGY KANSAS CENTRAL, INC.	Report To: Melissa Michels		Invoice Information: Attention: Accounts Payable		1	, ago, oi
Address: Jeffrey Energy Center (JEC)	Copy To: Jared Morrison	Jake Humphrey, Laura Hines	riceconne : ayabio	AG OFATTON IN		
818 Kansas Ave, Topeka, KS 66612			Company Name: EVERGY KANS			\mathbf{Y}_{i} , the second secon
		ndon Will, Sarah Hazelwood	Address: SEE SECTION	A	🕅 NPDES 🧮 GRO	UND WATER F DRINKING WATER
			Pace Quote Reference:		L UST L RCR.	
	Project Name: JEC FAL CO	CR	Pace Project Jasmine Amerin, 9 Manager:	13-563-1403	Site Location	
Requested Due Date/TAT: 15 Day	Project Number: 1297	78-036	Pace Profile #: 9657, 2		STATE:	S Strategy and the strategy and the strategy and
				Requested		
Required Client Information MATRIX DRINKING WATER WATER WATER WATE WATER WATE WATER WATE WATER WATE WATE GOUSOLID OL WIPE AR (A-Z, 0-9 / , -) OTHER	The set of	TIME DATE TIME	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Image: Construction of the section of the sectio		Pace Project No./ Lab I.D.
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Page 18 of		SIGNATURE of SAMPLER		DATE Signed	03/06/20	Tem Tem I te
22					. 400	0 0

greeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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

Pittsburgh Lab Sample Conc	lition L	Jpon	ı Re	ceipt		
Pace Analytical' Client Name:		EV	<u>e</u> Rį	<u> </u>	Project #	
Courier: Fed Ex, UPS USPS Clie Tracking #: 1505 8700 500	ent 🗈	ommer	cial	Pace Other		Label LIMS Login
Custody Seal on Cooler/Box Present:	s _ n	o	Seals	intact: ves	no	
Thermometer Used	Туре	of Ice:	Wet	Blue		
Cooler Temperature Observed Temp	·	° C	Corr	ection Factor:	°C Final	Temp: °C
Temp should be above freezing to 6°C		-		M93191	Alad	
				pH paper Lot#	Date and	Initials/of person examining s
Comments:	Yes	No	N/A	TUDOST	a.171	
Chain of Custody Present:	$ \rightarrow $			1.		·····
Chain of Custody Filled Out:	$\frac{1}{2}$			2.		
Chain of Custody Relinquished:		\leq		3.		
Sampler Name & Signature on COC:				4.		
Sample Labels match COC:				5.		
-Includes date/time/ID Matrix:	_ <u></u>					
Samples Arrived within Hold Time:				6.		
Short Hold Time Analysis (<72hr remaining):	1	\angle		7.		
Rush Turn Around Time Requested:		\square		8.		
Sufficient Volume:				9.		
Correct Containers Used:				10.		
-Pace Containers Used:						
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.				16,		
exceptions: VOA, coliform, TOC, O&G, Phenolic Non-aqueous matrix	s, Radon,			ŀ	14<2	
All containers meet method preservation requirements.				Initial when completed	Date/time of preservation	
				Lot # of added		
Headspace in VOA Vials (>6mm):		/		17.		
Trip Blank Present:		\frown		18,		
Trip Blank Custody Seals Present			/			····
Rad Samples Screened < 0,5 mrem/hr				Initial when ///	Date: (3/	912020
Client Notification/ Resolution:	_ /					
Person Contacted:			Date/	-ime:	Conta	cted By:
Comments/ Resolution:						
Need J	E RAN/			· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·

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.

PACE Analytical Services Ra-226 Analysis

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

% RPD Limit:

www.cocelabs.com			<u>Analyst Must Manually Enter All Fields Highlighted in Analyst Must Manually Enter All Fields Highlighted in </u>	n Yellow.	
Test:	Ra-226				
Analyst:	MK1		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:	3/13/2020		Sample Collection Date:	3/4/2020	
Batch ID:	52830			30353726003	ana ang tang tang Tang tang tang tang tang tang tang tang t
Matrix:	DW		Sample I.D. Sample MS I.D.		in a started
	2		Sample MST.D. Sample MST.D.	30353726003145	
Method Blank Assessment		1		10,000	i lettesi siteitesi
MB Sample ID	1876939		Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL):	18-039	
MB concentration;	-0.235				
M/B Counting Uncertainty:	0.357		Spike Volume Used in MS (mL):	0.20	and the second
MB MDC:	0.819		Spike Volume Used in MSD (mL):	0.050	
MB Numerical Performance Indicator:	-1.29		MS Aliquot (L, g, F):		
MB Status vs Numerical Indicator:	N/A		MS Target Conc.(pCi/L, g, F):		
MB Status vs. MDC:	Pass		MSD Aliquot (L, g, F):		
MD Oldido V3. MDO.	r doo	1	MSD Target Conc. (pCi/L, g, F);		
aboratory Control Sample Assessment	LCSD (Y or N)?	N the second	MS Spike Uncertainty (calculated):	0.454	
aboratory control cample Assessment	LCS52830	LCSD52830	MSD Spike Uncertainty (calculated):		
Count Date:	3/30/2020	LC3032830	Sample Result:	6.225	
Spike I.D.;	18-039		Sample Result Counting Uncertainty (pCi/L, g, F):	1.096	
Spike Concentration (pCi/mL):	31.432		Sample Matrix Spike Result:	16.544	
Volume Used (mL):	0.10		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	1.668	
Aliquot Volume (L, g, F):	0.661	ala da satutada da	Sample Matrix Spike Duplicate Result:		
Target Conc. (pCi/L, g, F):	4.753		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator:	0.005	
Uncertainty (Calculated):	0.223			0.625	
Result (pCi/L, g, F):	4,679		MSD Numerical Performance Indicator:	400 750	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.155		MS Percent Recovery: MSD Percent Recovery:	106.75%	
Numerical Performance Indicator:	-0.12		MSD Percent Recovery: MS Status vs Numerical Indicator:	N/A	
Percent Recovery:	98.44%	j [MSD Status vs Numerical Indicator: MSD Status vs Numerical Indicator:	in/A	
Status vs Numerical Indicator:	N/A		MSD Status vs Numerical indicator. MS Status vs Recovery:	Pass	
Status vs Recovery:	Pass		MSD Status vs Recovery: MSD Status vs Recovery:	17835	
Upper % Recovery Limits:	135%		MS/MSD Upper % Recovery Limits:	136%	
Lower % Recovery Limits:	73%		MS/MSD Lower % Recovery Limits:	71%	
			montoo concervery cano.	11/0	
uplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:	30353726002	Enter Duplicate	Sample I.D.		
	30353726002DUP		Sample MS I.D.		
Sample Result (pCi/L, g, F):	4.477	other than	Sample MSD I.D.		
Sample Result Counting Uncertainty (pCi/L, g, F):	0.945	LCS/LCSD in	Sample Mabrie Result:		
Sample Duplicate Result (pCi/L, g, F):	3.939	the space below.	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F);	1.021		Sample Matrix Spike Duplicate Result:		
Are sample and/or duplicate results below RL?	See Below ##		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:	0.757	30353726002	Duplicate Numerical Performance Indicator:		
Duplicate RPD:		30353726002DUP	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
Duplicate Status vs Numerical Indicator:	N/A	2000012000200F	MS/ MSD Duplicate Status vs Numerical Indicator:		
Duplicate Status vs Namencal Anticator	Pass				
Dupitodie Status VS NED.	1 435		MS/ MSD Duplicate Status vs RPD:		

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

% RPD Limit:

32%

Comments:

Pace Analytical"

01,02

Ra-226 NELAC QC Printed: 3/30/2020 11:50 AM

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Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

www.pacelabs.com Test:	Ra-228		Anaryst wast wandary Erter All Herds Highlighted in	<u>, , , , , , , , , , , , , , , , , , , </u>	
Analyst	VAL		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:	3/16/2020		Sample Collection Date:	3/3/2020	11071100
Worklist	52831		Sample I.D.	30353735002	
Matrix:	WT		Sample I.D. Sample MS I.D.	30353735002MS	
			Sample MSD I.D.	COCCUTOCOLINE	
Nethod Blank Assessment			Spike I.D.:	19-057	
MB Sample ID	1876940		MS/MSD Decay Corrected Spike Concentration (pCi/mL):	34.976	
MB concentration:	1,036		Spike Volume Used in MS (mL):	0.20	
M/B 2 Sigma CSU:	0.427		Spike Volume Used in MSD (mL):		
MB MDC:	0.649		MS Aliquot (L, g, F):	0.803	
MB Numerical Performance Indicator:	4.75		MS Target Conc.(pCi/L, g, F):	8.716	
MB Status vs Numerical Indicator:	Fail*		MSD Aliquot (L, g, F):		
MB Status vs. MDC:	Fail*		MSD Target Conc. (pCi/L, g, F):		
			MS Spike Uncertainty (calculated):	0.628	
_aboratory Control Sample Assessment	LCSD (Y or N)?	N	MSD Spike Uncertainty (calculated):		
·	LC\$52831	LCSD52831	Sample Result:	1.303	
Count Date:	3/26/2020		Sample Result 2 Sigma CSU (pCi/L, g, F):	0.517	
Spike I.D.:	19-057		Sample Matrix Spike Result:	9.080	
Decay Corrected Spike Concentration (pCi/mL):	34.711		Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.859	
Volume Used (mL):	0.10		Sample Matrix Spike Duplicate Result:		
Aliquot Volume (L, g, F):	0.810		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Target Conc. (pCi/L, g, F):	4.284		MS Numerical Performance Indicator:	-0.908	
Uncertainty (Calculated):	0.308		MSD Numerical Performance Indicator:		
Result (pCi/L, g, F):	3.542		MS Percent Recovery:	89.22%	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.879		MSD Percent Recovery:		
Numerical Performance Indicator:	-1.56		MS Status vs Numerical Indicator:	Pass	
Percent Recovery:	82.68%		MSD Status vs Numerical Indicator.		
Status vs Numerical Indicator:	N/A		MS Status vs Recovery:	Pass	
Status vs Recovery:	Pass		MSD Status vs Recovery:		
Upper % Recovery Limits:	135%		MS/MSD Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%		MS/MSD Lower % Recovery Limits:	60%	
Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:	30353735001	Enter Duplicate	Sample I.D.		
Duplicate Sample I.D.	30353735001DUP	sample IDs if	Sample MS I.D.		
Sample Result (pCi/L, g, F):	0.820	other than	Sample MSD I.D.		
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.420	LCS/LCSD in	Sample Matrix Spike Result:		
Sample Duplicate Result (pCi/L, g, F):		the space below.	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.415		Sample Matrix Spike Duplicate Result:		
Are sample and/or duplicate results below RL?	See Below ##		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:	1.650	30353735001	Duplicate Numerical Performance Indicator:		
Duplicate RPD:	87.01%	30353735001DUP	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
Duplicate Status vs Numerical Indicator:	Pass		MS/ MSD Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD;	Fail***		MS/ MSD Duplicate Status vs RPD:		
% RPD Limit:	36%		% RPD Limit:		

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

Comments:

*)If the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable; otherwise this batch must be re-prepped.

Ra-228_52831_DW_W Ra-228 (R086-8 04Sep2019).xls

Pace Analytical"

Ra-228 NELAC DW2 Printed: 3/27/2020 8:58 AM

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3-27-20

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

www.pacslats.com Test:	Ra-228		Pharformaor manually enter 181 relab inginightea h		
Anaiyst:	VAL		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:	3/17/2020		Sample Collection Date:	3/3/2020	
Worklist	52844		Sample I.D.	30353662001	
Matrix:	ŴŤ		Sample MS I.D.	30353662001MS	
			Sample MSD I.D.		
Method Blank Assessment			Spike I.D.:	19-057	
MB Sample ID	1877153		MS/MSD Decay Corrected Spike Concentration (pCi/mL):	34.975	
MB concentration:	0,101		Spike Volume Used in MS (mL);	0.20	
M/B 2 Sigma CSU:	0.247		Spike Volume Used in MSD (mL):		,
MB MDC:	0.553		MS Aliquot (L, g, F):	0.807	
MB Numerical Performance Indicator:	0.80		MS Target Conc.(pCi/L, g, F):	8.670	
MB Status vs Numerical Indicator:	Pass		MSD Aliquot (L, g, F):		
MB Status vs. MDC:	Pass		MSD Target Conc. (pCi/L, g, F):		
		·	MS Spike Uncertainty (calculated):	0.624	
Laboratory Control Sample Assessment	LCSD (Y or N)?	N	MSD Spike Uncertainty (calculated):		
	LCS52844	LCSD52844	Sample Result:	0.253	
Count Date:	3/25/2020		Sample Result 2 Sigma CSU (pCi/L, g, F):	0.338	
Spike I.D.:	19-057		Sample Matrix Spike Result:	9.324	
Decay Corrected Spike Concentration (pCi/mL):	34.722		Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	1.881	
Volume Used (mL):	0,10		Sample Matrix Spike Duplicate Result:		
Aliquot Volume (L, g, F):	0,809		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Target Conc. (pCi/L, g, F):			MS Numerical Performance Indicator:	0,391	
Uncertainty (Calculated):			MSD Numerical Performance Indicator:		
Result (pCi/L, g, F):			MS Percent Recovery:	104.63%	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):			MSD Percent Recovery:		
Numerical Performance Indicator:	1.07		MS Status vs Numerical Indicator:	Pass	
Percent Recovery:	114.73%		MSD Status vs Numerical Indicator:		
Status vs Numerical Indicator:			MS Status vs Recovery:	Pass	
Status vs Recovery:	Pass		MSD Status vs Recovery:	1	
Upper % Recovery Limits:	135%		MS/MSD Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%		MS/MSD Lower % Recovery Limits:	60%	
Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:	30353541001	Enter Duplicate	Sample I.D.		
Duplicate Sample I.D.	30353541001DUP	sample IDs if	Sample MS I.D.		
Sample Result (pCi/L, g, F):	0.557	other than	Sample MSD I.D.		
Sample Result 2 Sigma CSU (pCi/L, g, F):		LCS/LCSD in	Sample Matrix Spike Result:		
Sample Duplicate Result (pCi/L, g, F):		the space below.	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.429	,	Sample Matrix Spike Duplicate Result:		
Are sample and/or duplicate results below RL?	See Below ##		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:	-1.714	30353541001	Duplicate Numerical Performance Indicator:		
Duplicate RPD:	59.89%	30353541001DUP	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
Duplicate Status vs Numerical Indicator:	Pass		MS/ MSD Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:	Fail***		MS/ MSD Duplicate Status vs RPD:		
% RPD Limit:	36%		% RPD Limit:		

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

06-26-20 121

Comments:

Pace Analytical"

Page 22 of 22

ATTACHMENT 1-2 June 2020 Sampling Event Laboratory Analytical Report



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

June 23, 2020

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

RE: Project: JEC FAL CCR Pace Project No.: 60339924

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on June 12, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network: • Pace Analytical Services - Kansas City

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 FAL CCR Pace Project No.: 60339924

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



SAMPLE SUMMARY

Project: JEC FAL CCR Pace Project No.: 60339924

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60339924001	FAA-03-061120	Water	06/11/20 14:25	06/12/20 17:00
60339924002	FAA-04-061120	Water	06/11/20 13:15	06/12/20 17:00
60339924003	FAA-05-061120	Water	06/11/20 12:05	06/12/20 17:00
60339924004	FAA-06-061120	Water	06/11/20 15:20	06/12/20 17:00
60339924005	DUP-FAL-061120	Water	06/11/20 16:00	06/12/20 17:00



SAMPLE ANALYTE COUNT

Project: JEC FAL CCR Pace Project No.: 60339924

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60339924001	FAA-03-061120	EPA 200.7	TDS	4	PASI-K
		EPA 6010	JDE	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	LRS	1	PASI-K
		EPA 300.0	JWR	1	PASI-K
60339924002	FAA-04-061120	EPA 200.7	TDS	4	PASI-K
		EPA 6010	JDE	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	LRS	1	PASI-K
		EPA 300.0	JWR	1	PASI-K
60339924003	FAA-05-061120	EPA 200.7	TDS	4	PASI-K
		EPA 6010	JDE	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	LRS	1	PASI-K
		EPA 300.0	JWR	1	PASI-K
60339924004	FAA-06-061120	EPA 200.7	TDS	4	PASI-K
		EPA 6010	JDE	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	LRS	1	PASI-K
		EPA 300.0	JWR	1	PASI-K
60339924005	DUP-FAL-061120	EPA 200.7	TDS	4	PASI-K
		EPA 6010	JDE	1	PASI-K
		EPA 200.8	JGP	7	PASI-K
		EPA 245.1	LRS	1	PASI-K
		EPA 300.0	JWR	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project: JEC FAL CCR

Pace Project No.: 60339924

Method: EPA 200.7

Description:200.7 Metals, TotalClient:Evergy Kansas Central, Inc.Date:June 23, 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:



Project: JEC FAL CCR

Pace Project No.: 60339924

Method: EPA 6010

Description:6010 MET ICPClient:Evergy Kansas Central, Inc.Date:June 23, 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:



Project: JEC FAL CCR

Pace Project No.: 60339924

Method: EPA 200.8

Description:200.8 MET ICPMSClient:Evergy Kansas Central, Inc.Date:June 23, 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:



Project: JEC FAL CCR

Pace Project No.: 60339924

Method: EPA 245.1

Description:245.1 MercuryClient:Evergy Kansas Central, Inc.Date:June 23, 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:



Project: JEC FAL CCR Pace Project No.: 60339924

Method:EPA 300.0Description:300.0 IC Anions 28 DaysClient:Evergy Kansas Central, Inc.Date:June 23, 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.



Project: JEC FAL CCR

Pace Project No.: 60339924

Sample: FAA-03-061120	Lab ID: 6033	39924001	Collected: 06/11/2	0 14:28	5 Received: 06	/12/20 17:00 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total			00.7 Preparation Met	hod: El	PA 200.7			
	Pace Analytical	Services -	Kansas City					
Barium, Total Recoverable	0.027	mg/L	0.0050	1	06/22/20 11:28	06/23/20 10:59	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/22/20 11:28	06/23/20 10:59	7440-41-7	
Chromium, Total Recoverable	<0.0050	mg/L	0.0050	1	06/22/20 11:28	06/23/20 10:59	7440-47-3	
Lead, Total Recoverable	<0.010	mg/L	0.010	1	06/22/20 11:28	06/23/20 10:59	7439-92-1	
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	nod: EF	PA 3010			
	Pace Analytical	Services -	Kansas City					
Lithium, Total Recoverable	0.011	mg/L	0.010	1	06/22/20 11:28	06/23/20 11:12	7439-93-2	
200.8 MET ICPMS	Analytical Meth	od: EPA 20	0.8 Preparation Met	hod: El	PA 200.8			
	Pace Analytical	Services -	Kansas City					
Antimony, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:12	7440-36-0	
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:12	7440-38-2	
Cadmium, Total Recoverable	<0.00050	mg/L	0.00050	1	06/19/20 08:50	06/22/20 14:12	7440-43-9	
Cobalt, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:12	7440-48-4	
Molybdenum, Total Recoverable	0.0084	mg/L	0.0010	1		06/22/20 14:12		
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1		06/22/20 14:12		
Thallium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:12	7440-28-0	
245.1 Mercury	Analytical Meth	od: EPA 24	15.1 Preparation Met	hod: El	PA 245.1			
-	Pace Analytical	Services -	Kansas City					
Mercury	<0.20	ug/L	0.20	1	06/19/20 08:03	06/22/20 10:44	7439-97-6	
300.0 IC Anions 28 Days	Analytical Meth	od: EPA 30	0.0					
-	Pace Analytical	Services -	Kansas City					
Fluoride	0.39	mg/L	0.20	1		06/16/20 16:22	16984-48-8	



Project: JEC FAL CCR

Pace Project No.: 60339924

Sample: FAA-04-061120	Lab ID: 6033	9924002	Collected: 06/11/2	0 13:15	5 Received: 06	6/12/20 17:00 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total			00.7 Preparation Met	hod: El	PA 200.7			
	Pace Analytical	Services -	Kansas City					
Barium, Total Recoverable	0.047	mg/L	0.0050	1	06/22/20 11:28	06/23/20 11:06	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/22/20 11:28	06/23/20 11:06	7440-41-7	
Chromium, Total Recoverable	<0.0050	mg/L	0.0050	1	06/22/20 11:28	06/23/20 11:06	7440-47-3	
Lead, Total Recoverable	<0.010	mg/L	0.010	1	06/22/20 11:28	06/23/20 11:06	7439-92-1	
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	nod: EP	A 3010			
	Pace Analytical		•					
Lithium, Total Recoverable	0.016	mg/L	0.010	1	06/22/20 11:28	06/23/20 11:19	7439-93-2	
200.8 MET ICPMS	Analytical Meth	od: EPA 20	0.8 Preparation Met	hod: El	PA 200.8			
	Pace Analytical	Services -	Kansas City					
Antimony, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:19	7440-36-0	
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:19	7440-38-2	
Cadmium, Total Recoverable	<0.00050	mg/L	0.00050	1	06/19/20 08:50	06/22/20 14:19	7440-43-9	
Cobalt, Total Recoverable	0.0015	mg/L	0.0010	1		06/22/20 14:19		
Molybdenum, Total Recoverable	0.0060	mg/L	0.0010	1		06/22/20 14:19		
Selenium, Total Recoverable	0.0010	mg/L	0.0010	1		06/22/20 14:19		
Thallium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:19	7440-28-0	
245.1 Mercury	Analytical Meth	od: EPA 24	15.1 Preparation Met	hod: El	PA 245.1			
	Pace Analytical	Services -	Kansas City					
Mercury	<0.20	ug/L	0.20	1	06/19/20 08:03	06/22/20 10:51	7439-97-6	
300.0 IC Anions 28 Days	Analytical Meth	od: EPA 30	0.0					
-	Pace Analytical	Services -	Kansas City					
Fluoride	0.44	mg/L	0.20	1		06/16/20 16:38	16984-48-8	



Project: JEC FAL CCR

Pace Project No.: 60339924

Sample: FAA-05-061120	Lab ID: 603	39924003	Collected: 06/11/2	0 12:05	Received: 06	6/12/20 17:00 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Met	hod: EPA 20	00.7 Preparation Met	hod: EF	PA 200.7			
	Pace Analytica	al Services -	Kansas City					
Barium, Total Recoverable	<0.0050	mg/L	0.0050	1	06/22/20 11:28	06/23/20 11:09	7440-39-3	
Beryllium, Total Recoverable	0.0011	mg/L	0.0010	1	06/22/20 11:28	06/23/20 11:09	7440-41-7	
Chromium, Total Recoverable	<0.0050	mg/L	0.0050	1	06/22/20 11:28	06/23/20 11:09	7440-47-3	
Lead, Total Recoverable	<0.010	mg/L	0.010	1	06/22/20 11:28	06/23/20 11:09	7439-92-1	
6010 MET ICP	Analytical Met	hod: EPA 60	010 Preparation Meth	nod: EP	A 3010			
	Pace Analytica	al Services -	Kansas City					
Lithium, Total Recoverable	0.14	mg/L	0.010	1	06/22/20 11:28	06/23/20 10:39	7439-93-2	
200.8 MET ICPMS	Analytical Met	hod: EPA 20	0.8 Preparation Met	hod: EF	PA 200.8			
	Pace Analytica	al Services -	Kansas City					
Antimony, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:21	7440-36-0	
Arsenic, Total Recoverable	0.0011	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:21	7440-38-2	
Cadmium, Total Recoverable	<0.00050	mg/L	0.00050	1	06/19/20 08:50	06/22/20 14:21	7440-43-9	
Cobalt, Total Recoverable	0.0033	mg/L	0.0020	2	06/19/20 08:50	06/22/20 14:35	7440-48-4	
Molybdenum, Total Recoverable	0.030	mg/L	0.0010	1		06/22/20 14:21		
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1		06/22/20 14:21		
Thallium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:21	7440-28-0	
245.1 Mercury	Analytical Met	hod: EPA 24	15.1 Preparation Met	hod: EF	PA 245.1			
	Pace Analytica	al Services -	Kansas City					
Mercury	<0.20	ug/L	0.20	1	06/19/20 08:03	06/22/20 10:57	7439-97-6	
300.0 IC Anions 28 Days	Analytical Met	hod: EPA 30	0.0					
-	Pace Analytica	al Services -	Kansas City					
Fluoride	0.59	mg/L	0.20	1		06/16/20 16:53	16984-48-8	



Project: JEC FAL CCR

Pace Project No.: 60339924

Sample: FAA-06-061120	Lab ID: 6033	39924004	Collected: 06/11/2	0 15:20	Received: 06	6/12/20 17:00 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total			00.7 Preparation Met	hod: El	PA 200.7			
	Pace Analytical	Services -	Kansas City					
Barium, Total Recoverable	0.037	mg/L	0.0050	1	06/22/20 11:28	06/23/20 11:16	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1		06/23/20 11:16		
Chromium, Total Recoverable	<0.0050	mg/L	0.0050	1	06/22/20 11:28	06/23/20 11:16	7440-47-3	
Lead, Total Recoverable	<0.010	mg/L	0.010	1	06/22/20 11:28	06/23/20 11:16	7439-92-1	
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	od: EP	A 3010			
	Pace Analytical		•					
Lithium, Total Recoverable	0.013	mg/L	0.010	1	06/22/20 11:28	06/23/20 10:42	7439-93-2	
200.8 MET ICPMS	Analytical Meth	od: EPA 20	0.8 Preparation Met	hod: El	PA 200.8			
	Pace Analytical	Services -	Kansas City					
Antimony, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:23	7440-36-0	
Arsenic, Total Recoverable	0.0034	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:23	7440-38-2	
Cadmium, Total Recoverable	<0.00050	mg/L	0.00050	1	06/19/20 08:50	06/22/20 14:23	7440-43-9	
Cobalt, Total Recoverable	0.0021	mg/L	0.0010	1		06/22/20 14:23		
Molybdenum, Total Recoverable	0.19	mg/L	0.0010	1		06/22/20 14:23		
Selenium, Total Recoverable	0.0010	mg/L	0.0010	1		06/22/20 14:23		
Thallium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:23	7440-28-0	
245.1 Mercury	Analytical Meth	od: EPA 24	15.1 Preparation Met	hod: El	PA 245.1			
	Pace Analytical	Services -	Kansas City					
Mercury	<0.20	ug/L	0.20	1	06/19/20 08:03	06/22/20 11:00	7439-97-6	
300.0 IC Anions 28 Days	Analytical Meth	od: EPA 30	0.0					
	Pace Analytical	Services -	Kansas City					
Fluoride	0.63	mg/L	0.20	1		06/16/20 17:09	16984-48-8	



Project: JEC FAL CCR

Pace Project No.: 60339924

Sample: DUP-FAL-061120	Lab ID: 6033	9924005	Collected: 06/11/2	0 16:00	Received: 06	6/12/20 17:00 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	2		0.7 Preparation Met	hod: EF	PA 200.7			
	Pace Analytical	Services -	Kansas City					
Barium, Total Recoverable	0.049	mg/L	0.0050	1	06/22/20 11:28	06/23/20 11:19	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/22/20 11:28	06/23/20 11:19	7440-41-7	
Chromium, Total Recoverable	<0.0050	mg/L	0.0050	1	06/22/20 11:28	06/23/20 11:19	7440-47-3	
Lead, Total Recoverable	<0.010	mg/L	0.010	1	06/22/20 11:28	06/23/20 11:19	7439-92-1	
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Meth	od: EP	A 3010			
	Pace Analytical	Services -	Kansas City					
Lithium, Total Recoverable	0.014	mg/L	0.010	1	06/22/20 11:28	06/23/20 10:45	7439-93-2	
200.8 MET ICPMS	Analytical Meth	od: EPA 20	0.8 Preparation Met	hod: EF	PA 200.8			
	Pace Analytical	Services -	Kansas City					
Antimony, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:25	7440-36-0	
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:25	7440-38-2	
Cadmium, Total Recoverable	<0.00050	mg/L	0.00050	1	06/19/20 08:50	06/22/20 14:25	7440-43-9	
Cobalt, Total Recoverable	0.0015	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:25	7440-48-4	
Molybdenum, Total Recoverable	0.0060	mg/L	0.0010	1		06/22/20 14:25		
Selenium, Total Recoverable	<0.0010	mg/L	0.0010	1		06/22/20 14:25		
Thallium, Total Recoverable	<0.0010	mg/L	0.0010	1	06/19/20 08:50	06/22/20 14:25	7440-28-0	
245.1 Mercury	Analytical Meth	od: EPA 24	15.1 Preparation Met	hod: EF	PA 245.1			
	Pace Analytical	Services -	Kansas City					
Mercury	<0.20	ug/L	0.20	1	06/19/20 08:03	06/22/20 11:02	7439-97-6	
300.0 IC Anions 28 Days	Analytical Meth	od: EPA 30	0.0					
-	Pace Analytical	Services -	Kansas City					
Fluoride	0.43	mg/L	0.20	1		06/16/20 17:41	16984-48-8	



Project: J	EC FAL CCR											
Pace Project No.: 6	0339924											
QC Batch:	660997		Anal	ysis Metho	d:	EPA 245.1						
QC Batch Method:	EPA 245.1		Anal	ysis Descri	ption:	245.1 Mercu	ıry					
			Labo	oratory:		Pace Analyt	ical Servic	es - Kansa	s City			
Associated Lab Samp	les: 60339924	1001, 6033992400	2, 603399	24003, 603	39924004,	6033992400	05					
METHOD BLANK: 2	679564			Matrix: W	ater							
Associated Lab Samp	les: 60339924	1001, 6033992400	2, 603399	24003, 603	39924004,	6033992400	05					
			Bla	nk	Reporting							
Parame	ter	Units	Res		Limit	Analy	/zed	Qualifier	s			
Mercury		ug/L		<0.20	0.2	0 06/22/20	0 10:39					
LABORATORY CONT	ROL SAMPLE:	2679565										
			Spike	LC	S	LCS	% R	ec				
Parame	ter	Units	Conc.	Res	sult	% Rec	Limi	ts (Qualifiers			
Mercury		ug/L		5	4.8	96	6 8	85-115				
MATRIX SPIKE & MA	TRIX SPIKE DUI	PLICATE: 2679			2679567	,						
		000000000000	MS	MSD					04 D			
Parameter	Units	60339924001	Spike Conc.	Spike Conc.	MS Deput	MSD	MS % Dee	MSD % Rec	% Rec Limits	RPD	Max	Qual
					Result	Result	% Rec				RPD	Quai
Mercury	ug/L	<0.20	5	5	4.7	4.6	94	91	70-130	3	20	
MATRIX SPIKE SAMF		2679568										
	LL.	2019300	60.330	9927005	Spike	MS		MS	% Rec			
Parame	ter	Units		esult	Conc.	Result		6 Rec	Limits		Qualif	iers
Mercury		ug/L		<0.20	5		3.7	74		-130		

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



Project: Pace Project No.:	JEC FAL 60339924													
QC Batch:	661348			Ana	lysis Met	hod:	EF	PA 200.7						
QC Batch Method:	EPA 20	0.7		Ana	lysis Des	cription:	20	0.7 Metals,	Total					
				Lab	oratory:		Pa	ace Analytic	al Servic	es - Kansa	as City			
Associated Lab Sam	nples: 6	033992400	01, 6033992400	2, 603399	24003, 6	0339924004	, 60	0339924005	5		-			
METHOD BLANK:	2681419				Matrix:	Water								
Associated Lab Sam	nples: 6	03399240	01, 6033992400	2, 603399	24003, 6	0339924004	, 60	0339924005	5					
				Bla	ink	Reporting								
Param	neter		Units	Res	sult	Limit		Analyz	ed	Qualifie	rs			
Barium			mg/L		<0.0050	0.00	50	06/23/20	10.51					
Beryllium			mg/L		<0.0030	0.00		06/23/20						
Chromium			mg/L		<0.0050	0.00		06/23/20						
Lead			mg/L		<0.010	0.0		06/23/20						
			U.				-		-					
LABORATORY CON	ITROL SA	MPLE: 2	2681420											
				Spike		LCS		LCS	% R	ес				
Param	neter		Units	Conc	. F	Result	c,	% Rec	Lim	its	Qualifiers			
Barium			mg/L		1	1.0		102		85-115		_		
Beryllium			mg/L		1	1.0		102		85-115				
Chromium			mg/L		1	1.0		104		85-115				
Lead			mg/L		1	1.1		108		85-115				
MATRIX SPIKE & M	ATRIX SP		ICATE: 2681	421		268142	22							
				MS	MSD	200112								
			60339924001	Spike	Spike	MS		MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result		Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Barium		mg/L	0.027	1		1 1.0		0.98	98		5 70-130	4	20	
Beryllium		mg/L	<0.0010	1		1 0.98		0.95	98	95		4		
Chromium		mg/L	<0.0050	1		1 1.0		0.96	100	96		4	-	
Lead		mg/L	<0.010	1		1 1.0)	0.96	101	96	5 70-130	4	20	
MATRIX SPIKE SAM	/PLE:		2681423											
		-		6033	9927006	Spike		MS		MS	% Rec			
Param	neter		Units		esult	Conc.		Result	%	6 Rec	Limits		Qualif	iers
Barium			mg/L		0.08	37 1	1	1	1.1	99	70	-130		
Beryllium			mg/L		<0.001	0 1	1	1	0.1	99	70	-130		
Chromium			mg/L		<0.005	50 1	1	1	1.0	101	70	-130		
Lead			mg/L		<0.01	0 1	1	1	1.0	103	70	-130		

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



Project:	JEC FA	LCCR											
Pace Project No .:	603399	24											
QC Batch:	66109	99		Anal	ysis Meth	od:	EPA 200.8						
QC Batch Method:	EPA 2				ysis Desc		200.8 MET						
	21712				Laboratory: Pace Analytical Services - Ka								
Associated Lab Sar	mples:	6033992400	1, 6033992400		,		-			o ony			
METHOD BLANK:	268017	'8			Matrix: N	Water							
Associated Lab Sar	mples:	6033992400	1, 6033992400	2, 6033992	24003, 60	339924004,	603399240	05					
				Bla	nk	Reporting							
Parar	neter		Units	Res	sult	Limit	Analy	yzed	Qualifier	s			
Antimony			mg/L	<	0.0010	0.001	0 06/22/2	0 14:08					
Arsenic			mg/L	<	0.0010	0.001	0 06/22/2	0 14:08					
Cadmium			mg/L	<0	.00050	0.0005							
Cobalt			mg/L		0.0010	0.001							
Molybdenum			mg/L		0.0010	0.001							
Selenium			mg/L		0.0010	0.001							
Thallium			mg/L	<	0.0010	0.001	0 06/22/2	0 14:08					
LABORATORY CO	NTROLS	SAMPLE: 2	680179										
				Spike		CS	LCS	% F					
Parar	neter		Units	Conc.	Re	esult	% Rec	Lin	its	Qualifiers	_		
Antimony			mg/L	0.0	04	0.040	9	9	85-115				
Arsenic			mg/L	0.0	04	0.040	10	0	85-115				
Cadmium			mg/L	0.0		0.039	9		85-115				
Cobalt			mg/L	0.0		0.041	10		85-115				
Molybdenum			mg/L	0.0		0.042 0.039	10-		85-115				
Selenium Thallium			mg/L mg/L	0.0 0.0		0.039	9) 9)		85-115 85-115				
maillan			ilig/L	0.0	74	0.040	5	5	00-110				
MATRIX SPIKE & N	ATRIX S	SPIKE DUPLI	CATE: 2680	180		2680181							
				MS	MSD					_			
D (60339924001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	•
Paramete	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
Antimony		mg/L	<0.0010	0.04	0.04		0.039	97			0	-	
Arsenic		mg/L	< 0.0010	0.04	0.04		0.041	100		70-130	1	-	
Cadmium		mg/L	<0.00050	0.04	0.04		0.037	92			0		
Cobalt Molybdenum		mg/L mg/L	<0.0010 0.0084	0.04 0.04	0.04 0.04		0.039 0.052	96 109			1 1	-	
Selenium		mg/L	<0.0084	0.04	0.04		0.032	92			1		
Thallium		mg/L	<0.0010	0.04	0.04		0.037	92			1		
		···· g , -		0.01	0.01	0.001	5.007	51	50				
MATRIX SPIKE SA	MPLE:	2	680182										
Derer	notor		Linita		9927006	Spike	MS Posult	(MS V Roc	% Rec		Qualif	iore
Parar	netel		Units	K	esult	Conc.	Result		% Rec	Limits		Qualli	1612
Antimony			mg/L		< 0.0010			039	96		-130		
Arsenic			mg/L		0.0016	§ 0.04	0.	.041	100	70	-130		

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REPORT OF LABORATORY ANALYSIS

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Project: JEC FAL CCR Pace Project No.: 60339924

MATRIX SPIKE SAMPLE:	2680182	60339927006	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Cadmium	mg/L	<0.00050	0.04	0.037	92	70-130	
Cobalt	mg/L	0.0010	0.04	0.039	95	70-130	
Molybdenum	mg/L	0.0097	0.04	0.052	105	70-130	
Selenium	mg/L	<0.0010	0.04	0.038	94	70-130	
Thallium	mg/L	<0.0010	0.04	0.037	93	70-130	

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



Project:	JEC FAL CCR											
Pace Project No.: 6	60339924											
QC Batch:	661388		Analy	sis Metho	d:	EPA 6010						
QC Batch Method:	EPA 3010		Analy	sis Descri	ption:	6010 MET						
			Labo	ratory:		Pace Analyti	cal Servic	es - Kansa	s City			
Associated Lab Samp	oles: 60339924	001, 6033992400	2, 6033992	4003, 603	39924004,	6033992400)5					
METHOD BLANK: 2	2681509			Matrix: W	ater							
Associated Lab Samp	oles: 60339924	001, 6033992400	2, 6033992	4003, 603	39924004,	6033992400)5					
			Blar	nk	Reporting							
Parame	eter	Units	Res	ult	Limit	Analy	zed	Qualifier	s			
Lithium		mg/L		<0.010	0.01	0 06/23/20	10:23					
LABORATORY CON	TROL SAMPLE:	2681510	Spike	LC	s	LCS	% R	ec				
Parame	eter	Units	Conc.	Res	sult	% Rec	Limi	ts	Qualifiers			
Lithium		mg/L		1	0.95	95	5 8	30-120				
			511		2681512	2						
MATRIX SPIKE & MA	TRIX SPIKE DUP	LICATE: 2681	• • •	MOD								
MATRIX SPIKE & MA	TRIX SPIKE DUP		MS	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
MATRIX SPIKE & MA Parameter	TRIX SPIKE DUP Units	60339924001 Result	• • •	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual

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.



Project:	JEC FAL CCR											
Pace Project No.:	60339924											
QC Batch:	660311		Analy	sis Method	l :t	EPA 300.0						
QC Batch Method:	EPA 300.0		Analy	/sis Descrip	otion:	300.0 IC Ani	ons					
			Labo	ratory:	I	Pace Analyt	cal Servic	es - Kansa	is City			
Associated Lab San	nples: 60339924	001, 6033992400	02, 6033992	4003, 603	39924004,	6033992400)5					
METHOD BLANK:	2677315			Matrix: Wa	ater							
Associated Lab San	nples: 60339924	001, 6033992400	02, 6033992	4003, 6033	39924004,	6033992400)5					
			Blar		Reporting							
Paran	neter	Units	Res	ult	Limit	_ Analy	zed	Qualifier	'S			
Fluoride		mg/L		<0.20	0.2	0 06/16/20	09:16					
METHOD BLANK:	2679415			Matrix: Wa	ater							
Associated Lab San	nples: 60339924	001, 6033992400	02, 6033992	4003, 6033	39924004,	6033992400)5					
			Blar		Reporting							
Paran	neter	Units	Res	ult	Limit	Analy	zed	Qualifier	'S			
Fluoride		mg/L		<0.20	0.2	0 06/17/20	09:31					
LABORATORY CON	NTROL SAMPLE:	2677316										
			Spike	LC	S	LCS	% R	lec				
Paran	neter	Units	Conc.	Res	ult	% Rec	Lim	its	Qualifiers			
Fluoride		mg/L	2.	5	2.3	92	2	90-110				
LABORATORY COM	NTROL SAMPLE:	2679416										
			Spike	LC		LCS	% R					
Paran	neter	Units	Conc.	Res	ult	% Rec	Lim	its	Qualifiers	_		
Fluoride		mg/L	2.	5	2.3	92	2	90-110				
MATRIX SPIKE & M	IATRIX SPIKE DUF	PLICATE: 2677	317		2677318	;						
			MS	MSD								
Parameter	. Units	60339973004 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L		2.5	2.5	2.5	2.4	93			4		
MATRIX SPIKE SAI		2677319										
MATRIA OF INE OAI	VII ĹĹ.	2011313	60339	924004	Spike	MS		MS	% Rec	2		
Paran	neter	Units		sult	Conc.	Result	9	% Rec	Limits		Qualif	fiers

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: JEC FAL CCR Pace Project No.: 60339924

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	JEC FAL CCR
Pace Project No .:	60339924

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60339924001	FAA-03-061120	EPA 200.7	661348	EPA 200.7	661465
60339924002	FAA-04-061120	EPA 200.7	661348	EPA 200.7	661465
60339924003	FAA-05-061120	EPA 200.7	661348	EPA 200.7	661465
60339924004	FAA-06-061120	EPA 200.7	661348	EPA 200.7	661465
60339924005	DUP-FAL-061120	EPA 200.7	661348	EPA 200.7	661465
60339924001	FAA-03-061120	EPA 3010	661388	EPA 6010	661464
60339924002	FAA-04-061120	EPA 3010	661388	EPA 6010	661464
60339924003	FAA-05-061120	EPA 3010	661388	EPA 6010	661464
60339924004	FAA-06-061120	EPA 3010	661388	EPA 6010	661464
60339924005	DUP-FAL-061120	EPA 3010	661388	EPA 6010	661464
60339924001	FAA-03-061120	EPA 200.8	661099	EPA 200.8	661164
60339924002	FAA-04-061120	EPA 200.8	661099	EPA 200.8	661164
60339924003	FAA-05-061120	EPA 200.8	661099	EPA 200.8	661164
60339924004	FAA-06-061120	EPA 200.8	661099	EPA 200.8	661164
60339924005	DUP-FAL-061120	EPA 200.8	661099	EPA 200.8	661164
60339924001	FAA-03-061120	EPA 245.1	660997	EPA 245.1	661118
60339924002	FAA-04-061120	EPA 245.1	660997	EPA 245.1	661118
60339924003	FAA-05-061120	EPA 245.1	660997	EPA 245.1	661118
60339924004	FAA-06-061120	EPA 245.1	660997	EPA 245.1	661118
60339924005	DUP-FAL-061120	EPA 245.1	660997	EPA 245.1	661118
60339924001	FAA-03-061120	EPA 300.0	660311		
60339924002	FAA-04-061120	EPA 300.0	660311		
60339924003	FAA-05-061120	EPA 300.0	660311		
60339924004	FAA-06-061120	EPA 300.0	660311		
60339924005	DUP-FAL-061120	EPA 300.0	660311		



Sample Condition Upon Receipt

WO#:60339924

Client Name: Everay Kansas		
	EX 🗆 🛛 ECI 🗆	Pace 🗆 🛛 Xroads 🗆 Client 💋 🛛 Other 🗆
Tracking #: Pace	Shipping Label Use	d? Yes 🗆 No 🗗
Custody Seal on Cooler/Box Present: Yes 🗆 🛛 No 🗗	Seals intact: Yes [No 🗗
Packing Material: Bubble Wrap 🗆 Bubble Bags 🗆	Foam 🗆	None 🗆 Other 🖬 ZPI 4
Thermometer Used: <u>T-301</u> Type of	lce: (Wet) Blue No	
Cooler Temperature (°C): As-read 2.3 Corr. Facto	r -0.4 Correc	ted 1.9 Date and initials of person examining contents: 6.12.20
Temperature should be above freezing to 6°C		
Chain of Custody present:	ØYes □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 ØNo □N/A	
Rush Turn Around Time requested:	HS C.12.2020	2 Day -7
Sufficient volume:		
Correct containers used:	₽yes □No □N/A	
Pace containers used:	ØYes □No □N/A	
Containers intact:	ØYes □No □N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	□Yes □No ☎N/A	
Filtered volume received for dissolved tests?	□Yes □No IN/A	
Sample labels match COC: Date / time / ID / analyses	Pres Ano DN/A	Containers have the collection date
Samples conlain multiple phases? Matrix: WT	□Yes ØNo □N/A	6/8/20, but it looks like an "11" has
Containers requiring pH preservation in compliance?	ØYes □No □N/A	List sample IDs, volumes, lot #'s of preservative and the
(HNO₃, H₂SO₄, HCI<2; NaOH>9 Sulfide, NaOH>10 Cyanide)	2444	date/time added. been written over the top of
(Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# 62 Cyanide water sample checks:	3296	most "8"
Lead acetale 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 ØN/A	
Samples from USDA Regulated Area: State:	□Yes □No 🗹N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	□Yes □No ØN/A	
Client Notification/ Resolution: Copy COC to		Field Data Required? Y / N
Person Contacted: Date/Tir	me:	
Comments/ Resolution:		

Project Manager Review:

Date:



CHAIN-OF-CUSTODY / Analytical Request Document

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

-	Client Information:	Section B Required P	Project	_	_					Invoid	cion C	ormati	_		D												Pa	ige:	1	of	1	
Company	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Report To:								Atten				unts	-								_								_	
Address:	Jeffrey Energy Center (JEC)	Copy To:	Jare	d Mo	prrison, Ja	ake Hum	phrey, Lau	ura Hine	5	Com	bany N	Name:	: E'	VER	GY K	CANS	SAS	CEN	ITR/	AL, I	ING	REG	ULA	TOR	Y AG	ENC	1	1				
	818 Kansas Ave, Topeka, KS 66612		JD S	Schle	gel, Bran	don Will	, Sarah Ha	azelwood	ł	Addre	ess:	S	See S	Secti	on A							Г	NPD	S	Г	GROU	ND W	VATER		DRINK	ING \	NATER
Email To	melissa.michels@evergy.com	Purchase C	Order N	10.:	WSTR-1	0JEC47	747			Pace Refere	Quote ence:											Г	UST		Г	RCRA			Г	OTHER	2	
Phone:	785-575-8113 Fax:	Project Nar	ne:	JEC	FAL CC	R					Project	t J	lasm	ine A	Amer	rin, 9	13-5	63-1	403			Site	Loca	tion		140						
Request	ed Due Date/TAT: 7 day	Project Nur	nber:	_							Profile	#: g	657	, 2									ST	TE:	-	KS		- 🖉				
			_						_								T	F	Requ	est	ed A	naiy	sis F	ilter	ed ()	(/N)						
	Section D Valld Matrix C	odes	(jue	Â					Τ	Γ	Τ						TN /A	Γ				Т					\square					
	Required Client Information MATRIX DRINKING WATER	CODE DW	codes to left)	C=COMP)		COLL	ECTED		z		L	P	rese	rvati	ves	-1-	7	⊢		-	+	-+-		-		_	⊢₿					
	WATER WASTE WATER PRODUCT SOLUSOLID OIL OIL (A-Z, 0-9 / ,-) OTHER	WT WW P SL OL WP AR OT TS	(see valid	(G=GRAB	COMP STA		COMPO: END/GF	SITE RAB	TEMP AT COLLECTION	IAINERS	ed						s Test	al Metals*	200.8 Total Metals**	Total Metals***	cury							Chlorine (Y/N)				
ITEM #	Sample IDs MUST BE UNIQUE TISSUE	15	MATRIX CODE	SAMPLE TYPE	DATE	TIME	DATE	TIME	SAMPLE TE	# OF CONTAINERS	Unpreserv	H ₂ SO ₄	HCI HCI	NaOH	Na ₂ S ₂ O ₃	Other	4 Analysis Test	200.7 Total	200.8 Tots	6010 Tota	245.1 Mercury	300: F						Residual C	Pace		33 ⁽⁾	月24 / Lab I.D.
1	FAA-03-061120		WT	G	¥	19 8	06/11/20	14:25		2	1		1				1	X	X	x	X	x							_			
2	FAA-04-061120		WΤ	G			06/11/20	13:15		2	1		1			_		X	X	х	x	x		_								
3	FAA-05-061120		WΤ	G		100	06/11/20	12:05		2	1		1					×	X	х	x	x		-				-				
4	FAA-06-061120		WT	G			06/11/20	15:20	-	2	1		1			_		×	X	х		×	_	-			$\left \right $	+				
5	DUP-FAL-061120		WТ	G			06/11/20	16:00	-	2	1		1				-	X	X	X	X	x	_	-	\vdash	_	+	+				
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6010 To	tal Metals***: Li	1								1					<u> </u>																	
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Page 24 of :							PRINT Nam		-	_	on/R	Fra	inks	2.	1		,	D	ATE	Sign	ed						Temp in °C		Received on Ice (Y/N)	Custody Sealed Cooler	(Samples Intact (Y/N)
of 24							SIGNATUR	E of SAM	PLER	4	las		rk	- 1	Yn	2	In		/M/D					5/12/	20				Ľ	Š		S



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

July 08, 2020

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

RE: Project: JEC FAL CCR Pace Project No.: 60340258

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on June 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 - 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





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

CERTIFICATIONS

Project: JEC FAL CCR Pace Project No.: 60340258

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



SAMPLE SUMMARY

Project: JEC FAL CCR Pace Project No.: 60340258

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60340258001	FAA-03-061120	Water	06/11/20 14:25	06/16/20 09:40
60340258002	FAA-04-061120	Water	06/11/20 13:15	06/16/20 09:40
60340258003	FAA-05-061120	Water	06/11/20 12:05	06/16/20 09:40
60340258004	FAA-06-061120	Water	06/11/20 15:20	06/16/20 09:40
60340258005	DUP-FAL-061120	Water	06/11/20 16:00	06/16/20 09:40



SAMPLE ANALYTE COUNT

Project:JEC FAL CCRPace Project No.:60340258

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60340258001	FAA-03-061120	EPA 903.1		1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60340258002	FAA-04-061120	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60340258003	FAA-05-061120	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60340258004	FAA-06-061120	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60340258005	DUP-FAL-061120	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg



Project: JEC FAL CCR

Pace Project No.: 60340258

Method: EPA 903.1

Description:903.1 Radium 226Client:Evergy Kansas Central, Inc.Date:July 08, 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:



Project: JEC FAL CCR

Pace Project No.: 60340258

Method: EPA 904.0

Description:904.0 Radium 228Client:Evergy Kansas Central, Inc.Date:July 08, 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:



Project: JEC FAL CCR

Pace Project No.: 60340258

Method: Total Radium Calculation

Description:Total Radium 228+226Client:Evergy Kansas Central, Inc.Date:July 08, 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.



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: JEC FAL CCR

Pace Project No.: 60340258

Sample: FAA-03-061120 PWS:	Lab ID: 6034025 Site ID:	8001 Collected: 06/11/20 14:25 Sample Type:	Received:	06/16/20 09:40	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	vices - Greensburg				
Radium-226	EPA 903.1	0.184 ± 0.434 (0.803) C:NA T:93%	pCi/L	07/02/20 11:48	3 13982-63-3	
	Pace Analytical Ser	vices - Greensburg				
Radium-228	EPA 904.0	0.160 ± 0.510 (1.14) C:69% T:75%	pCi/L	07/02/20 14:32	2 15262-20-1	
	Pace Analytical Ser	vices - Greensburg				
Total Radium	Total Radium Calculation	0.344 ± 0.670 (1.14)	pCi/L	07/06/20 11:00) 7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: JEC FAL CCR

Pace Project No.: 60340258

Sample: FAA-04-061120 PWS:	Lab ID: 6034025 Site ID:	8002 Collected: 06/11/20 13:15 Sample Type:	Received:	06/16/20 09:40	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	vices - Greensburg				
Radium-226	EPA 903.1	0.188 ± 0.536 (0.995) C:NA T:87%	pCi/L	07/02/20 11:48	3 13982-63-3	
	Pace Analytical Ser	vices - Greensburg				
Radium-228	EPA 904.0	0.341 ± 0.498 (1.07) C:71% T:74%	pCi/L	07/02/20 14:32	2 15262-20-1	
	Pace Analytical Ser	vices - Greensburg				
Total Radium	Total Radium Calculation	0.529 ± 0.732 (1.07)	pCi/L	07/06/20 11:00	0 7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: JEC FAL CCR

Pace Project No.: 60340258

Sample: FAA-05-061120 PWS:	Lab ID: 603402 Site ID:	58003 Collected: 06/11/20 12:05 Sample Type:	Received:	06/16/20 09:40	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Se	ervices - Greensburg				
Radium-226	EPA 903.1	0.741 ± 0.622 (0.889) C:NA T:82%	pCi/L	07/02/20 11:48	3 13982-63-3	
	Pace Analytical Se	ervices - Greensburg				
Radium-228	EPA 904.0	0.371 ± 0.506 (1.09) C:66% T:84%	pCi/L	07/02/20 14:3	2 15262-20-1	
	Pace Analytical Se	ervices - Greensburg				
Total Radium	Total Radium Calculation	1.11 ± 0.802 (1.09)	pCi/L	07/06/20 11:00	0 7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: JEC FAL CCR

Pace Project No.: 60340258

Sample: FAA-06-061120 PWS:	Lab ID: 603402 Site ID:	58004 Collected: 06/11/20 15:20 Sample Type:	Received:	06/16/20 09:40	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Se	rvices - Greensburg				
Radium-226	EPA 903.1	-0.236 ± 0.285 (0.774) C:NA T:95%	pCi/L	07/02/20 11:48	3 13982-63-3	
	Pace Analytical Se	rvices - Greensburg				
Radium-228	EPA 904.0	0.580 ± 0.689 (1.46) C:65% T:66%	pCi/L	07/02/20 14:3	2 15262-20-1	
	Pace Analytical Se	rvices - Greensburg				
Total Radium	Total Radium Calculation	0.580 ± 0.746 (1.46)	pCi/L	07/06/20 11:00	0 7440-14-4	



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: JEC FAL CCR

Pace Project No.: 60340258

Sample: DUP-FAL-061120 PWS:	Lab ID: 60340258 Site ID:	Collected: 06/11/20 16:00 Sample Type:	Received:	06/16/20 09:40	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Serv	vices - Greensburg				
Radium-226	EPA 903.1	0.534 ± 0.483 (0.712) C:NA T:92%	pCi/L	07/02/20 11:48	3 13982-63-3	
	Pace Analytical Serv	vices - Greensburg				
Radium-228	EPA 904.0	-0.254 ± 0.384 (0.958) C:66% T:75%	pCi/L	07/02/20 14:32	2 15262-20-1	
	Pace Analytical Serv	vices - Greensburg				
Total Radium	Total Radium Calculation	0.534 ± 0.617 (0.958)	pCi/L	07/06/20 11:00	0 7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project:	JEC FAL CCR					
Pace Project No.:	60340258					
QC Batch:	401500	Analysis Method:	EPA 904.0			
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 22	8		
		Laboratory:	Pace Analytical S	ervices - Greensbur	g	
Associated Lab Sa	mples: 60340258001, 60340258	002, 60340258003, 6034025800	4, 60340258005			
METHOD BLANK:	1943788	Matrix: Water				
Associated Lab Sa	mples: 60340258001, 60340258	002, 60340258003, 6034025800	4, 60340258005			
Para	meter Act :	± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers	
Radium-228	0.370 ± 0.360	(0.736) C:68% T:90%	pCi/L	07/02/20 14:31		

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.



QUALITY CONTROL - RADIOCHEMISTRY

Project:	JEC FAL CCR				
Pace Project No.:	60340258				
QC Batch:	401499	Analysis Method:	EPA 903.1		
QC Batch Method	: EPA 903.1	Analysis Description:	903.1 Radium-2	226	
		Laboratory:	Pace Analytical	Services - Greensbur	g
Associated Lab Sa	amples: 6034025	8001, 60340258002, 60340258003, 603402580	004, 60340258005		
METHOD BLANK	1943787	Matrix: Water			
Associated Lab Sa	amples: 6034025	8001, 60340258002, 60340258003, 603402580	004, 60340258005		
Para	ameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226		-0.0979 ± 0.333 (0.735) C:NA T:89%	pCi/L	07/02/20 11:48	

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.



QUALIFIERS

Project: JEC FAL CCR Pace Project No.: 60340258

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	JEC FAL CCR
Pace Project No .:	60340258

ab ID.	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
0340258001	FAA-03-061120	EPA 903.1	401499		
0340258002	FAA-04-061120	EPA 903.1	401499		
0340258003	FAA-05-061120	EPA 903.1	401499		
0340258004	FAA-06-061120	EPA 903.1	401499		
0340258005	DUP-FAL-061120	EPA 903.1	401499		
0340258001	FAA-03-061120	EPA 904.0	401500		
0340258002	FAA-04-061120	EPA 904.0	401500		
0340258003	FAA-05-061120	EPA 904.0	401500		
0340258004	FAA-06-061120	EPA 904.0	401500		
0340258005	DUP-FAL-061120	EPA 904.0	401500		
0340258001	FAA-03-061120	Total Radium Calculation	403763		
0340258002	FAA-04-061120	Total Radium Calculation	403763		
0340258003	FAA-05-061120	Total Radium Calculation	403763		
0340258004	FAA-06-061120	Total Radium Calculation	403763		
0340258005	DUP-FAL-061120	Total Radium Calculation	403763		



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section Require	A d Client Information:	Section E Required		t Infon	nation:					Invoi	tion C ce Infor	matior	1:														Page	× 1	of	1
Company		Report To:	Meli	issa I	Vichels						ntion:				ayab															
Address	Jeffrey Energy Center (JEC)	Copy To;	Jare	ed Mo	orrison, Ja	ake Hum	phrey, Lau	ura Hines	3	Com	pany N	ame;	EVE	ERG	Y KA	NSA	SC	ENT	RAL	, INC	REG	ULA	TOR	YA	GEN	CY	y. Serve	end 19	hayy i se s	e ga ga ang ang a
	818 Kansas Ave, Topeka, KS 66612		JD 5	Schle	gel, Bran	don Will,	Sarah Ha	azelwood	l	Addr	'ess;		SEE	SE	стіс	NA					ন	NPD	ES	Γ	GR		D WA	TER	DRINKIN	G WATER
Email To	melissa.michels@evergy.com	Purchase (Order I	No.:	WSTR-1	0JEC47	747				Quote rence;										Г	UST		\square	RCI	RA		Ļ	OTHER	·····
Phone:	(785) 575-8113 Fax:	Project Na	me:	JEC	FAL CC	R					Project	Ja	smin	e An	nerin	, 913	3-56	3-14)3		Site	Loc	ation	Γ						
Request	ed Due Date/TAT: 15 Day	Project Nu	mber:								Profile #	96	57, 2	2							1	ST	ATE:			KS				
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	Required Client Information MATRIX DRINKING WATER	CODE DW	es to	C=COMP)		COLL	ECTED		z			Pre	serv	ative	es S		5							-			_	<u>11/11/201/10</u> 1		
	WATER WASTE WATER PRODUCT SOIL/SOLID OIL	WT WW P SL OL	(see valid codes to left)	(G=GRAB C=	COMP(STAI		COMPOS END/GR	SITE RAB	AT COLLECTION	s							-										Residual Chlorine (Y/N)			
		WP AR	E C						AT C	# OF CONTAINERS							Test		6								orine			
	(A-Z, 0-9 / ,-) OTHER Sample IDs MUST BE UNIQUE TISSUE	OT TS	8	ΥPE					TEMP	Į	Sed						<u></u>	226									15			
#			КX	ш.					Ш	8	lese	5 5		Ŧ		5	ak	ģ s	E E								ie ie			
ITEM #			MATRIX CODE	SAMPLE TYPE	DATE	TIME	DATE	TIME	SAMPLE '	۳ 4		HNO ₃	Ŷ	NaOH Na S-O-	Met	Other	4 Analysis	Radium-226	Total Radium								Res	Pac	e Project I	No./ Lab I.D.
	FAA-03-061120		wτ		-	-	06/11/20	14:25		2		2		-	1		-	x :	- / /								╈			
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3	FAA-05-061120		wт	1	-	-	06/11/20	12:05		2		2						x ;	< >	(
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Chain of Custody Filled Out 2. Chain of Custody Relinquished: 3. Sampler Name & Signature on CQC: 4. Sample Labels match CQC: 4. Sample Labels match CQC: 5. -includes date/lime/ID Matrix: 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: 10. -Pace Containers Used: 11. 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 meet method preservation requirements. Initial when MW Date/time of preservation requirements. 17. The Blank Custody Seals Present 18. The Blank Custody Seals Present 18. The Blank Custody Seals Present Initial when MW Date: Date:	Pittsburgh Lab Sample Condit	tion l	Jpor	Re	ceipt	
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Comments: Yes No Ni/A Date and hittists of person scampting contents: Chain of Custody Present: 1. Chain of Custody Present: 1. Chain of Custody Present: 2. Chain of Custody Present: 3. Sampler Name & Signature on COC: 4. Sampler Name & Signature on COC: 4. Samples Antweld Within Hold Time: 5. -Includes date/time/ID Matrix: Samples Antweld Within Hold Time: 6. Short Hold Time Analysis (<72hr remaining):	Cooler Temperature Observed Temp		°C	Corre	ection Factor:	°C Final Temp: °C
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Sampler Name & Signature on COC: 4. Sample Labels match COC: 5. -Includes date/lime/D Matrix Samples Arrived within Hold Time: 6. Short Hold Time Analysis (<72hr remaining):		\leftarrow	<u> </u>			
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requirements.	Non-aqueous matrix	Radon,	·		•	· · · · · · · · · · · · · · · · · · ·
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Trip Blank Present: 18. Trip Blank Custody Seals Present Initial when M	Headspace in VOA Vials (>6mm):			/	17.	
Trip Blank Custody Seals Present Initial when ML Date: Date: Date: Client Notification/ Resolution:			/		18.	
Rad Samples Screened < 0.5 mrem/hr	•					· · · .
Person Contacted: Date/Time: Contacted By: Comments/ Resolution:	Rad Samples Screened < 0.5 mrem/hr	1	-		Initial when MV completed:	Date: 0-16-20
Comments/ Resolution:						
					Fime:	Gontacted By:
	Comments/ Resolution:					•

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.

PACE Analytical Services Ra-226 Analysis

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

www.pacelabs.com Test:	Ra-226		Anaryst must wantuary Enter Air Fleios Highlighted h	T Tellow.	
Analyst:	MK1		Sample Matrix Spike Control Assessment	MS/MSD 1	M\$/M\$D 2
Date:	6/25/2020		Sample Collection Date:	6/16/2020	
Batch ID:	54714		Sample I.D.	35556724001	
Matrix:	DW		Sample MS I.D.	35556724001MS	f len e tittet
		_	Sample MSD I.D.	e server av Al	
fethod Blank Assessment		1	Spike I.D.:	18-039	
MB Sample ID	1943787		MS/MSD Decay Corrected Spike Concentration (pCi/mL):	31.429	
MB concentration:	-0.098		Spike Volume Used in MS (mL):	0.20	
M/B Counting Uncertainty:	0.332		Spike Volume Used in MSD (mL):		
MB MDC:	0.735		MS Aliquot (L, g, F):	0.656	
MB Numerical Performance Indicator:	-0.58		MS Target Conc.(pCi/L, g, F):	9.581	
MB Status vs Numerical Indicator:	N/A		MSD Aliquot (L, g, F):		
MB Status vs. MDC:	Pass		MSD Target Conc. (pCi/L, g, F):		
		-	MS Spike Uncertainty (calculated):		
aboratory Control Sample Assessment	LCSD (Y or N)?	Ν	MSD Spike Uncertainty (calculated):		
	LCS54714	LCSD54714	Sample Result:	0.797	
Count Date:	7/2/2020		Sample Result Counting Uncertainty (pCi/L, g, F):	0.524	
Spike I.D.:	18-039		Sample Matrix Spike Result:	12.211	
Spike Concentration (pCi/mL):	31.428		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	1.662	
Volume Used (mL):	0.10	a selecter a surel	Sample Matrix Spike Duplicate Result:		
Aliquot Volume (L, g, F):	0.651	1	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Target Conc. (pCi/L, g, F):	4.826		MS Numerical Performance Indicator:	1.996	
Uncertainty (Calculated):	0.227		MSD Numerical Performance Indicator:		
Result (pCi/L, g, F):			MS Percent Recovery:	119.13%	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):			MSD Percent Recovery:		
Numerical Performance Indicator:	0.89		MS Status vs Numerical Indicator:	N/A	
Percent Recovery:	110.15%		MSD Status vs Numerical Indicator:		
Status vs Numerical Indicator:	N/A	1	MS Status vs Recovery:	Pass	
Status vs Recovery:	Pass		MSD Status vs Recovery:		
Upper % Recovery Limits:	135%		MS/MSD Upper % Recovery Limits:	136%	
Lower % Recovery Limits:	73%		MS/MSD Lower % Recovery Limits:	71%	
uplicate Sample Assessment			Matrix Collection Collection Consultants		
ruplicate painple Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
0		1			

Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Duplicate Sample Assessment Sample I.D.: Duplicate Sample I.D. Sample Result (pCi/L, g, F): Sample Result Counting Uncertainty (pCi/L, g, F): Sample Duplicate Result (pCi/L, g, F): Sample and/or duplicate results below RL? Duplicate Numerical Performance Indicator:	0.287 0.405 0.517 0.507 See Below ##	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	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:		
Duplicate RPD:		35556720001DUP		1	
Duplicate Status vs Numerical Indicator:			MS/ MSD Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD: % RPD Limit:			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.

NH

C7pL

Comments:

Pace Analytical

Batch must be re-prepped due to unacceptable precision. ol-f-L

Ra-226 NELAC QC

Printed: 7/2/2020 12:57 PM

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

www.pacelabs.com Test:	Ra-228		Analyst Must Manually Enter All Fields Highlighted II	T Yellow.	
Analyst:	VAL		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:	6/26/2020		Sample Matrix Spike Control Assessment Sample Collection Date:		MS/MSD Z
Worklist:	54715			1	
Matrix:	WT		Sample I.D. Sample MS I.D.	30368472001 30368472001MS	
			Sample MSD I.D.	00000412001000	
Method Blank Assessment		1	Spike I.D.:	19-057	
MB Sample ID	1943788		MS/MSD Decay Corrected Spike Concentration (pCi/mL);	33.774	
MB concentration:	0.370		Spike Volume Used in MS (mL):	0.20	
M/B 2 Sigma CSU:	0.360		Spike Volume Used in MSD (mL):		
MB MDC:	0.736		MS Aliquot (L, g, F):	0.807	
MB Numerical Performance Indicator:	2.01		MS Target Conc.(pCi/L, g, F):	8.372	
MB Status vs Numerical Indicator:	Warning		MSD Aliquot (L, g, F):		
MB Status vs. MDC:	Pass	1	MSD Target Conc. (pCi/L, g, F):	ĺ	
			MS Spike Uncertainty (calculated):	0.603	
Laboratory Control Sample Assessment	LCSD (Y or N)?	Y	MSD Spike Uncertainty (calculated):		
	LCS54715	LCSD54715	Sample Result:	1.366	
Count Date: Spike I.D.:	7/2/2020 19-057	7/2/2020	Sample Result 2 Sigma CSU (pCi/L, g, F):	0.542	
Decay Corrected Spike Concentration (pCi/mL):	33.604	33,604	Sample Matrix Spike Result; Matrix Spike Result 2 Sigma CSU (pCi/L, g, F);	9.436	
Volume Used (mL):	0,10	0.10	Sample Matrix Spike Result 2 Signal CSO (pCi/L, g, F):	1.949	
Aliquot Volume (L, g, F):	0.807	0.802	Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Target Conc. (pCi/L, g, F):	4.164	4.193	Mank Opike Subjicate Result 2 Signa CGC (pCPL, g, P). MS Numerical Performance Indicator:	-0.281	
Uncertainty (Calculated);	0.300	0.302	MSD Numerical Performance Indicator:	-0.201	
Result (pCi/L, g, F):	5.312	4.746	MS Percent Recovery:	96.39%	
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.235	1.108	MSD Percent Recovery:		
Numerical Performance Indicator:	1.77	0.94	MS Status vs Numerical Indicator:	Pass	
Percent Recovery:	127.56%	113.19%	MSD Status vs Numerical Indicator:		
Status vs Numerical Indicator:	N/A	N/A	MS Status vs Recovery:	Pass	
Status vs Recovery:	Pass	Pass	MSD Status vs Recovery:		
Upper % Recovery Limits: Lower % Recovery Limits:	135%	135%	MS/MSD Upper % Recovery Limits:	135%	
Lower % Recovery Limits:	60%	60%	MS/MSD Lower % Recovery Limits:	60%	
Duplicate Sample Assessment		T 1	Matrix Spike/Matrix Spike Duplicate Sample Assessment		
			mutik opikemutik opike oupicate oampie Assessment	ļ	
Sample I.D.:	LCS54715	Enter Duplicate	Sample I.D.	[
Duplicate Sample I.D.	LCSD54715	sample IDs if	Sample MS I.D.		
Sample Result (pCi/L, g, F):	5.312	other than	Sample MSD I.D.		:
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.235	LCS/LCSD in	Sample Matrix Spike Result:		
Sample Duplicate Result (pCi/L, g, F):	4.746	the space below.	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.108		Sample Matrix Spike Duplicate Result:		
Are sample and/or duplicate results below RL?	NO		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:	0.669		Duplicate Numerical Performance Indicator:		
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	11.94%	ļ	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
Duplicate Status vs Numerical Indicator:	Pass		MS/ MSD Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD: % RPD Limit:	Pass 36%		MS/ MSD Duplicate Status vs RPD:		
% RPD Limit;	30%	1	% RPD Limit:		

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

Comments:

Pace Analytical"

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Ra-228 NELAC DW2 Printed: 7/6/2020 8:18 AM

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Ra-228_54715_DW_W Ra-228 (R086-8 04Sep2019).xis

ATTACHMENT 1-3 September 2020 Sampling Event Laboratory Analytical Report



September 28, 2020

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

RE: Project: JEC FAL CCR Pace Project No.: 60348652

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

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 FAL CCR Pace Project No.: 60348652

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



SAMPLE SUMMARY

Project: JEC FAL CCR Pace Project No.: 60348652

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60348652001	FAA-05-091420	Water	09/14/20 10:40	09/16/20 17:40
60348652002	FAA-03-091420	Water	09/14/20 11:10	09/16/20 17:40
60348652003	FAA-04-091420	Water	09/14/20 10:12	09/16/20 17:40
60348652004	FAA-06-091420	Water	09/14/20 10:06	09/16/20 17:40
60348652005	DUP-FAL-091420	Water	09/14/20 10:11	09/16/20 17:40



SAMPLE ANALYTE COUNT

Project: JEC FAL CCR Pace Project No.: 60348652

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60348652001	FAA-05-091420	EPA 200.7	TDS	4	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	MAP	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	LDB, MJK	3	PASI-K
0348652002	FAA-03-091420	EPA 200.7	TDS	4	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	MAP	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	LDB, MJK	3	PASI-K
0348652003	FAA-04-091420	EPA 200.7	TDS	4	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	MAP	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	LDB, MJK	3	PASI-K
0348652004	FAA-06-091420	EPA 200.7	TDS	4	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	MAP	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	LDB, MJK	3	PASI-K
0348652005	DUP-FAL-091420	EPA 200.7	TDS	4	PASI-K
		EPA 6010	TDS	1	PASI-K
		EPA 200.8	JGP	4	PASI-K
		SM 2540C	MAP	1	PASI-K
		SM 4500-H+B	LDB	1	PASI-K
		EPA 300.0	LDB, MJK	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City



Project: JEC FAL CCR

Pace Project No.: 60348652

Method: EPA 200.7

Description:200.7 Metals, TotalClient:Evergy Kansas Central, Inc.Date:September 28, 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:



Project: JEC FAL CCR

Pace Project No.: 60348652

Method: EPA 6010

Description:6010 MET ICPClient:Evergy Kansas Central, Inc.Date:September 28, 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:



Project: JEC FAL CCR

Pace Project No.: 60348652

Method: EPA 200.8

Description:200.8 MET ICPMSClient:Evergy Kansas Central, Inc.Date:September 28, 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.

QC Batch: 678528

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60348360002,60348653001

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

- MS (Lab ID: 2743586)
 - Selenium

Additional Comments:



Project: JEC FAL CCR

Pace Project No.: 60348652

Method: SM 2540C

Description:2540C Total Dissolved SolidsClient:Evergy Kansas Central, Inc.Date:September 28, 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:



Project: JEC FAL CCR

Pace Project No.: 60348652

Description:4500H+ pH, ElectrometricClient:Evergy Kansas Central, Inc.Date:September 28, 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-FAL-091420 (Lab ID: 60348652005)
- FAA-03-091420 (Lab ID: 60348652002)
- FAA-04-091420 (Lab ID: 60348652003)
- FAA-05-091420 (Lab ID: 60348652001)
- FAA-06-091420 (Lab ID: 60348652004)

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:



Project: JEC FAL CCR Pace Project No.: 60348652

Method: EPA 300.0

Description:300.0 IC Anions 28 DaysClient:Evergy Kansas Central, Inc.Date:September 28, 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.



Project: JEC FAL CCR

Pace Project No.: 60348652

Sample: FAA-05-091420	Lab ID: 603	348652001	Collected: 09/14	/20 10:40	0 Received: 09	9/16/20 17:40 N	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Me	thod: EPA 20	0.7 Preparation M	ethod: El	PA 200.7			
	Pace Analytic	al Services -	Kansas City					
Barium, Total Recoverable	<0.0050	mg/L	0.005) 1	09/24/20 08:10	09/25/20 18:08	7440-39-3	
Beryllium, Total Recoverable	0.0016	mg/L	0.001) 1	09/24/20 08:10	09/25/20 18:08	7440-41-7	
Boron, Total Recoverable	1.6	mg/L	0.1) 1	09/24/20 08:10	09/25/20 18:08	7440-42-8	
Calcium, Total Recoverable	467	mg/L	0.2) 1	09/24/20 08:10	09/25/20 18:08	7440-70-2	
6010 MET ICP	Analytical Me	thod: EPA 60	010 Preparation M	ethod: EF	PA 3010			
	Pace Analytic	al Services -	Kansas City					
Lithium, Total Recoverable	0.13	mg/L	0.01) 1	09/24/20 08:10	09/25/20 18:08	7439-93-2	
200.8 MET ICPMS	Analytical Me	thod: EPA 20	0.8 Preparation M	ethod: El	PA 200.8			
	Pace Analytic	al Services -	Kansas City					
Arsenic, Total Recoverable	<0.0010	mg/L	0.001) 1	09/23/20 15:59	09/25/20 15:12	7440-38-2	
Cobalt, Total Recoverable	0.0023	mg/L	0.001) 1	09/23/20 15:59	09/25/20 15:12	7440-48-4	
Molybdenum, Total Recoverable	0.027	mg/L	0.001) 1	09/23/20 15:59	09/26/20 13:46	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.001) 1	09/23/20 15:59	09/25/20 15:12	7782-49-2	
2540C Total Dissolved Solids	Analytical Me	thod: SM 254	40C					
	Pace Analytic	al Services -	Kansas City					
Total Dissolved Solids	2630	mg/L	40.) 1		09/21/20 16:11		
4500H+ pH, Electrometric	Analytical Me	thod: SM 450	00-H+B					
• • •	Pace Analytic							
pH at 25 Degrees C	6.9	Std. Units	0.1) 1		09/19/20 10:01		H6
300.0 IC Anions 28 Days	Analytical Me	thod: EPA 30	0.0					
-	Pace Analytic	al Services -	Kansas City					
Chloride	106	mg/L	10.) 10		09/21/20 16:04	16887-00-6	
Fluoride	0.73	mg/L	0.2) 1		09/19/20 18:42	16984-48-8	
Sulfate	1390	mg/L	20	200		09/21/20 16:20	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60348652

Sample: FAA-03-091420	Lab ID: 603	348652002	Collected: 09/14	/20 11:10	0 Received: 09	0/16/20 17:40 I	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Met	thod: EPA 20	0.7 Preparation N	ethod: El	PA 200.7			
	Pace Analytic	al Services -	Kansas City					
Barium, Total Recoverable	0.026	mg/L	0.005) 1	09/24/20 08:10	09/25/20 18:11	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.001) 1	09/24/20 08:10	09/25/20 18:11	7440-41-7	
Boron, Total Recoverable	0.59	mg/L	0.1) 1	09/24/20 08:10	09/25/20 18:11	7440-42-8	
Calcium, Total Recoverable	169	mg/L	0.20) 1	09/24/20 08:10	09/25/20 18:11	7440-70-2	
6010 MET ICP	Analytical Met	thod: EPA 60	10 Preparation M	ethod: EF	PA 3010			
	Pace Analytic	al Services -	Kansas City					
Lithium, Total Recoverable	0.018	mg/L	0.01) 1	09/24/20 08:10	09/25/20 18:11	7439-93-2	
200.8 MET ICPMS	Analytical Met	thod: EPA 20	0.8 Preparation M	ethod: El	PA 200.8			
	Pace Analytic	al Services -	Kansas City					
Arsenic, Total Recoverable	<0.0010	mg/L	0.001) 1	09/23/20 15:59	09/25/20 15:16	7440-38-2	
Cobalt, Total Recoverable	<0.0010	mg/L	0.001) 1	09/23/20 15:59	09/25/20 15:16	7440-48-4	
Molybdenum, Total Recoverable	0.0089	mg/L	0.001) 1	09/23/20 15:59	09/26/20 13:47	7439-98-7	
Selenium, Total Recoverable	<0.0010	mg/L	0.001) 1	09/23/20 15:59	09/25/20 15:16	7782-49-2	
2540C Total Dissolved Solids	Analytical Met	thod: SM 254	40C					
	Pace Analytic	al Services -	Kansas City					
Total Dissolved Solids	1120	mg/L	13.3	3 1		09/21/20 16:12		
4500H+ pH, Electrometric	Analytical Met	thod: SM 450	00-H+B					
• *	Pace Analytic	al Services -	Kansas City					
pH at 25 Degrees C	7.1	Std. Units	0.1) 1		09/19/20 10:02		H6
300.0 IC Anions 28 Days	Analytical Met	thod: EPA 30	0.0					
-	Pace Analytic	al Services -	Kansas City					
Chloride	65.4	mg/L	10.0) 10		09/21/20 16:35	16887-00-6	
Fluoride	0.44	mg/L	0.2) 1		09/19/20 18:57	16984-48-8	
Sulfate	487	mg/L	50.	50		09/21/20 16:50	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60348652

Sample: FAA-04-091420	Lab ID: 60	348652003	Collected: 09/14/	20 10:12	Received: 09	9/16/20 17:40 N	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Me	thod: EPA 20	0.7 Preparation Me	ethod: EF	PA 200.7			
	Pace Analytic	al Services -	Kansas City					
Barium, Total Recoverable	0.045	mg/L	0.0050	1	09/24/20 08:10	09/25/20 18:13	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0010	1	09/24/20 08:10	09/25/20 18:13	7440-41-7	
Boron, Total Recoverable	0.72	mg/L	0.10	1	09/24/20 08:10	09/25/20 18:13	7440-42-8	
Calcium, Total Recoverable	163	mg/L	0.20	1	09/24/20 08:10	09/25/20 18:13	7440-70-2	
6010 MET ICP	Analytical Me	thod: EPA 60	10 Preparation Me	thod: EP	A 3010			
	Pace Analytic	al Services -	Kansas City					
Lithium, Total Recoverable	0.020	mg/L	0.010	1	09/24/20 08:10	09/25/20 18:13	7439-93-2	
200.8 MET ICPMS	Analytical Me	thod: EPA 20	0.8 Preparation Me	ethod: EF	PA 200.8			
	Pace Analytic	al Services -	Kansas City					
Arsenic, Total Recoverable	<0.0010	mg/L	0.0010	1	09/23/20 15:59	09/25/20 15:23	7440-38-2	
Cobalt, Total Recoverable	0.0016	mg/L	0.0010	1	09/23/20 15:59	09/25/20 15:23	7440-48-4	
Molybdenum, Total Recoverable	0.0064	mg/L	0.0010	1	09/23/20 15:59	09/26/20 13:48	7439-98-7	
Selenium, Total Recoverable	0.0010	mg/L	0.0010	1	09/23/20 15:59	09/25/20 15:23	7782-49-2	
2540C Total Dissolved Solids	Analytical Me	thod: SM 254	40C					
	Pace Analytic	al Services -	Kansas City					
Total Dissolved Solids	1140	mg/L	13.3	1		09/21/20 16:12		
4500H+ pH, Electrometric	Analytical Me	thod: SM 450	00-H+B					
• *	Pace Analytic	al Services -	Kansas City					
pH at 25 Degrees C	7.2	Std. Units	0.10	1		09/19/20 09:56		H6
300.0 IC Anions 28 Days	Analytical Me	thod: EPA 30	0.0					
-	Pace Analytic	al Services -	Kansas City					
Chloride	68.4	mg/L	10.0	10		09/21/20 17:05	16887-00-6	
Fluoride	0.45	mg/L	0.20	1		09/19/20 19:13	16984-48-8	
Sulfate	494	mg/L	50.0	50		09/21/20 17:21	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60348652

Sample: FAA-06-091420	Lab ID: 603	48652004	Collected: 09/	4/20 10:	06 Received: 09	9/16/20 17:40 N	Aatrix: Water	
Parameters	Results	Units	Report Lim	it DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Met	hod: EPA 20	0.7 Preparation	Method:	EPA 200.7			
	Pace Analytic	al Services -	Kansas City					
Barium, Total Recoverable	0.033	mg/L	0.00	50 1	09/24/20 08:10	09/25/20 18:21	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.00	10 1	09/24/20 08:10	09/25/20 18:21	7440-41-7	
Boron, Total Recoverable	2.9	mg/L	0.	10 1	09/24/20 08:10	09/25/20 18:21	7440-42-8	
Calcium, Total Recoverable	134	mg/L	0.	20 1	09/24/20 08:10	09/25/20 18:21	7440-70-2	
6010 MET ICP	Analytical Met	hod: EPA 60	10 Preparation	/lethod: E	EPA 3010			
	Pace Analytic							
Lithium, Total Recoverable	0.014	mg/L	0.0	10 1	09/24/20 08:10	09/25/20 18:21	7439-93-2	
200.8 MET ICPMS	Analytical Met	hod: EPA 20	0.8 Preparation	Method:	EPA 200.8			
	Pace Analytic							
Arsenic, Total Recoverable	0.0064	mg/L	0.00	10 1	09/23/20 15:59	09/25/20 15:27	7440-38-2	
Cobalt, Total Recoverable	0.0015	mg/L	0.00	10 1	09/23/20 15:59	09/25/20 15:27	7440-48-4	
Molybdenum, Total Recoverable	0.40	mg/L	0.00	10 1	09/23/20 15:59	09/26/20 13:49	7439-98-7	
Selenium, Total Recoverable	0.0033	mg/L	0.00	10 1	09/23/20 15:59	09/25/20 15:27	7782-49-2	
2540C Total Dissolved Solids	Analytical Met	hod: SM 254	40C					
	Pace Analytic	al Services -	Kansas City					
Total Dissolved Solids	2160	mg/L	40	.0 1		09/21/20 16:12		
4500H+ pH, Electrometric	Analytical Met	hod: SM 450	00-H+B					
	Pace Analytic							
pH at 25 Degrees C	7.4	Std. Units	0.	10 1		09/19/20 09:53		H6
300.0 IC Anions 28 Days	Analytical Met	hod: EPA 30	0.0					
-	Pace Analytic							
Chloride	66.0	mg/L	10	.0 10		09/21/20 17:36	16887-00-6	
Fluoride	0.99	mg/L	0.1	20 1		09/19/20 19:28	16984-48-8	
Sulfate	1230	mg/L	2	00 200)	09/21/20 18:22	14808-79-8	



Project: JEC FAL CCR

Pace Project No.: 60348652

Sample: DUP-FAL-091420	Lab ID: 603	348652005	Collected: 09	9/14/20	10:11	Received: 09	/16/20 17:40 N	latrix: Water	
Parameters	Results	Units	Report Li	imit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Met	thod: EPA 20	0.7 Preparatio	n Metho	od: EP/	A 200.7			
	Pace Analytic	al Services -	Kansas City						
Barium, Total Recoverable	0.034	mg/L	0.0	050	1	09/24/20 08:10	09/25/20 18:23	7440-39-3	
Beryllium, Total Recoverable	<0.0010	mg/L	0.0	010	1	09/24/20 08:10	09/25/20 18:23	7440-41-7	
Boron, Total Recoverable	3.0	mg/L		0.10	1	09/24/20 08:10	09/25/20 18:23	7440-42-8	
Calcium, Total Recoverable	136	mg/L		0.20	1	09/24/20 08:10	09/25/20 18:23	7440-70-2	
6010 MET ICP	Analytical Met	thod: EPA 60	010 Preparation	n Metho	d: EPA	3010			
	Pace Analytic	al Services -	Kansas City						
Lithium, Total Recoverable	0.016	mg/L	0	.010	1	09/24/20 08:10	09/25/20 18:23	7439-93-2	
200.8 MET ICPMS	Analytical Met	thod: EPA 20	0.8 Preparatio	n Metho	od: EP/	A 200.8			
	Pace Analytic	al Services -	Kansas City						
Arsenic, Total Recoverable	0.0066	mg/L	0.0	010	1	09/23/20 15:59	09/25/20 15:30	7440-38-2	
Cobalt, Total Recoverable	0.0015	mg/L	0.0	010	1	09/23/20 15:59	09/25/20 15:30	7440-48-4	
Molybdenum, Total Recoverable	0.41	mg/L	0.0	010	1	09/23/20 15:59	09/26/20 13:50	7439-98-7	
Selenium, Total Recoverable	0.0033	mg/L	0.0	010	1	09/23/20 15:59	09/25/20 15:30	7782-49-2	
2540C Total Dissolved Solids	Analytical Met	thod: SM 254	40C						
	Pace Analytic	al Services -	Kansas City						
Total Dissolved Solids	2140	mg/L		40.0	1		09/21/20 16:12		
4500H+ pH, Electrometric	Analytical Met	thod: SM 45	00-H+B						
• *	Pace Analytic	al Services -	Kansas City						
pH at 25 Degrees C	7.3	Std. Units	;	0.10	1		09/19/20 09:55		H6
300.0 IC Anions 28 Days	Analytical Met	thod: EPA 30	0.0						
-	Pace Analytic	al Services -	Kansas City						
Chloride	84.5	mg/L		10.0	10		09/21/20 18:37	16887-00-6	
Fluoride	0.98	mg/L		0.20	1		09/19/20 19:44	16984-48-8	
Sulfate	1250	mg/L		200	200		09/21/20 18:52	14808-79-8	



Project: Pace Project No.:	JEC FA 603486	AL CCR 652											
QC Batch:	67858	82		Anal	ysis Metho	od: E	EPA 200.7						
QC Batch Method:	EPA 2	200.7			ysis Descr		200.7 Metal	s, Total					
				Labo	oratory:	F	Pace Analyt	ical Servic	es - Kansa	s City			
Associated Lab Sa	mples:	603486520	01, 6034865200	2, 6034865	52003, 603	348652004, (603486520	05					
METHOD BLANK:	274370)3			Matrix: V	/ater							
Associated Lab Sa	mples:	603486520	01, 6034865200	2, 6034865	52003, 603	348652004, (603486520	05					
				Bla	nk	Reporting							
Para	meter		Units	Res	ult	Limit	Analy	/zed	Qualifier	S			
Barium			mg/L	<	0.0050	0.005	0 09/25/20	0 18:03					
Beryllium			mg/L		0.0010	0.001							
Boron			mg/L		<0.10	0.10	0 09/25/20	0 18:03					
Calcium			mg/L		<0.20	0.20	0 09/25/20	0 18:03					
LABORATORY CO	NTROL	SAMPLE:	2743704										
				Spike	LC	CS	LCS	% R	lec				
Para	meter		Units	Conc.	Re	sult	% Rec	Lim	its	Qualifiers			
Barium			mg/L		1	0.97	9	7	85-115				
Beryllium			mg/L		1	0.99	99	9	85-115				
Boron			mg/L		1	1.0	10	C	85-115				
Calcium			mg/L	,	10	10.0	100	0	85-115				
MATRIX SPIKE & I			ICATE: 2743	705		2743706							
MATRIX OF INE &			10ATE. 2743	MS	MSD	2143100							
			60348653001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	er	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Barium		mg/L		1	1	1.0	1.1	101	111	70-130	9	20	
Beryllium		mg/L	< 0.020	1	1	1.1	1.1	106			5	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 SA			2743707										
				60348	3776003	Spike	MS		MS	% Rec			
Para	meter		Units		esult	Conc.	Result	0	% Rec	Limits		Quali	fiers
Barium			mg/L		0.021	1	(0.97	95	70	130		
Beryllium			mg/L		<0.0010	1		0.96	96	70	-130		
Boron			mg/L		1.7	1		2.7	97	70-	130		
Calcium			mg/L		355	10		357	25	70-	130 M	1	

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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Project: JEC FA												
Pace Project No.: 603486	-											
QC Batch: 67852	8			ysis Metho		EPA 200.8						
QC Batch Method: EPA 2	00.8		Anal	ysis Descri	ption: 2	200.8 MET						
			Labo	oratory:	F	Pace Analyt	ical Servic	ces - Kansa	s City			
Associated Lab Samples:	603486520	001, 6034865200	2, 603486	52003, 603	48652004, 6	603486520	05					
METHOD BLANK: 274358	2			Matrix: W	ater							
Associated Lab Samples:	603486520	001, 6034865200	2, 603486	52003, 603	48652004, 6	603486520	05					
			Bla	nk	Reporting							
Parameter		Units	Res	sult	Limit	Analy	/zed	Qualifier	s			
Arsenic		mg/L	<	.0.0010	0.0010	0 09/25/20	0 15:03					
Cobalt		mg/L	<	:0.0010	0.0010	0 09/25/20	0 15:03					
Molybdenum		mg/L	<	:0.0010	0.0010	0 09/26/20	0 13:40					
Selenium		mg/L	<	0.0010	0.0010		0 15:03					
LABORATORY CONTROL S	AMPLE:	2743583										
Parameter		Units	Spike Conc.			LCS % Rec	% F Lim		Qualifiers			
Arsenic		mg/L	0.0	04	0.038	94	4	85-115				
Cobalt		mg/L	0.0	04	0.037	93	3	85-115				
Molybdenum		mg/L	0.0		0.039	97		85-115				
Selenium		mg/L	0.0	04	0.036	91	1	85-115				
MATRIX SPIKE & MATRIX S	PIKE DUP	LICATE: 2743			2743585							
			MS	MSD								
		60348360002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Arsenic	mg/L	1.2 ug/L	0.04	0.04	0.040	0.039	96	95	70-130	2	20	
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	
Selenium	mg/L	ND	0.04	0.04	0.036	0.036	89	88	70-130	1	20	
MATRIX SPIKE SAMPLE:		2742596										
WATRIA SFIRE SAWPLE		2743586	60240	0652001	Spiko	MS		MS	% Rec			
Parameter		Units		8653001 esult	Spike Conc.	Result	Q	% Rec	% Rec		Qualif	iers
		mg/L		0.0015J	0.04	0.	034	82	70	-130		
Arsenic						•••						
Arsenic Cobalt		0		< 0.00090	0.04	0.	037	91	70	-130		
		mg/L mg/L		<0.00090 0.0011J	0.04 0.04		037 037	91 90		-130 -130		

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



Project:	JEC FAL CCR											
Pace Project No.:	60348652											
QC Batch:	678583		Analys	sis Metho	d: E	EPA 6010						
QC Batch Method:	EPA 3010		Analys	sis Descri	ption: 6	6010 MET						
			Labora	atory:	F	Pace Analytic	al Service	es - Kansa	s City			
Associated Lab Sam	ples: 60348652	001, 6034865200	02, 60348652	2003, 603	48652004,	6034865200	5					
METHOD BLANK:	2743710		٦	Matrix: W	ater							
Associated Lab Sam	ples: 60348652	001, 6034865200	02, 60348652	2003, 603	48652004,	6034865200	5					
			Blank	k	Reporting							
Paramo	eter	Units	Resu	lt	Limit	Analyz	ed	Qualifier	S			
Falalli												
Lithium		mg/L		0.010	0.01	0 09/25/20	18:03					
		mg/L	<	0.010	0.010	0 09/25/20	18:03					
	TROL SAMPLE:	mg/L 2743711	<	0.010	0.01	0 09/25/20	18:03					
Lithium	TROL SAMPLE:		<	0.010		0 09/25/20	18:03 % Re	ec				
Lithium					S				Qualifiers			
Lithium		2743711	Spike	LC Res	S	LCS	% Re Limi		Qualifiers			
Lithium LABORATORY CON Parame Lithium	eter	2743711 Units mg/L	Spike Conc. 1	LC Res	S Sult 0.99	LCS % Rec 99	% Re Limi	ts	Qualifiers	_		
Lithium LABORATORY CON Parame	eter	2743711 Units mg/L	Spike Conc. 1	LC Res	S sult	LCS % Rec 99	% Re Limi	ts	Qualifiers			
Lithium LABORATORY CON Parame Lithium	eter	2743711 <u>Units</u> mg/L PLICATE: 2743	Spike Conc. 1 7712 MS	LC Res MSD	S Sult 0.99 2743713	LCS % Rec 99	% Re Limi E	ts		_	Mari	
Lithium LABORATORY CON Paramo Lithium MATRIX SPIKE & MA	eter ATRIX SPIKE DUF	2743711 Units mg/L PLICATE: 2743 60348653001	Spike Conc. 1 712 MS Spike	LC Res MSD Spike	Sult 0.99 2743713 MS	LCS % Rec 99	% Re Limit	ts 30-120 MSD	% Rec		Max	Qual
Lithium LABORATORY CON Parame Lithium	eter	2743711 Units mg/L PLICATE: 2743 60348653001 Result	Spike Conc. 1 712 MS Spike	LC Res MSD	S Sult 0.99 2743713	LCS % Rec 99	% Re Limi E	ts	% Rec Limits		RPD	Qual

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.



Project:	JEC FAL CCR							
Pace Project No.:	60348652							
QC Batch:	678006		Analysis Me	ethod:	SM 2540C			
QC Batch Method:	SM 2540C		Analysis De	escription:	2540C Total Di	ssolved Solids		
			Laboratory:		Pace Analytica	ity		
Associated Lab Sar	nples: 60348652	001, 6034865200	2, 60348652003,	60348652004	, 60348652005			
METHOD BLANK:	2741926		Matrix	: Water				
Associated Lab Sar	nples: 60348652	001, 6034865200	2, 60348652003,	60348652004	, 60348652005			
			Blank	Reporting				
Paran	neter	Units	Result	Limit	Analyze	d Quali	fiers	_
Total Dissolved Soli	ds	mg/L	<5.0	Ę	5.0 09/21/20 10	6:09		
LABORATORY CO	NTROL SAMPLE:	2741927						
_			Spike	LCS	LCS	% Rec	-	
Parar		Units	Conc	Result	% Rec	Limits	Qua	alifiers
Total Dissolved Soli	ds	mg/L	1000	1010	101	80-120		
SAMPLE DUPLICA	TE: 2741928							
5			60348652001	Dup		Max		0 10
Paran		Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Soli	ds	mg/L	2630	26	60	1	10	
SAMPLE DUPLICA	TE: 2741936							
-			60348712001	Dup		Max		0 11/1
Paran		Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Soli	ds	mg/L	17500	162	00	8	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.



Project:	JEC FAL CCR							
Pace Project No.:	60348652							
QC Batch:	677705		Analysis Meth	iod: S	SM 4500-H+B			
QC Batch Method:	SM 4500-H+B		Analysis Desc	cription: 4	I500H+B pH			
			Laboratory:	F	Pace Analytical	Services - Kar	isas City	
Associated Lab Sar	•	001, 60348652002	2, 60348652003, 60)348652004, 6	60348652005			
	12. 2140201		60348588006	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	
pH at 25 Degrees C		Std. Units	8.2	8.2		0	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.



Project: Pace Project No.:	60348652								
QC Batch:	677782		Analysis I	lethod:	FF	PA 300.0			
QC Batch Method:	EPA 300.0		-			0.0 IC Anion			
	EFA 300.0			Analysis Description:				Kong	can City
annaistad Lab Ca			Laborator	,		ace Analytica	I Services	- Kans	sas City
sociated Lab Sa	mpies: 603466	52001, 6034865200	2, 0034605200	5, 6034665200	J4, 60	0346652005			
ETHOD BLANK:	2740997		Mat	rix: Water					
ssociated Lab Sa	mples: 603486	52001, 6034865200	2, 60348652003			0348652005			
_		11-26	Blank	1 0				0	
	meter	Units	Result	Limit		Analyze		Qualifie	ers
Chloride		mg/L	<1		1.0	09/19/20 1			
luoride		mg/L	<0.2		0.20	09/19/20 1			
ulfate		mg/L	<1	.0	1.0	09/19/20 1	8:11		
ETHOD BLANK:	2741910		Mat	ix: Water					
ssociated Lab Sa	mples: 603486	52001, 6034865200	2, 60348652003	3, 6034865200	04, 60	348652005			
			Blank	Reportir	ng				
Para	meter	Units	Result	Limit		Analyze	ed	Qualifie	ers
Chloride		mg/L		.0	1.0	09/21/20 1	5:18		
		-			0 00	09/21/20 1	5.18		
		mg/L	<0.2	20	0.20	03/21/201	0.10		
uoride		mg/L mg/L	<0.2 <1		0.20 1.0	09/21/20 1			
uoride		-							
uoride ulfate	2742419	-	<1						
uoride ulfate ETHOD BLANK:	-	-	<1 Mat	.0 rix: Water	1.0	09/21/20 1			
uoride Ilfate ETHOD BLANK:	-	mg/L	<1 Mat	.0 rix: Water	1.0 04, 60	09/21/20 1			
uoride Ilfate ETHOD BLANK: ssociated Lab Sar	-	mg/L	<1 Mat 2, 60348652003	.0 rix: Water 3, 6034865200	1.0 04, 60	09/21/20 1	5:18	Qualifi	ers
uoride ulfate ETHOD BLANK: ssociated Lab Sar Parar	mples: 603486	mg/L 52001, 6034865200	<1 Mati 2, 60348652003 Blank	.0 rix: Water 3, 6034865200 Reportir Limit	1.0 04, 60	09/21/20 1	5:18 ed	Qualifie	ers
uoride Ilfate ETHOD BLANK: ssociated Lab Sar Paran	mples: 603486	mg/L 52001, 6034865200 Units	<1 Mat 2, 60348652003 Blank Result	.0 rix: Water 3, 6034865200 Reportir Limit	1.0 04, 60 ng	09/21/20 1: 0348652005 Analyze	5:18 	Qualifi	ers
uoride ulfate ETHOD BLANK: ssociated Lab Sar Parar hloride uoride	mples: 603486	mg/L 52001, 6034865200 Units mg/L	<1 Mat 2, 60348652003 Blank Result <1	.0 rix: Water 3, 6034865200 Reportir Limit .0 20	1.0 04, 60 ng 1.0	09/21/20 1: 0348652005 Analyze 09/22/20 0	5:18 ed 9:19 9:19	Qualifi	ers
Fluoride Sulfate METHOD BLANK: Associated Lab Sar	mples: 603486 meter	mg/L 52001, 6034865200 Units mg/L mg/L	<1 Mat 2, 60348652003 Blank Result <1 <0.2	.0 rix: Water 3, 6034865200 Reportir Limit .0 20	1.0 04, 60 ng 1.0 0.20	09/21/20 1: 0348652005 Analyze 09/22/20 0 09/22/20 0	5:18 ed 9:19 9:19	Qualifi	ers
Iuoride Sulfate METHOD BLANK: Associated Lab Sau Parau Parau Chloride Sulfate	mples: 603486 meter	mg/L 52001, 6034865200 Units mg/L mg/L	<1 Mat 2, 60348652003 Blank Result <1 <0.2	.0 rix: Water 3, 6034865200 Reportir Limit .0 20	1.0 04, 60 ng 1.0 0.20 1.0	09/21/20 1: 0348652005 Analyze 09/22/20 0 09/22/20 0	5:18 ed 9:19 9:19		ers
luoride ulfate IETHOD BLANK: ssociated Lab Sau Parau Parau ihloride luoride ulfate ABORATORY CO	mples: 603486 meter	mg/L 52001, 6034865200 Units mg/L mg/L	<1 Mati 2, 60348652003 Blank Result <1 <0.2 <1	.0 rix: Water 3, 6034865200 Reportir Limit .0 20 .0	1.0 04, 60 1.0 0.20 1.0	09/21/20 1: 0348652005 Analyze 09/22/20 0 09/22/20 0 09/22/20 0	5:18 ed 9:19 9:19 9:19		ers Qualifiers
luoride ulfate IETHOD BLANK: ssociated Lab Sau Parau hloride luoride ulfate ABORATORY CO Parau	mples: 603486 meter NTROL SAMPLE	mg/L 52001, 6034865200 Units mg/L mg/L mg/L : 2740998 Units	<1 Mati 2, 60348652003 Blank Result <1 <0.2 <1 Spike	.0 rix: Water 3, 6034865200 Reportir Limit 0 20 .0 LCS Result	1.0 04, 60 1.0 0.20 1.0	09/21/20 1: 0348652005 Analyze 09/22/20 0: 09/22/20 0: 09/22/20 0: 09/22/20 0:	5:18 ed 9:19 9:19 9:19 % Rec Limits		
uoride ulfate ETHOD BLANK: ssociated Lab Sau Parau hloride uoride ulfate ABORATORY CO Parau hloride	mples: 603486 meter NTROL SAMPLE	mg/L 52001, 6034865200 	<1 Mat 2, 60348652003 Blank Result <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	.0 ix: Water 3, 6034865200 Reportir Limit 20 .0 LCS	1.0 04, 60 1.0 0.20 1.0	09/21/20 1: 0348652005 Analyze 09/22/20 0 09/22/20 0 09/22/20 0	5:18 ed 9:19 9:19 9:19 % Rec Limits 90	;	
uoride Jlfate ETHOD BLANK: ssociated Lab Sau Parau hloride uoride Jlfate ABORATORY CO Parau hloride uoride	mples: 603486 meter NTROL SAMPLE	mg/L 52001, 6034865200 Units mg/L mg/L mg/L : 2740998 Units	<1 Mat 2, 60348652003 Blank Result <1 <0.2 <1 Spike Conc.	.0 rix: Water 3, 6034865200 Reportir Limit 0 20 .0 .0 LCS Result 5.3	1.0 04, 60 1.0 0.20 1.0	09/21/20 1: 0348652005 Analyze 09/22/20 0: 09/22/20 0: 09/22/20 0: 09/22/20 0: 09/22/20 0:	5:18 ed 9:19 9:19 9:19 9:19 % Rec Limits 90 90	-110	
uoride Jlfate ETHOD BLANK: ssociated Lab Sau Parau hloride uoride Jlfate ABORATORY CO Parau hloride uoride	mples: 603486 meter NTROL SAMPLE	mg/L 52001, 6034865200 	<1 Mat 2, 60348652003 Blank Result <1 <0.2 <1 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <0.2 <1 <1 <1 <0.2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	.0 rix: Water 3, 6034865200 Reportir Limit 0 20 .0 .0 LCS Result 5.3 2.6	1.0 04, 60 1.0 0.20 1.0	09/21/20 1: 0348652005 Analyze 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0	5:18 ed 9:19 9:19 9:19 9:19 % Rec Limits 90 90	-110 -110	
Iluoride Sulfate AETHOD BLANK: Associated Lab Sat Parat Chloride Sulfate ABORATORY CO	mples: 603486 meter NTROL SAMPLE meter	mg/L 52001, 6034865200 Units mg/L Units mg/L mg/L mg/L	<1 Mat 2, 60348652003 Blank Result <1 <0.2 <1 Spike Conc. 5 2.5 5	.0 ix: Water 3, 6034865200 Reportir Limit 0 20 .0 LCS Result 5.3 2.6 5.4	1.0 04, 60 ng 1.0 0.20 1.0	09/21/20 1: 0348652005 Analyze 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0	5:18 		
uoride Jafate ETHOD BLANK: ssociated Lab Sau Parau hloride uoride JaborATORY CO Parau hloride uoride JaborATORY CO	mples: 603486 meter NTROL SAMPLE meter	mg/L 52001, 6034865200 Units mg/L mg/L Units mg/L mg/L mg/L mg/L mg/L mg/L	<1 Mati 2, 60348652003 Blank Result <1 <0.2 <1 Spike Conc. 5 2.5 5 5 Spike	.0 ix: Water 3, 6034865200 Reportir Limit 0 20 .0 LCS Result 5.3 2.6 5.4 LCS	1.0 04, 60 ng 1.0 0.20 1.0	09/21/20 1: 0348652005 Analyze 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0 UCS	5:18 		Qualifiers
uoride ulfate ETHOD BLANK: ssociated Lab Sau Parau hloride uoride ulfate ABORATORY CO Parau ABORATORY CO Parau	mples: 603486 meter NTROL SAMPLE meter	mg/L 52001, 6034865200 Units mg/L	<1 Mat 2, 60348652003 Blank Result <1 <0.2 <1 Spike Conc. 5 5 5 5 5 5	.0 ix: Water 3, 6034865200 Reportir Limit .0 20 .0 LCS Result 5.3 2.6 5.4 LCS Result	1.0 04, 60 ng 1.0 0.20 1.0	09/21/20 1: 0348652005 Analyze 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0 LCS % Rec LCS % Rec	5:18 	-110 -110 -110 -110	
Iuoride Sulfate IETHOD BLANK: ssociated Lab Sau Parau Parau Chloride Juoride Sulfate ABORATORY CO Parau Chloride Juoride Juoride Sulfate	mples: 603486 meter NTROL SAMPLE meter	mg/L 52001, 6034865200 Units mg/L mg/L Units mg/L mg/L mg/L mg/L mg/L mg/L	<1 Mati 2, 60348652003 Blank Result <1 <0.2 <1 Spike Conc. 5 2.5 5 5 Spike	.0 ix: Water 3, 6034865200 Reportir Limit 0 20 .0 LCS Result 5.3 2.6 5.4 LCS	1.0 04, 60 ng 1.0 0.20 1.0	09/21/20 1: 0348652005 Analyze 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0 09/22/20 0 UCS	5:18 		Qualifiers

REPORT OF LABORATORY ANALYSIS

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Project: JEC FAL CCR Pace Project No.: 60348652

LABORATORY CONTROL SAMPLE:	2742420					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	5	4.5	90	90-110	
Fluoride	mg/L	2.5	2.4	94	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SP	PIKE DUPLIC	CATE: 2740	999		2741000							
			MS	MSD								
	6	0348719001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	157	100	100	268	268	111	111	80-120	0	15	
Fluoride	mg/L	0.95	2.5	2.5	3.6	3.7	108	112	80-120	3	15	
Sulfate	mg/L	682	500	500	1220	1220	108	108	80-120	0	15	

MATRIX SPIKE SAMPLE:	2741001						
		60348489001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Chloride	mg/L	ND	250	274	97	80-120	
Fluoride	mg/L	ND	125	133	106	80-120	
Sulfate	mg/L	521	250	778	103	80-120	

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



QUALIFIERS

Project: JEC FAL CCR Pace Project No.: 60348652

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

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 FAL CCR
Pace Project No.:	60348652

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch 678857	
60348652001	FAA-05-091420	EPA 200.7	678582	EPA 200.7		
60348652002	FAA-03-091420	EPA 200.7	678582	EPA 200.7	678857	
60348652003	FAA-04-091420	EPA 200.7	678582	EPA 200.7	678857	
60348652004	FAA-06-091420	EPA 200.7	678582	EPA 200.7	678857	
60348652005	DUP-FAL-091420	EPA 200.7	678582	EPA 200.7	678857	
60348652001	FAA-05-091420	EPA 3010	678583	EPA 6010	678858	
60348652002	FAA-03-091420	EPA 3010	678583	EPA 6010	678858	
60348652003	FAA-04-091420	EPA 3010	678583	EPA 6010	678858	
60348652004	FAA-06-091420	EPA 3010	678583	EPA 6010	678858	
60348652005	DUP-FAL-091420	EPA 3010	678583	EPA 6010	678858	
60348652001	FAA-05-091420	EPA 200.8	678528	EPA 200.8	678673	
60348652002	FAA-03-091420	EPA 200.8	678528	EPA 200.8	678673	
60348652003	FAA-04-091420	EPA 200.8	678528	EPA 200.8	678673	
60348652004	FAA-06-091420	EPA 200.8	678528	EPA 200.8	678673	
60348652005	DUP-FAL-091420	EPA 200.8	678528	EPA 200.8	678673	
60348652001	FAA-05-091420	SM 2540C	678006			
60348652002	FAA-03-091420	SM 2540C	678006			
60348652003	FAA-04-091420	SM 2540C	678006			
60348652004	FAA-06-091420	SM 2540C	678006			
60348652005	DUP-FAL-091420	SM 2540C	678006			
60348652001	FAA-05-091420	SM 4500-H+B	677705			
60348652002	FAA-03-091420	SM 4500-H+B	677705			
60348652003	FAA-04-091420	SM 4500-H+B	677705			
60348652004	FAA-06-091420	SM 4500-H+B	677705			
60348652005	DUP-FAL-091420	SM 4500-H+B	677705			
60348652001	FAA-05-091420	EPA 300.0	677782			
60348652002	FAA-03-091420	EPA 300.0	677782			
60348652003	FAA-04-091420	EPA 300.0	677782			
60348652004	FAA-06-091420	EPA 300.0	677782			
60348652005	DUP-FAL-091420	EPA 300.0	677782			

Pace Analytical Sample Condition U	pon R	eceij	ot	WO#:60348652
Client Name: Evergy Konsas Contr	RIJ	50	-	
Courier: FedEx UPS VIA Clay F	PEX 🗆	EC		Pace 🗆 🛛 Xroads 🗆 Client 🚺 🛛 Other 🗔
Tracking #: Pace	e Shipp	ing La	bel Use	d? Yes 🗆 No 🗆
Custody Seal on Cooler/Box Present: Yes 🙋 No 🗆	Seals	intact	: Yes 🛙	No 🗆
Packing Material: Bubble Wrap □ Bubble Bags □ Thermometer Used: Type of	\sim	-	oam □ lue No	
Cooler Temperature (°C): As-read D3 Corr. Facto	or <u>+0</u> ,	2	Correc	ted 0.5 Date and initials of person examining contents OI TRUML
Temperature should be above freezing to 6°C	- /		-	1
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	N N0	□n/a	
Rush Turn Around Time requested:	□Yes	N NO	□n/A	
Sufficient volume:	Yes	□No	□n/A	
Correct containers used:	N 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	ØN/A	
Sample labels match COC: Date / time / ID / analyses	Yes	O No		Containers for FIAA-04 Say
Samples contain multiple phases? Matrix: 📈	Yes	κίNo	□n/a	sampled @ 1039
Containers requiring pH preservation in compliance?	Yes	□No	□n/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
(HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	1031	13		
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	□Yes	□No		
Potassium iodide test strip turns blue/purple? (Preserve)	□Yes			
Trip Blank present:	□Yes	ΩNo		
Headspace in VOA vials (>6mm):	□Yes			
Samples from USDA Regulated Area: State:	□Yes	ΠNο	ØN/A	
Additional labels attached to 5035A / TX1005 vials in the field?	□Yes	□No	6N/A	
Client Notification/ Resolution: Copy COC to		Y	/ N	Field Data Required? Y / N
Person Contacted: Date/Ti Comments/ Resolution:	me:			

Project Manager Review:

Date:



CHAIN-OF-CUSTODY / Analytical Request Document

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

	d Client Information:	Section E Required F		t Infon	mation:																F	Page:	1	of	1						
Company	EVERGY KANSAS CENTRAL, INC.	Report To:	Meli	issa I	Michels, 、	Jared Mo	rrison, Jak	ke Hump	hrey	Atten	tion:	A	cou	nts F	Payal	ble															
Address:	()	Сору То:	Lau	ra Hii	nes, Brar	ndon Will	, Sarah Ha	zelwood	1	Com	pany Na	ame:	EV	ERG	iY K	ANS	AS (CEN	TRA	L, I	NOR	EG	JLAT	OR	AG	ENC	Y	10		10.00	
	818 Kansas Ave, Topeka, KS 66612						nek, Danie	elle		Addre	ess:	Se	ee Se	ectio	n A						T	- 1	NPDE	s	v	GROU	JND	WATI	ER (DRINKIN	IG WATER
Email To		Purchase C	Order	No :	10JEC-0	0000477	47			Pace Refer	Quote ence:										1	- 1	JST		F	CRA			Г	OTHER	
	785-575-8113 Fax:	Project Nar	me:	JEC	FAL CC	R				Pace Mana	Project ger.	Ja	ismir	ne Ai	merii	n, 91	13-56	53-1	403			Site	Locat	ion							
Request	ed Due Date/TAT: 7 day	Project Nur	mber:							Pace	Profile #	^{#:} 96	657, ⁻	1									STA	TE:	_	K	S	_			
			_	_														R	equ	este	d Ar	naly	sis Fi	Itere	ed (Y	/N)					
	Section D Valid Matrix C Required Client Information MATRIX	CODE	codes to left)	(dP)		COLL	ECTED					Dr	esen	rativ	00		t N IA	N	N		MA										
		DW	des to	C=COMP)		COLL			z		F	T					>	Ĥ	1	4	~	1	4	-	+		+	ľπ			
	WALER WASTE WATER PRODUCT	WW	valid co		COMP		COMPOS END/GR	STE AB	ECT		11																	Î			
	SOIL/SOLID	SL	(see va	(G=GRAB					COLL	s S							-	* <u>s</u>	als**			-**o	2					E			
	(A-Z, 0-9 / ,-) OTHER	WP AR OT							l ₹	L H							Test	Metals'	Met			Total Matale						orine			
	Sample IDs MUST BE UNIQUE TISSUE	TS	5	ТҮРЕ					TEMP	4TAI	Sed						sis.	Total I	fal			3						Ē	(00)	348	652
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ITEM #			MATRIX CODE	SAMPLE	DATE	TIME	DATE	TIME	SAMPL	# OF CONTAINERS	Unpreserved		밀	NaOH	Methanol	Other	4 Analysis	200.7	200.8 Total Metals'	4500 H+B	300: CI, F, 3	8010						Residual Chlorine (Y/N)	Pace	Project	No./ Lab I.D.
1	FAA-05-091420		wт	<u> </u>	14	-	09/14/20	10:40	t	3	2	1				П		x	-		x)	-						Ħ			
2	FAA-03-091420		WΤ	G			09/14/20	11:10		3	2	1	Π					x	x	x	x)	<)	(П			
3	FAA-04-091420		WΤ	G		*	09/14/20	10:12		3	2	1						x	x	x	x >	$\langle \rangle$	(
4	FAA-06-091420		wт	G	2	-	09/14/20	10:06		3	2	1						х	x	x	x)	$\langle \rangle$	(24
5	DUP-FAL-091420		wт	G		-	09/14/20	10:11		3	2	1						х	x	x	x)	<)						\square			
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12	ADDITIONAL COMMENTS	1	REI		SHED BY /			DAT	L.	-		+		_	CCE	PTE	D BY					+	DATI			ME	+	ш	SAM		TIONS
200.7 To	tal Metals*: B, Ca, Ba, Be	-						-	-	-	2		-12	_			_	_	_		-	+		_		-	5.	<			
200.8 To	tal Metals**: As, Co, Mo, Se			Jaso	n R. Frank	ks / SCS		9/16/:	20	1	7:00	15	-B	130	le	17	11	a	_	-		9	-16-	w	<u> 11</u>	0	4.	2	Y	Y	1-7
	al Metals***: Li	_				_	_		_			_				_	_	_	_	_		+	_	_	_	_	-			· ·	1
	a vistais . L!	-	_							_				_			_				_			_	_	_					
Page				SAMPLER NAME AND SIGNATURE																	°	u p D	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)							
0 PRINT Name of SAMPLER: 0 0					Jas	on R.	Fran	iks	1			_					_			_			Temp in °C	Received on Ice (Y/N)	Sustor led C (Y/N)	ples (Y/N)					
q	SIGNATURE OF SAMPLER:					1	an	1	12	1	_	1			TE S M/D				9/	14/2	20			Чe	Rec	Seal	Sam				
27										1				0	-																



CHAIN-OF-CUSTODY / Analytical Request Document

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

	d Client Information:	Section B Required Pro	oject In	formatic	on:	Section C Invoice Information:											Γ	Page	e:	1	,	of	1													
Compan	EVERGY KANSAS CENTRAL, INC.	Report To: N	leliss	a Mich	hels, Jar	red Mo	rrison, Jak	ke Hump	hrey					ints I																						
Address	Jeffrey Energy Center (JEC)	Сору То: Ц	aura	Hines,	, Brando	on Will,	Sarah Ha	azelwood		Com	pany N	lame:	E٧	/ERC	GY K	ANS	SAS	CE	NTR	RAL,	INC	RE	GUL	ATC	RY	AG	EN	CY								
	818 Kansas Ave, Topeka, KS 66612	J	D Scl	hlegel,	, Melani	ie Satar	nek, Danie	elle		Addr	ess:	S	ee S	ectic	on A							Г	NP	DES	F	, (GRO	UND	WA	TER		DRI	NKING	3 WA	TER	_
Email To	melissa.michels@evergy.com	Purchase Orc	ier No	10.	JEC-000	000477	47			Pace Refer	Quote ence:																									
Phone:	785-575-8113 Fax:	Project Name	: JI	EC FA	AL CCR						Project	t Já	asmi	ne A	mer	in, 9	13-5	563-	1403	3		Sit	e Lo	ocatio	on											
Reques	ed Due Date/TAT: 7 day	Project Numb	er:								Profile	#: 9	657,	1									s	TAT	E:		k	(S								
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	Section D Valid Matrix Concernment Valid Matrix Concernment Valid Matrix Concernment Valid Matrix	odes CODE	eff)	(H)		COLL	ECTED					Pr		vativ			TNIA										Т									
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	OIL	SL OL WP	(see v						COLL	ß							₽	als*	als*				Total Metals***						Σ							
		AR							₽	CONTAINERS							Test	Metal	Met		S04		Meta						Chlorine							
	Sample IDs MUST BE UNIQUE TISSUE	TS							TEMP	I A	2 2					_	Sis	Total	a	m	ш	S	a						15							
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ITEM #			MATRIX		DATE	TIME	DATE	TIME	SAMPLE	ЧО НО #	E	H ₂ SO ₄ HND ₂	P	NaOH	Na ₂ S ₂ O ₃ Mothonol	Other	Analysis	200	200.8 Total Metals*	4500 H+B	300:	2540C TDS	6010						Residual		Pace	e Proi	iect N	10./ L	.ab I.D).
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2	FAA-03-091420	v	VT 0	G	3	- 09/14/20 11:10 3 2 1 X X X X X X X																														
3	FAA-04-091420	v	∧т	G	*		09/14/20	10:12		3	2	1						X	x	x	х	х	х						T							
4	FAA-06-091420	v	VT 0	G		¥2	09/14/20	10:06		3	2	1						X	X	x	х	х	х													
5	DUP-FAL-091420	v	VT 0	G	*		09/14/20	7.22		3	2	1					1	X	X	X	х	х	х						1							
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12						CCII IA T	JATION DATE TIME ACCEPTED BY / AFFILIATIONATIME SAMPLE CONDITIONS																													
200.7 To	ADDITIONAL COMMENTS tal Metals*: B. Ca. Ba. Be		CELING	JUISHE	ED BY / A	FFILIATI												_																		
	tal Metais**: As, Co, Mo, Se	_	Ja	ason R	. Franks	/SCS		9/15/:	B/15/20 17:00 PORE Pace PITTES 740 0.3 Y Y Y																											
		_							OGTIROMUX - OTIVOR-																											
6010 10	tal Metals***: Li								Original COC, sent on																											
								9/15/20 that wasn't received w samples																												
Page					1	SAMPLI	ER NAME A	AND SIGN	ATU	RE		-					2												ç		-		(N/A)-		ntact	
27							PRINT Nam	e of SAM	PLER	Jas	on R.	. Frai	nks			/													ni du		Received or Ice (Y/N)	dy Se	ler (Y		Y/N)	
of 27							SIGNATUR			1	1	- 1-	Z	12	no	2	he		DATE					9/1	4/2	0			Temp	_	Rec	Custo	Cooler		Samples Intact (Y/N)	

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to lale charges of 1.5% per month for any invoices nol paid within 30 days.



October 07, 2020

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

RE: Project: JEC FAL CCR Pace Project No.: 60348695

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on September 17, 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





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

CERTIFICATIONS

Project: JEC FAL CCR Pace Project No.: 60348695

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



SAMPLE SUMMARY

Project: JEC FAL CCR Pace Project No.: 60348695

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60348695001	FAA-05-091420	Water	09/14/20 10:40	09/17/20 10:00
60348695002	FAA-03-091420	Water	09/14/20 11:10	09/17/20 10:00
60348695003	FAA-04-091420	Water	09/14/20 10:12	09/17/20 10:00
60348695004	FAA-06-091420	Water	09/14/20 10:06	09/17/20 10:00
60348695005	DUP-FAL-091420	Water	09/14/20 10:11	09/17/20 10:00



SAMPLE ANALYTE COUNT

Project:JEC FAL CCRPace Project No.:60348695

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60348695001	FAA-05-091420	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60348695002	FAA-03-091420	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60348695003	FAA-04-091420	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60348695004	FAA-06-091420	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60348695005	DUP-FAL-091420	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



PROJECT NARRATIVE

Project: JEC FAL CCR

Pace Project No.: 60348695

Method: EPA 903.1

Description:903.1 Radium 226Client:Evergy Kansas Central, Inc.Date:October 07, 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:



PROJECT NARRATIVE

Project: JEC FAL CCR

Pace Project No.: 60348695

Method: EPA 904.0

Description:904.0 Radium 228Client:Evergy Kansas Central, Inc.Date:October 07, 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:



PROJECT NARRATIVE

Project: JEC FAL CCR

Pace Project No.: 60348695

Method: Total Radium Calculation

Description:Total Radium 228+226Client:Evergy Kansas Central, Inc.Date:October 07, 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.



Project: JEC FAL CCR

Pace Project No.: 60348695

Sample: FAA-05-091420 PWS:	Lab ID: 60348 Site ID:	695001 Collected: 09/14/20 10:40 Sample Type:	Received:	09/17/20 10:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical S	ervices - Greensburg				
Radium-226	EPA 903.1	0.654 ± 0.459 (0.586) C:NA T:95%	pCi/L	10/02/20 12:55	5 13982-63-3	
	Pace Analytical S	ervices - Greensburg				
Radium-228	EPA 904.0	0.609 ± 0.419 (0.801) C:66% T:83%	pCi/L	10/05/20 11:56	6 15262-20-1	
	Pace Analytical S	ervices - Greensburg				
Total Radium	Total Radium Calculation	1.26 ± 0.621 (0.801)	pCi/L	10/06/20 14:01	1 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60348695

Sample: FAA-03-091420 PWS:	Lab ID: 6034869 Site ID:	Collected: 09/14/20 11:10 Sample Type:	Received:	09/17/20 10:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Ser	rvices - Greensburg				
Radium-226	EPA 903.1	0.000 ± 0.329 (0.738) C:NA T:80%	pCi/L	10/02/20 12:55	5 13982-63-3	
	Pace Analytical Ser	rvices - Greensburg				
Radium-228	EPA 904.0	0.772 ± 0.582 (1.16) C:62% T:75%	pCi/L	10/05/20 12:00) 15262-20-1	
	Pace Analytical Ser	rvices - Greensburg				
Total Radium	Total Radium Calculation	0.578 ± 0.778 (1.29)	pCi/L	10/06/20 14:01	1 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60348695

Sample: FAA-04-091420 PWS:	Lab ID: 6034 Site ID:	8695003 Collected: 09/14/20 10:12 Sample Type:	Received:	09/17/20 10:00	Matrix: Water	
Comments: • Sample collection	on time on containers doe	s not match COC; client was notified.				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 903.1	0.000 ± 0.543 (1.13) C:NA T:69%	pCi/L	10/02/20 12:5	5 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 904.0	0.929 ± 0.561 (1.06) C:64% T:78%	pCi/L	10/05/20 12:00	0 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.929 ± 0.781 (1.13)	pCi/L	10/06/20 14:0	1 7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60348695

Sample: FAA-06-091420 PWS:	Lab ID: 60348 Site ID:	Collected: 09/14/20 10:06 Sample Type:	Received:	09/17/20 10:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical S	Services - Greensburg			_	
Radium-226	EPA 903.1	-0.0565 ± 0.367 (0.796) C:NA T:93%	pCi/L	10/02/20 12:55	5 13982-63-3	
	Pace Analytical S	Services - Greensburg				
Radium-228	EPA 904.0	0.286 ± 0.482 (1.05) C:64% T:77%	pCi/L	10/05/20 12:00) 15262-20-1	
	Pace Analytical S	Services - Greensburg				
Total Radium	Total Radium Calculation	0.286 ± 0.606 (1.05)	pCi/L	10/06/20 14:01	7440-14-4	



Project: JEC FAL CCR

Pace Project No.: 60348695

Sample: DUP-FAL-091420 PWS:	Lab ID: 60348699 Site ID:	Collected: 09/14/20 10:11 Sample Type:	Received:	09/17/20 10:00	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Serv	vices - Greensburg			_	
Radium-226	EPA 903.1	-0.0586 ± 0.304 (0.704) C:NA T:94%	pCi/L	10/02/20 12:55	5 13982-63-3	
	Pace Analytical Serv	vices - Greensburg				
Radium-228	EPA 904.0	0.880 ± 0.550 (1.04) C:62% T:80%	pCi/L	10/05/20 12:00) 15262-20-1	
	Pace Analytical Serv	vices - Greensburg				
Total Radium	Total Radium Calculation	0.880 ± 0.628 (1.04)	pCi/L	10/06/20 14:01	7440-14-4	



QUALITY CONTROL - RADIOCHEMISTRY

Project:	JEC FAL CCR				
Pace Project No.:	60348695				
QC Batch:	415224	Analysis Metho	d: EPA 903.1		
QC Batch Method:	EPA 903.1	Analysis Descri	ption: 903.1 Radium-2	26	
		Laboratory:	Pace Analytical	Services - Greensbu	rg
Associated Lab Sa	mples: 6034869500	1, 60348695002, 60348695003, 603	48695004, 60348695005		
METHOD BLANK:	2008178	Matrix: W	ater		
Associated Lab Sa	mples: 6034869500	1, 60348695002, 60348695003, 603	48695004, 60348695005		
Para	meter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0	.000 ± 0.256 (0.555) C:NA T:91%	pCi/L	10/02/20 12:55	

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.



QUALITY CONTROL - RADIOCHEMISTRY

Project:	JEC FAL CCR					
Pace Project No.:	60348695					
QC Batch:	415225		Analysis Method:	EPA 904.0		
QC Batch Method:	EPA 904.0		Analysis Description:	904.0 Radium 2	28	
			Laboratory:	Pace Analytical	Services - Greensbur	g
Associated Lab Sa	mples: 6034869	5001, 603486950	02, 60348695003, 603486950	04, 60348695005		
METHOD BLANK:	2008180		Matrix: Water			
Associated Lab Sa	mples: 6034869	5001, 603486950	02, 60348695003, 603486950	04, 60348695005		
Para	meter	Act ±	Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228		0.438 ± 0.407	(0.825) C:68% T:75%	pCi/L	10/05/20 11:56	

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.



QUALIFIERS

Project: JEC FAL CCR Pace Project No.: 60348695

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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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	JEC FAL CCR
Pace Project No .:	60348695

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60348695001	FAA-05-091420	EPA 903.1	415224		
60348695002	FAA-03-091420	EPA 903.1	415224		
60348695003	FAA-04-091420	EPA 903.1	415224		
60348695004	FAA-06-091420	EPA 903.1	415224		
60348695005	DUP-FAL-091420	EPA 903.1	415224		
60348695001	FAA-05-091420	EPA 904.0	415225		
60348695002	FAA-03-091420	EPA 904.0	415225		
60348695003	FAA-04-091420	EPA 904.0	415225		
60348695004	FAA-06-091420	EPA 904.0	415225		
60348695005	DUP-FAL-091420	EPA 904.0	415225		
60348695001	FAA-05-091420	Total Radium Calculation	417208		
60348695002	FAA-03-091420	Total Radium Calculation	417208		
60348695003	FAA-04-091420	Total Radium Calculation	417208		
60348695004	FAA-06-091420	Total Radium Calculation	417208		
60348695005	DUP-FAL-091420	Total Radium Calculation	417208		

Pittsburgh Lab Sample Condit	ion L	Jpon	Re	ceipt
Pace Analytical Client Name:		Zn	erg	<u>y Kansas</u> Project#
Courier: \Box Fed EX \Box UPS \Box USPS \Box Client Tracking #: $\underline{1408673444}$	39 39	ommei	rcial	Deace Other Label & M
Custody-Seal on Cooler/Box Present:yes		0	Seals	intact:yesno
Thermometer Used	Туре	of Ice:	Wet	Blue None
Cooler Temperature Observed Temp	.	°C	Corre	ection Factor: 🥣 ° Final Temp: ° C
Temp should be above freezing to 6°C				pH paper Lot# Date and Initials of person examining
Comments:	Yes	No	N/A	pH paper Lot# Date and Initials of person examining 101) 219 2 Contents: <u>ハメルビリス ひょ</u> の
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:				5.
-includes date/time/ID Matrix:	\mathcal{V}	1		
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:				10.
-Pace Containers Used:				
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				715.
All containers have been checked for preservation.		-		16. 1 1
exceptions: VOA, collform, TOC, O&G, Phenolics, Non-aqueous matrix	Radon,			pijez
All containers meet method preservation requirements.		-		Initial when TOM 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 AM Date: 918/2000
Client Notification/ Resolution:			-Date/	Time: Contacted-By:
Person-Contacted: Comments/ Resolution:			200	
<u> </u>				
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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.

J:\QAQC\Master\Document Management\Sample Mgt\Sample Condition Upon Receipt Pittsburgh (C056-9 5April2019)



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Company:	Client Information:	Section B Required P	roject			ared Mo	rrison, Jak	e Humn	hrev	Invoid		ormatio		ints F	avat	ole					ł				[Page:	:	1	of	1	
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Email To:	melissa.michels@evergy.com	Purchase C					4/			Refere	ence:						0.55		100					R	CRA			,	OTHER		
	785) 575-8113 Fax:	Project Nan		JEC	FAL CC	ر				Manag		00		ne A	merir	n, 91	3-56	03-14	403		Site	Locat	ion		ĸs						
Requeste	d Due Date/TAT: 15 Day	Project Nun	nber:							Pace	Profile	#: 96	357,	2								STA									
																		R	eque	sted	Analy	sis Fi	ltere	d (Y/	N)						
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	WATER WASTE WATER PRODUCT	WT WW P	(see velid codes to left)	С В	COMPO		COMPOS END/GR	SITE AB	SAMPLE TEMP AT COLLECTION																	(N/X)	·				
	SOLJSOLD	SL. OL	EV 99	(G=GRAB					OLL	s																					
		WP AR		ı ق				<u>_</u>	AT C	NER							es			_						Chlorine					
	(A-Z, 0-9 / ,-) OTHER Sample IDs MUST BE UNIQUE TISSUE	OT TS	lö	ΥΡΕ		1			EMP	ITAI	fed						l Si	-226	228	Kadium						ริ					
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ITEM			MATRIX CODE	SAMPLE TYPE					AMP	# OF CONTAINERS	du	H ₂ SO4 HNO3	Ŗ	NaOH		Other	LAnalysis Test	Radium-	Radium-228	0121						Residual		Derr	Deal+		ah I D
www.co.co.co.co.co.co.co.co.co.co.co.co.co.					DATE	TIME	DATE	TIME	S						<u> 2</u>						┝╌┝╴		┝╼╌┾		┿┥				Project CC1	10./ L	au I.U.
1	FAA-05-091420		WT	G	-		09/14/20	10:40	┢──	2	+	2		+						× ×			┝─┼	_							
2	FAA-03-091420		WT	G	-		09/14/20	11:10	+	2	+	2		┼┼				i i i i i i i i i i i i i i i i i i i		x x	+		┝─┼						<u>~~</u> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
3	FAA-04-091420	·····	WT	G	- :		09/14/20	10:12	+	2	+	2		+		╈				$\frac{x}{x}$	┼─┼╴		┝─┼						Lon		
4	FAA-06-091420		WT WT		-		09/14/20	10:06 10:11	+	2		2		+	+	+			x	-		+	╞╼┼	+			\uparrow		<u>~</u> 5		
5	DUP-FAL-091420		VV ł	<u> </u>	-		09/14/20		1	╞╌╧	+		·	┼╌┼		1		Ĥ		<u>^</u>	† †						1	<i>C</i>	×)		
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Page							ER NAME A			1999 - 1997 -									創作物							Temp in °C		Heceived on Ice (Y/N)	Custody Sealed Cooler (Y/N)		Samples Intact (Y/N)
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*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.

PACE Analytical Services Ra-226 Analysis

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

www.pacelates.com Test:	Ra-226		Analyse must manually Enter An Treas Inquiliqued in	Tenow.	
Analyst			Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:	9/24/2020		Sample Collection Date:		100/00001
Batch ID:	56313		Sample I.D.		
Matrix:	DW		Sample I.D. Sample MS I.D.		
			Sample MSD I.D.		
Method Blank Assessment		7	Spike I.D.:		
MB Sample ID	2008178		MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
MB concentration:	: 0.000		Spike Volume Used in MS (mL);		
M/B Counting Uncertainty	: 0.256		Spike Volume Used in MSD (mL);		
MB MDC			MS Aliquot (L, g, F):		
MB Numerical Performance Indicator			MS Target Conc.(pCi/L, g, F):		
MB Status vs Numerical Indicator:			MSD Aliquot (L, g, F):		
MB Status vs. MDC	: Pass		MSD Target Conc. (pCi/L, g, F):		
			MS Spike Uncertainty (calculated):		
Laboratory Control Sample Assessment	LCSD (Y or N)?	Ŷ	MSD Spike Uncertainty (calculated):		
	LCS56313	LCSD56313	Sample Result:		
Count Date:	10/2/2020	10/2/2020	Sample Result Counting Uncertainty (pCi/L, g, F):		
Spike I.D.:	20-032	20-032/	Sample Matrix Spike Result:		
Spike Concentration (pCi/mL):		32.183	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Volume Used (mL):	0.10	0.10	Sample Matrix Spike Duplicate Result:		
Aliquot Volume (L, g, F):		0.653	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Target Conc. (pCi/L, g, F):		4.930	MS Numerical Performance Indicator:		
Uncertainty (Calculated):		0.232	MSD Numerical Performance Indicator:		
Result (pCi/L, g, F): LCS/LCSD Counting Uncertainty (pCi/L, g, F):	4.068	4.633	MS Percent Recovery:		
Numerical Performance Indicator:	0.903	1.009	MSD Percent Recovery:		
Percent Recovery:		-0.56	MS Status vs Numerical Indicator:		
Status vs Numerical Indicator:		93.97% N/A	MSD Status vs Numerical Indicator:		
Status vs Recovery:	Pass	Pass	MS Status vs Recovery:		
Upper % Recovery Limits:		135%	MSD Status vs Recovery:		
Lower % Recovery Limits:	73%	73%	MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		
· · · · · · · · · · · · · · · · · · ·	1 ,0,0	.070	MOMOD Lower /8 Recovery Links.		
Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
A	1.0050045				
Sample I.D.:	LCS56313	Enter Duplicate	Sample I.D.		
Duplicate Sample I.D. Sample Result (pCi/L, g, F):	LCSD56313	sample IDs if	Sample MS I.D.		
Sample Result Counting Uncertainty (pCi/L, g, F): Sample Result Counting Uncertainty (pCi/L, g, F):	4.068	other than LCS/LCSD in	Sample MSD I.D.		
Sample Result Counting Uncertainty (pCi/L, g, F): Sample Duplicate Result (pCi/L, g, F):			Sample Matrix Spike Result		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	1.009	the space below.	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Are sample and/or duplicate results below RL?	NO		Sample Matrix Spike Duplicate Result:		
Duplicate Numerical Performance Indicator:	-0.818		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:			Duplicate Numerical Performance Indicator:		
Duplicate Status vs Numerical Indicator:	11.55% N/A		(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
Dupircate Status vs Numerical Indicator: Duplicate Status vs RPD:	Pass		MS/ MSD Duplicate Status vs Numerical Indicator:		
% RPD Limit:	32%		MS/ MSD Duplicate Status vs RPD:		
% RPD Linit.	34.70	1	% RPD Limit:		

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

Comments:

Pace Analytical

C441212020

Ra-226_56313_W.xls Ra-226 (R085-8 01Apr2019).xls

Page 19 of 20

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

www.pazelabs.com Test:	Ra-228		Analyst Must Manually Enter All Fields Highlighted In	Tenow.	
Analyst	VAL		Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Date:	9/28/2020		Sample Matrix Spike Control Assessment Sample Collection Date:	NISHNED 1	MONIOU Z
Worklist	56314				
Matrix:	WT		Sample I.D. Sample MS I.D.		
	~~ 1		Sample MSI .D.		
Method Blank Assessment		7	Spike I.D.:		
	2002420				
MB Sample ID	2008180		MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
MB concentration: M/B 2 Sigma CSU:	0.438 0.407		Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL):		
M/B Z Signa CSO. MB MDC:	0.825		MS Aliquot (L, g, F):		
MB Numerical Performance Indicator:	2.11		MS Airquot (L, g, F). MS Target Conc.(pCi/L, g, F):		
MB Status vs Numerical Indicator:		1			
• • • • • • • • • • • • • • • • • • • •	Warning		MSD Aliquot (L, g, F):		
MB Status vs. MDC:	Pass	1	MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated):		
abouston, Control Somple Assessment		<u> </u>			
aboratory Control Sample Assessment	LCSD (Y or N)?	y LOODICOULL	MSD Spike Uncertainty (calculated):		
	LCS56314 10/5/2020	LCSD56314 10/5/2020	Sample Result:		
Count Date: Spike I.D.:	10/5/2020 20-030	20-030	Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result:		
		38.143			
Decay Corrected Spike Concentration (pCi/mL):	38.143	1 I	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Volume Used (mL):	0.10	0.10	Sample Matrix Spike Duplicate Result:		
Aliquot Volume (L, g, F):	0.808 4.720	0.807 4.727	Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): MS Numerical Performance Indicator:		
Target Conc. (pCi/L, g, F):					
Uncertainty (Calculated):	0.231	0.232	MSD Numerical Performance Indicator:		
Result (pCi/L, g, F):	5,869	5.991	MS Percent Recovery:		
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.303 1.70	1.295	MSD Percent Recovery: MS Status vs Numerical Indicator:		
Numerical Performance Indicator: Percent Recovery:	124.35%	1.88 126.75%	MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator:		
Status vs Numerical Indicator:	124.35% N/A	N/A	MSD Status vs Numerical Indicator: MS Status vs Recovery:		
Status vs Numerical Indicator: Status vs Recovery:	Pass	Pass	MSD Status vs Recovery: MSD Status vs Recovery:		
Upper % Recovery Limits;	135%	135%	MS/MSD Upper % Recovery Limits:		
Lower % Recovery Limits;	60%	60%	MS/MSD Opper % Recovery Limits: MS/MSD Lower % Recovery Limits:		
Lower to Recovery Linnis.	00%	00%	Mamiab Lower to Recovery Limits.		
Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:	LCS56314	Enter Duplicate	Sample I.D.		
Duplicate Sample I.D.	LCSD56314	sample IDs if	Sample MS I.D.		
Sample Result (pCi/L, g, F):	5.869	other than	Sample MSD I.D.		
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.303	LCS/LCSD in	Sample Matrix Spike Result:		
Sample Duplicate Result (pCi/L, g, F):	5.991	the space below.	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F);		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.295		Sample Matrix Spike Duplicate Result:		
Are sample and/or duplicate results below RL?	NO		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:	-0.130		Duplicate Numerical Performance Indicator:		
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	1.91%		(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
Duplicate Status vs Numerical Indicator:	Pass	· · · · · · · · · · · · · · · · · · ·	MS/ MSD Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:	Pass	1	MS/ MSD Duplicate Status vs RPD:		
% RPD Limit:	36%		% RPD Limit:		

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

Comments:

Pace Analytical

OW DUG WW

10.6.30

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ATTACHMENT 2 Statistical Analyses ATTACHMENT 2-1 September 2019 Statistical Analyses



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

TECHNICAL MEMORANDUM

November 4, 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 2019 Semi-annual Groundwater Assessment Monitoring Data Statistical Evaluation Completed January 20, 2020 Jeffrey Energy Center Fly Ash Landfill

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 2019** semi-annual assessment monitoring groundwater sampling event for the Jeffrey Energy Center (JEC) Fly Ash Landfill (FAL). This semi-annual assessment monitoring groundwater sampling event was completed on **September 12, 2019**, with laboratory results received and accepted on **October 22, 2019**.

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 level (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, 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 January 14, 2019. 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 (UTLs), 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.

Evergy Kansas Central, Inc. November 4, 2022 Page 2

STATISTICAL EVALUATION

Either an interwell or intrawell evaluation was used to determine SSIs. Interwell evaluation compares the most recent values from downgradient compliance wells against a background dataset composed of upgradient well data, and the intrawell evaluation compares the most recent values from each compliance well against a background dataset composed of its own historical 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 2019** 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 MW-FAA-5 (for interwell evaluation) 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 **September 2018** for **interwell evaluation**. Background concentrations were updated through **June 2019** for **intrawell evaluation**.



Evergy Kansas Central, Inc. November 4, 2022 Page 3

RESULTS OF APPENDIX IV DOWNGRADIENT STATISTICAL COMPARISONS

Sample concentrations from the downgradient wells for each of the detected Appendix IV constituents from the **September 2019** 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. Based on previous compliance sampling events, statistical evaluations, and associated alternative source demonstrations, an intrawell comparison is utilized for FAA-6 for molybdenum statistical evaluations. Interwell comparisons are being utilized for all other well and constituent evaluations. 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 2019, no SSLs above GWPS occurred at the JEC FAL.**

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 2019 SAMPLING EVENT JEFFREY ENERGY CENTER FLY ASH LANDFILL

ST. MARYS, KANSAS

Location Id Detect MW-FAA-5 (upgradient) 9/1 MW-FAA-5 (upgradient) 9/1 MW-FAA-4 0/1 MW-FAA-6 13/ MW-FAA-5 (upgradient) 4/1 MW-FAA-6 13/ MW-FAA-5 (upgradient) 4/1 MW-FAA-6 13/ MW-FAA-6 12/ MW-FAA-6 12/	better Non-legendres 9/13 3 3/13 7 0/13 10 3/13 0 4/13 6 3/13 0 3/13 0 3/13 0 3/13 0 9/13 3 2/13 8	ercent Range o Non-Detects 31% 0.001-0.00 77% 0.001-0.00 100% 0.0005-0.0 0% - 0% - 0% - 31% 0.001-0.00	1 0.0035 1 0.0011	Variance 9.183E-07 1.541E-09 1.923E-08 2.131E-06 0.00000814 0.0000291 3.769E-06	Standard Deviation 0.0009583 0.00003926 0.0001387 0.00146 0.002853 0.005395	Coefficient of Variance 0.6223 0.03929 0.1442 0.2471 0.3963	CCR MCL/RSL 0.010 0.010 0.010 0.010	Report Result Unit mg/L mg/L mg/L	Detection Exceedances (Y/N) N N N	Exceedances	Number of Non- Detection Exceedances Appendix-IV: A 0	1	Outlier Removed	Trend	Distribution Well	September 2019 Concentration (mg/L)	Background Limits ¹ (UTL)	SSI	Background Limits ² (UTL)	SSI	GWPS (Higher of MCL/ RSL or UTL)	SSL
MW-FAA-3 3/1 MW-FAA-4 0/1 MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-3 13/ MW-FAA-4 13/ MW-FAA-6 13/ MW-FAA-3 13/ MW-FAA-6 12/ MW-FAA-6 12/	3/13 7 0/13 10 3/13 10 3/13 0 4/13 6 3/13 0 3/13 0 3/13 0 3/13 0 9/13 3 2/13 8	77% 0.001-0.00 100% 0.0005-0.0 0% - 69% 0.005-0.0 0% - 0% - 0% -	l 0.0011 1 0.0086 0.013 0.047 0.053	1.541E-09 1.923E-08 2.131E-06 0.00000814 0.0000291 3.769E-06	0.00003926 0.0001387 0.00146 0.002853	0.03929 0.1442 0.2471	0.010 0.010	mg/L mg/L	N	0	0	1	(mag/1)				mg/L		mg/L		(mg/L)	
MW-FAA-3 3/1 MW-FAA-4 0/1 MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-3 13/ MW-FAA-4 13/ MW-FAA-6 13/ MW-FAA-3 13/ MW-FAA-6 12/ MW-FAA-6 12/	3/13 7 0/13 10 3/13 10 3/13 0 4/13 6 3/13 0 3/13 0 3/13 0 3/13 0 9/13 3 2/13 8	77% 0.001-0.00 100% 0.0005-0.0 0% - 69% 0.005-0.0 0% - 0% - 0% -	l 0.0011 1 0.0086 0.013 0.047 0.053	1.541E-09 1.923E-08 2.131E-06 0.00000814 0.0000291 3.769E-06	0.00003926 0.0001387 0.00146 0.002853	0.03929 0.1442 0.2471	0.010 0.010	mg/L mg/L	N	-			(mg/L)									
MW-FAA-4 0/1 MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-5 (upgradient) 4/1 MW-FAA-3 13/ MW-FAA-4 13/ MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-5 (upgradient) 9/1 MW-FAA-5 (upgradient) 9/1 MW-FAA-6 12/ MW-FAA-6 12/	0/13 10 3/13 0 4/13 6 3/13 0 3/13 0 3/13 0 3/13 0 9/13 3 2/13 8	100% 0.0005-0.0 0% - 69% 0.005-0.0 0% - 0% - 0% -	1 0.0086 0.013 0.047 0.053	1.923E-08 2.131E-06 0.00000814 0.0000291 3.769E-06	0.0001387 0.00146 0.002853	0.1442 0.2471	0.010	mg/L		0		No	No	Stable	Normal	< 0.0010	0.00372				0.010	
MW-FAA-6 13/ MW-FAA-5 (upgradient) 4/1 MW-FAA-3 13/ MW-FAA-4 13/ MW-FAA-6 12/ MW-FAA-6 12/	3/13 () 4/13 6 3/13 () 3/13 () 3/13 () 9/13 3 2/13 8	0% - 69% 0.005-0.0 0% - 0% - 0% -	0.0086 0.013 0.047 0.053	2.131E-06 0.00000814 0.0000291 3.769E-06	0.00146	0.2471		.	N		0	Yes	No	NA	Non-parametric	< 0.0010		No				No
MW-FAA-5 (upgradient) 4/1 MW-FAA-3 13/ MW-FAA-4 13/ MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-5 (upgradient) 9/1 MW-FAA-3 2/1 MW-FAA-6 12/	4/13 6 3/13 (3/13 (3/13 (3/13 (9/13 3 2/13 8	69% 0.005-0.0 0% - 0% - 0% -	0.013 0.047 0.053	0.00000814 0.0000291 3.769E-06	0.002853		0.010	mg/l		0	0	NA	NA	NA	NA	< 0.0010		No				No
MW-FAA-3 13/ MW-FAA-4 13/ MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-6 13/ MW-FAA-5 0/1 MW-FAA-4 0/1 MW-FAA-6 12/	3/13 () 3/13 () 3/13 () 9/13 3 2/13 8	0% - 0% - 0% -	0.047 0.053	0.0000291 3.769E-06		0.3963			N	0	0	No	No	Stable	Non-parametric	0.0073		Yes				No
MW-FAA-3 13/ MW-FAA-4 13/ MW-FAA-6 13/ MW-FAA-5 (upgradient) 9/1 MW-FAA-3 2/1 MW-FAA-4 0/1 MW-FAA-6 12/	3/13 () 3/13 () 3/13 () 9/13 3 2/13 8	0% - 0% - 0% -	0.047 0.053	0.0000291 3.769E-06																		
MW-FAA-4 13/ MW-FAA-6 13/ MW-FAA-5 13/ MW-FAA-5 9/1 MW-FAA-3 2/1 MW-FAA-4 0/1 MW-FAA-6 12/	3/13 (3/13 (9/13 3 2/13 8	0% - 0% -	0.053	3.769E-06	0.005395		2	mg/L	N	0	0	No	No	NA	Normal	<0.0050	0.0136				2	
MW-FAA-6 13/ MW-FAA-5 (upgradient) 9/1 MW-FAA-3 2/1 MW-FAA-4 0/1 MW-FAA-6 12/	3/13 (9/13 3 2/13 8	- 0%		_		0.1609	2	mg/L	N	0	0	No	No	Decreasing	Normal	0.032		Yes				No
MW-FAA-5 (upgradient) 9/1 MW-FAA-3 2/1 MW-FAA-4 0/1 MW-FAA-6 12/	9/13 3 2/13 8		0.067		0.001941	0.03842	2	mg/L	N	0	0	No	No	Stable	Normal	0.051		Yes				No
MW-FAA-3 2/1 MW-FAA-4 0/1 MW-FAA-6 12/	2/13 8	31% 0.001-0.00		0.0003259	0.01805	0.3513	2	mg/L	N	0	0	No	No	Stable	Non-parametric	0.024		Yes				No
MW-FAA-3 2/1 MW-FAA-4 0/1 MW-FAA-6 12/	2/13 8	31% 0.001-0.00								CCR	Appendix-IV:	obalt, Total	mg/L)									
MW-FAA-4 0/1 MW-FAA-6 12/		0.001 0.00	1 0.0056	2.388E-06	0.001545	0.7501	0.006	mg/L	N	0	0	No	No	Stable	Non-parametric	0.0040	0.0036				0.006	
MW-FAA-6 12/		85% 0.001-0.00	1 0.00058	2.871E-08	0.0001694	0.182	0.006	mg/L	N	0	0	No	No	NA	Non-parametric	<0.0010		No				No
	0/13 10	0.0005-0.0	1	1.923E-08	0.0001387	0.1442	0.006	mg/L	N	0	0	NA	NA	NA	NA	<0.0010		No				No
	.2/13 8	8% 0.001-0.00	1 0.0018	6.953E-08	0.0002637	0.206	0.006	mg/L	N	0	0	No	No	Stable	Normal	0.0015		No				No
				•		•				CC	R Appendix-I	: Fluoride (m	g/L)									
MW-FAA-5 (upgradient) 13/	.3/14	7% 0.2-0.2	1.6	0.1226	0.3502	0.4274	4	mg/L	N	0	0	No	No	Stable	Normal	<0.20	1.261				4.0	
	.3/14	7% 0.2-0.2	0.43	0.003192	0.0565	0.1716	4	mg/L	N	0	0	No	No	Increasing	Normal	<0.20		No				No
MW-FAA-4 14/	.4/14 (- 0%	0.44	0.001779	0.04217	0.1217	4	mg/L	N	0	0	No	No	Increasing	Normal	0.32		No				No
MW-FAA-6 15/	.5/15 (- 0%	1.2	0.03133	0.177	0.2102	4	mg/L	N	0	0	No	No	Stable	Normal	0.97		No				No
										CCR A	Appendix-IV: L	thium, Total	(mg/L)									
MW-FAA-5 (upgradient) 13/	.3/13 (- 0%	0.16	0.0009568	0.03093	0.2722	0.040	mg/L	Y	13	0	No	No	Stable	Normal	0.11	0.183				0.183	
110	.1/13 1	15% 0.01-0.02	0.019	8.423E-06	0.002902	0.1886	0.040	mg/L	N	0	0	No	No	Stable	Normal	0.015		No				No
MW-FAA-4 11/	.1/13 1	15% 0.01-0.02	0.02	0.000009	0.003	0.1875	0.040	mg/L	N	0	0	No	No	Stable	Normal	0.020		No				No
MW-FAA-6 9/1	9/13 3	31% 0.01-0.02	0.016	8.397E-06	0.002898	0.2354	0.040	mg/L	N	0	0	No	No	Stable	Non-parametric	0.012		No				No
	· .									CCR App	endix-IV: Mol	/bdenum, To	tal (mg/L)									
MW-FAA-5 (upgradient) 13/	.3/13 (0% -	0.067	0.0003091	0.01758	0.5136	0.100	mg/L	N	0	0	No	No	Stable	Normal	0.034	0.0699				0.100	
		0% -	0.014	7.981E-06	0.002825	0.2747	0.100	mg/L	N	0	0	No	No	Stable	Normal	0.013		No				No
		0% -	0.0072	2.481E-06	0.001575	0.4179	0.100	mg/L	N	0	0	No	No	Stable	Increasing	0.0054		No				No
MW-FAA-6 13/	.3/13 (- 0%	0.59	0.01551	0.1245	0.27	0.100	mg/L	Y	13	0	No	No	Stable	Normal	0.58			0.929	N	0.929	No
				•				-		CCR App	pendix-IV: Rad	ium-226 & 22	28 (pCi/L)									
MW-FAA-5 (upgradient) 12/	.2/12 (- 0%	1.907	0.2347	0.4845	0.6147	5	pCi/L	N	0	0	No	No	Stable	Normal	0.794	1.3				5	
		8% 0.857-0.8		0.2071	0.4551	0.9462	5	pCi/L	N	0	0	No	No	Stable	Normal	0.857	-	No				No
		8% 0.335-0.33		0.1484	0.3852	0.7663	5	pCi/L	N	0	0	No	No	Stable	Normal	0.335		No				No
		8% 0.136-0.13		0.2714	0.521	1.915	5	pCi/L	N	0	0	No	No	Stable	Normal	0.136		No				No
- /			<u> </u>					P - 7		-	ppendix-IV: Se											
MW-FAA-5 (upgradient) 7/1	7/13 4	46% 0.0005-0.0	1 0.0039	1.194E-06	0.001093	0.6097	0.05	mg/L	N	0	0	No	No	NA	Normal	0.0033	0.00369				0.05	
		100% 0.0005-0.0		1.923E-08	0.0001387	0.1442	0.05	mg/L	N	0	0	NA	NA	NA	NA	<0.0010		No				No
1	,	62% 0.001-0.00		8.064E-08	0.000284	0.2429	0.05	mg/L	N	0	0	No	No	NA	Non-parametric	0.0016		No				No
		77% 0.0005-0.0		0.00001305	0.003612	1.813	0.05	mg/L	N	0	0	Yes	No	NA							4	No

Notes and Abbreviations:

¹ Based on background data collected from 08/19/2016 through 09/13/2018

² Based on background data collected from 08/19/2016 through 06/24/2019

CCR = coal combustion residuals

GWPS = Groundwater Protection Standard

MCL = maximum contaminant level

mg/L = milligrams per Liter

NA = not analyzed

PC/L = picoCuries per Liter PC/L = picoCuries per Liter RSL = regional screening level SSI = statistically significant increase SSL = statistically significant level UT

UTL = upper tolerance limits

ATTACHMENT 2-2 March 2020 Statistical Analyses



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

TECHNICAL MEMORANDUM

November 4, 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 Fly Ash Landfill

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) Fly Ash Landfill (FAL). This semi-annual assessment monitoring groundwater sampling event was completed on **March 4 and 5, 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 residuals (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 January 14, 2019. 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

Evergy Kansas Central, Inc. November 4, 2022 Page 2

most recent groundwater sampling event from each compliance well was compared to the corresponding background UTL to determine if a SSL existed.

STATISTICAL EVALUATION

Either an interwell or intrawell evaluation was used to determine SSIs. Interwell evaluation compares the most recent values from downgradient compliance wells against a background dataset composed of upgradient well data, and the intrawell evaluation compares the most recent values from each compliance well against a background dataset composed of its own historical 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.



Evergy Kansas Central, Inc. November 4, 2022 Page 3

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample location MW-FAA-5 (for interwell evaluation) 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 2020** for **interwell evaluation**. Background concentrations were updated through **June 2019** for **intrawell evaluation**.

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. Based on previous compliance sampling events, statistical evaluations, and associated alternative source demonstrations, an intrawell comparison is utilized for FAA-6 for molybdenum statistical evaluations. Interwell comparisons are being utilized for all other well and constituent evaluations. 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 FAL.**

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 FLY ASH LANDFILL

ST. MARYS, KANSAS

										MCL Co	mparison						Interwell	Analysis	Intrawell	Analysis	Groundwater Protect	tion 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	Background Limits ² (UTL) mg/L	SSI	GWPS (Higher of MCL/ 40 CFR § 257.95(h)(2) or UTL)	SSL
								I		СС	R Appendix-IV:	Arsenic, Tota	al (mg/L)		1	•	 		_ _			
MW-FAA-5 (upgradient)	9/14	36%	0.001-0.001	0.0035	8.685E-07	0.0009319	0.6207	0.010	mg/L	0	0	No	No	Stable	Non-parametric	< 0.0010	0.0035				0.010	
MW-FAA-3	3/14	79%	0.001-0.001	0.0011	1.423E-09	0.00003772	0.03774	0.010	mg/L	0	0	Yes	No	NA	Non-parametric	< 0.0010		No				No
MW-FAA-4	0/14	100%	0.0005-0.001		1.786E-08	0.0001336	0.1386	0.010	mg/L	0	0	NA	NA	NA	NA	< 0.0010		No				No
MW-FAA-6	14/14	0%	-	0.0086	1.978E-06	0.001406	0.2369	0.010	mg/L	0	0	No	No	Stable	Non-parametric	0.0063		Yes				No
		-								CC	R Appendix-IV:	Barium, Tota	nl (mg/L)			-						
MW-FAA-5 (upgradient)	4/14	71%	0.005-0.01	0.013	0.00000786	0.002803	0.3981	2	mg/L	0	0	No	No	NA	Non-parametric	< 0.0050	0.013				2	
MW-FAA-3	14/14	0%	-	0.047	0.00003207	0.005663	0.172	2	mg/L	0	0	Yes	No	Decreasing	Normal	0.025		Yes				No
MW-FAA-4	14/14	0%	-	0.053	3.648E-06	0.00191	0.03788	2	mg/L	0	0	No	No	Stable	Normal	0.049		Yes				No
MW-FAA-6	14/14	0%	-	0.067	0.0003399	0.01844	0.3709	2	mg/L	0	0	No	No	Decreasing	Non-parametric	0.028		Yes				No
		I	I		I			1 1		1	R Appendix-IV:	r			I	I					_	
MW-FAA-5 (upgradient)	10/14	29%	0.001-0.001	0.0056	2.629E-06	0.001622	0.7258	0.006	mg/L	0	0	No	No	Increase	Normal	0.0045	0.00521				0.006	
MW-FAA-3	2/14	86%	0.001-0.001	0.00058	2.684E-08	0.0001638	0.1751	0.006	mg/L	0	0	No	No	NA	Non-parametric	< 0.0010		No				No
MW-FAA-4	1/14	93%	0.0005-0.001	0.0013	2.593E-08	0.000161	0.1634	0.006	mg/L	0	0	Yes	No	NA	NA	0.0013		No				No
MW-FAA-6	13/14	7%	0.001-0.001	0.0018	8.35E-08	0.000289	0.2194	0.006	mg/L	0	0	No	No	Stable	Normal	0.0018		No				No
				11	1			1			CCR Appendix-I	1				1			- <u> </u>			
MW-FAA-5 (upgradient)	14/15	7%	0.2-0.2	1.6	0.114	0.3377	0.4138	4.0	mg/L	0	0	Yes	No	Stable	Normal	0.77	1.430				4.0	
MW-FAA-3	14/15	7%	0.2-0.2	0.43	0.003021	0.05496	0.1679	4.0	mg/L	0	0	No	No	Stable	Normal	0.30		No	<u> </u>			No
MW-FAA-4	14/15	7%	0.2-0.2	0.44	0.003081	0.05551	0.1649	4.0	mg/L	0	0	Yes	No	Stable	Normal	< 0.20		No				No
MW-FAA-6	15/15	0%	-	1.2	0.03109	0.1763	0.2121	4.0	mg/L	0	0	No	No	Stable	Normal	0.67		No				No
MALEAAE (unamediant)	14/14	0%	1	0.16	0.0009329	0.03054	0.2644	0.040		14	R Appendix-IV: I	-		Ctabla	Nerreal	0.14	0.171		T T		0.171	
MW-FAA-5 (upgradient) MW-FAA-3	14/14 12/14	0% 14%	- 0.01-0.02	0.16	7.962E-06	0.03054	0.2644	0.040	mg/L	0	0	No No	No No	Stable Stable	Normal Normal	0.14 0.017	0.171	No			0.171	No
MW-FAA-3	12/14	14%	0.01-0.02	0.019	7.962E-06 8.951E-06	0.002822	0.182	0.040	mg/L mg/L	0	0	NO	No	Stable	Normal	0.017		NO	+			NO
MW-FAA-6	12/14	29%	0.01-0.02	0.02	7.874E-06	0.002992	0.1845	0.040	mg/L	0	0	Yes	No	Stable	Non-parametric	0.019		No				No
WW-FAA-0	10/14	2378	0.01-0.02	0.010	7.874L-00	0.002800	0.2297	0.040	iiig/L	÷	ppendix-IV: Mo			Stable	Non-parametric	0.011		INU				INU
MW-FAA-5 (upgradient)	14/14	0%	-	0.067	0.0002854	0.01689	0.4937	0.1	mg/L	0	0	No	No	Stable	Normal	0.034	0.0652				0.100	
MW-FAA-3	14/14	0%	-	0.007	7.678E-06	0.002771	0.2734	0.1	mg/L	0	0	No	No	Stable	Normal	0.0082	0.0052	No	-		0.100	No
MW-FAA-4	14/14	0%	-	0.0072	2.529E-06	0.00159	0.4078	0.1	mg/L	0	0	No	No	Stable	Increasing	0.0056		No	<u> </u>			No
MW-FAA-6	14/14	0%	-	0.59	0.01479	0.1216	0.267	0.1	mg/L	14	0	No	No	Stable	Normal	0.38			0.929	No	0.929	No
	,										ppendix-IV: Ra				1							
MW-FAA-5 (upgradient)	13/14	7%	0.587-0.587	2.43	0.3119	0.5585	0.4235	5	pCi/L	0	0	No	No	Stable	Normal	0.587	2.342				5	
MW-FAA-3	12/14	14%	0.453-0.857	1.792	0.2154	0.4641	0.6849	5	pCi/L	0	0	No	No	Stable	Normal	0.928		No				No
MW-FAA-4	12/14	14%	0.335-0.744	1.54	0.1779	0.4218	0.5897	5	pCi/L	0	0	No	No	Stable	Normal	0.744		No				No
MW-FAA-6	12/14	14%	0.0926-0.136	1.43	0.1935	0.4399	0.6903	5	pCi/L	0	0	No	No	Stable	Normal	0.0926		No				No
				•			•			CCR	Appendix-IV: S	elenium, Tot	al (mg/L)		•							
MW-FAA-5 (upgradient)	7/14	50%	0.0005-0.001	0.0039	1.147E-06	0.001071	0.617	0.05	mg/L	0	0	No	No	NA	Normal	< 0.0010	0.00370				0.05	
MW-FAA-3	0/14	100%	8.6E-05-0.001		7.251E-08	0.0002693	0.2995	0.05	mg/L	0	0	NA	NA	NA	NA	< 0.0010		No				No
MW-FAA-4	5/14	64%	0.001-0.001	0.0019	7.648E-08	0.0002766	0.239	0.05	mg/L	0	0	No	No	NA	Non-parametric	< 0.0010		No				No
MW-FAA-6	4/14	71%	0.0005-0.001	0.014	0.0000121	0.003478	1.804	0.05	mg/L	0	0	Yes	No	NA	Non-parametric	0.0011		No				No
Notes and Abbreviations:																						

¹ Based on background data collected from 08/19/2016 through 03/04/2020.

² Based on background data collected from 08/19/2016 through 06/23/2019.

* 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 Standarc

MCL = maximum contaminant level

mg/L = milligrams per Liter

NA = not analyzed

pCi/L = picoCuries per Liter

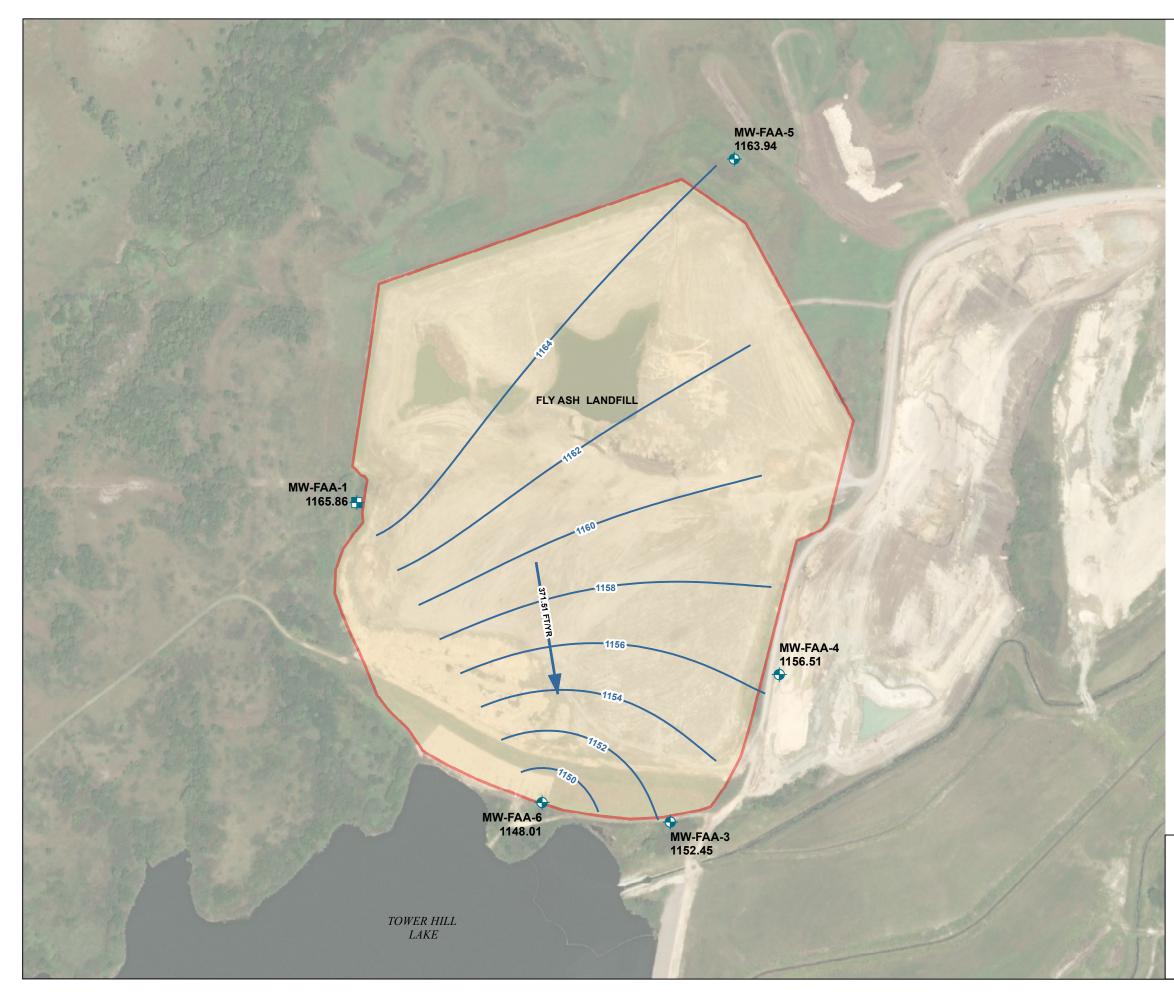
SSI = statistically significant increase

SSL = statistically significant level

UTL = upper tolerance limits



ATTACHMENT 3 Revised Groundwater Potentiometric Maps



LEGEND MW-FAA-4WELL NAME AND GROUNDWATER ELEVATION IN FEET1167.47ABOVE MEAN SEA LEVEL (AMSL), MARCH 2020 -PIEZOMETER OBSERVATION ONLY MONITORING WELL ESTIMATED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION CONTOUR, 2-FT INTERVAL (AMSL) GROUNDWATER FLOW DIRECTION AND APPROXIMATE GROUNDWATER FLOW RATE (FEET/YEAR) FLY ASH LANDFILL

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 03 MARCH 2020.

3. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETRIC ELEVATIONS MEASURED 03 MARCH 2020 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.

4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019



800

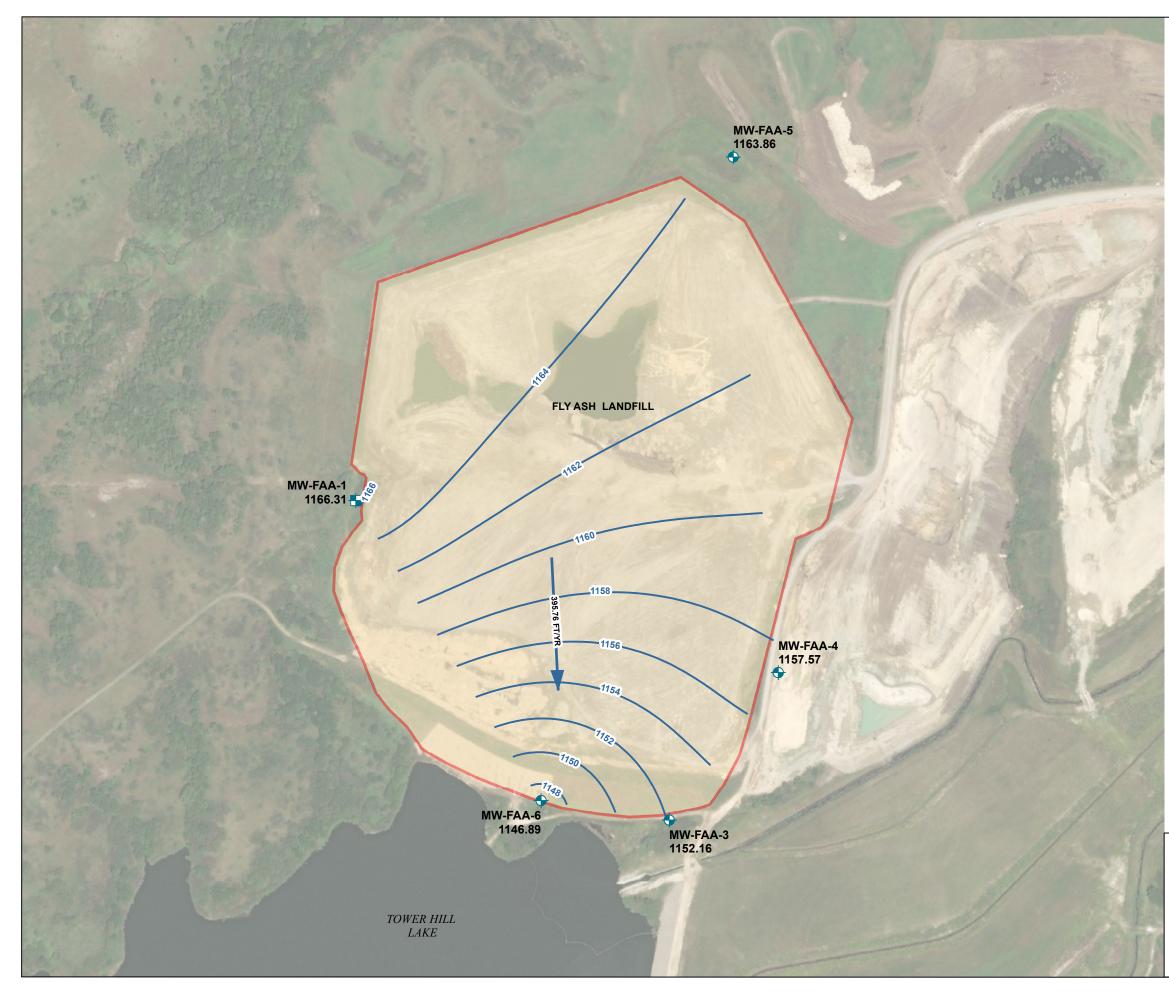
400 SCALE IN FEET

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

FLY ASH LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP MARCH 3, 2020

>> evergy NOVEMBER 2022

FIGURE 2



LEGEND MW-FAA-4WELL NAME AND GROUNDWATER ELEVATION IN FEET1167.47ABOVE MEAN SEA LEVEL (AMSL), JUNE 2020 PIEZOMETER OBSERVATION ONLY MONITORING WELL ESTIMATED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION CONTOUR, 2-FT INTERVAL (AMSL) GROUNDWATER FLOW DIRECTION AND APPROXIMATE GROUNDWATER FLOW RATE (FEET/YEAR) FLY ASH LANDFILL

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 11 JUNE 2020.

3. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETRIC ELEVATIONS MEASURED 11 JUNE 2020 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.

4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019



400

SCALE IN FEET

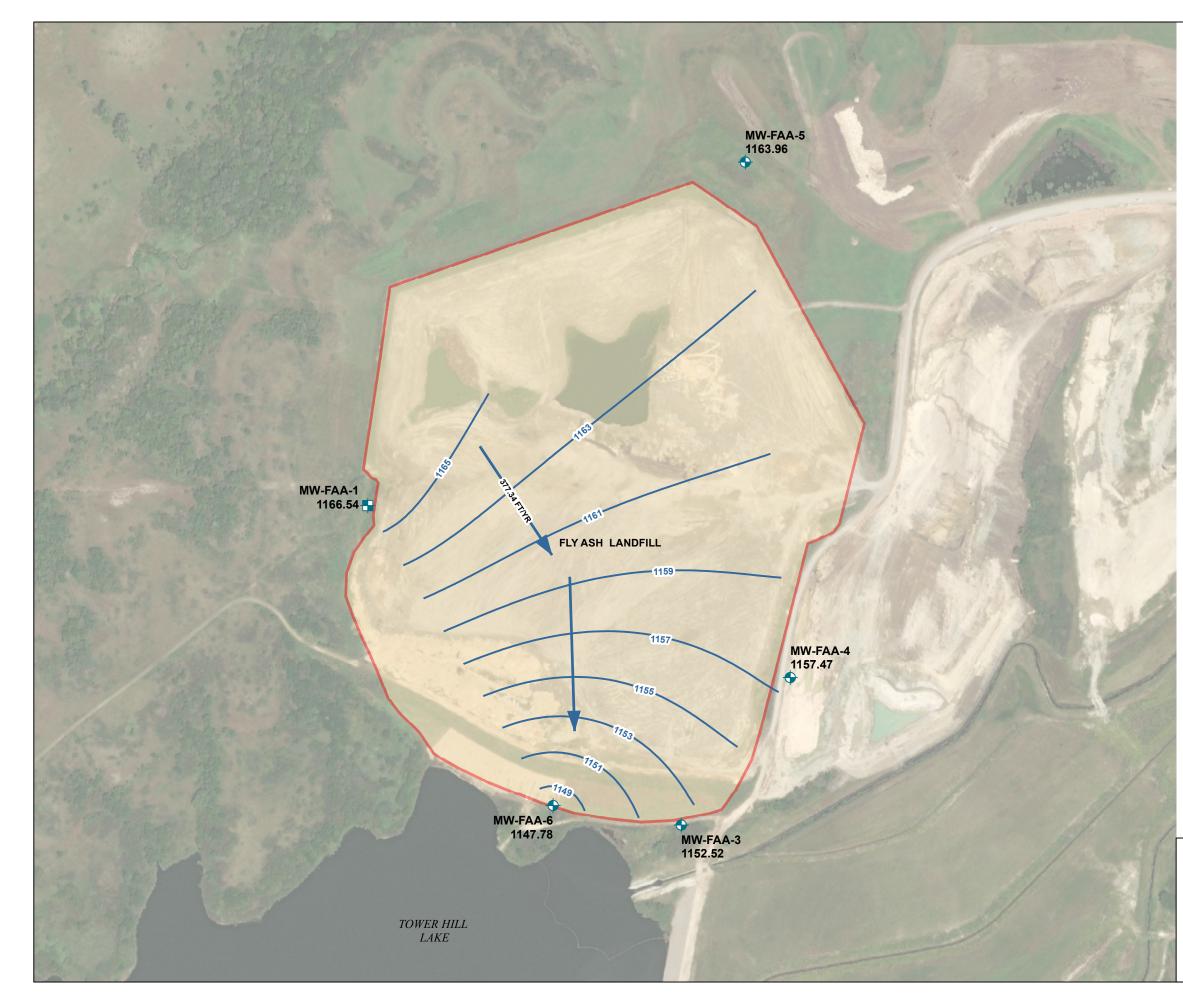
EVERGY KANSAS CENTRAL, INC. JEFFREY ENERGY CENTER ST. MARY'S, KANSAS

FLY ASH LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP JUNE 11, 2020

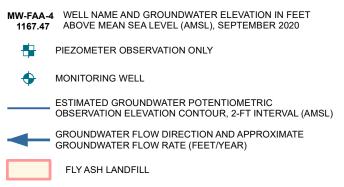
800

>> evergy NOVEMBER 2022

FIGURE 3



LEGEND



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 POTENTIOMETRIC 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



800

400 SCALE IN FEET

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

FLY ASH LANDFILL **GROUNDWATER POTENTIOMETRIC** ELEVATION CONTOUR MAP SEPTEMBER 14, 2020



FIGURE 4